

UNITED STATES GOVERNMENT

# Memorandum

Clay Hudy  
fwCB  
1462

TO : Assistant Director Eastman

DATE: May 14, 1973

FROM : ATF Leader

SUBJECT: Charley Wild River Report, Alaska

Enclosed are two copies of the subject report. The original cut and paste and pencil maps are being forwarded under separate cover to Fred Strack.

A copy of the report have been provided NWRO and BLM, BSF&W, NPS and FS planning teams in Anchorage.

This report has been revised to reflect comments received on a Discussion Draft distributed in January, 1973 and is based upon incomplete field work in the headwater areas. Field work was originally scheduled for this week but break-up has not proceeded to the extent to permit needed examination of the upper drainages.

An interagency meeting will be held in the Fairbanks District office, BLM, on May 21 and 22 to review and revise as necessary. Aerial inspection may be required on the 23rd and arrangements have been made to provide interim data pending completion of field work which has been rescheduled for August. Revised data will be sent to you about June 1.

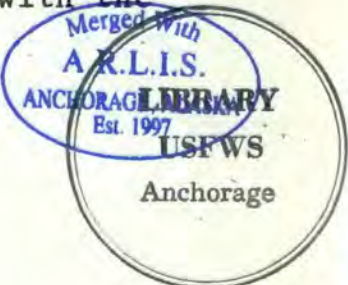
We have received preliminary notice from BLM that this winter a new airstrip and cabin has been constructed within the 17 (d)(2) corridor withdrawal along the river upstream from Copper Creek. We are not certain of the details but it appears that this activity has been undertaken on a mining claim located after the 17 (d)(2) corridor withdrawal. This will be checked and a report prepared. BLM has completed preliminary field examination of the location.

Photographs and appendices will be forwarded with the next revision.

Jules V. Tileston

ARLIS

Alaska Resources  
Library & Information Services  
Anchorage Alaska



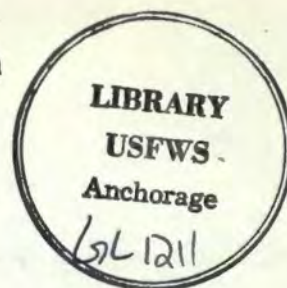


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US FISH & WILDLIFE SERVICE--ALASKA

Charley River and Tributaries, 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.

May 12, 1973

Bureau of Outdoor Recreation  
Alaska Task Force

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I.

INTRODUCTION

This report evaluates the free-flowing character of the Charley 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 pattern in Alaska will take place. This in turn will largely determine foreseeable 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; designed 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-flowing 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 interest, including nonprofit organizations, in the establishment of wild, scenic and recreational river areas.

For this reason two methods for 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 Native 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 Charley River, Alaska, and its principal 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 should be considered for inclusion in the system and to identify those having the highest potential for inclusion. Federal and State agencies, conservation groups, and others knowledgeable about Alaska recommended that some 166 Alaskan rivers 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 3, p. 27). These rivers were selected without regard to existing or potential ownership by Federal, State, or Native groups.

The Charley River is listed in the Alaska Statewide Comprehensive Outdoor Recreation Plan (1970) as a free-flowing river identified by the Bureau of Land Management as having potential for inclusion in the National Wild and Scenic Rivers System.

On May 9, 1970, the Bureau of Land Management published notice in the Federal Register of a proposed classification of



the 12,450,000 acre "Fortymile unit" under the provisions of the Classification and Multiple-Use Act. The Charley River basin in its entirety was included in that proposed classification as an area to remain in Federal ownership and administered under the concepts of multiple-use. The proposed classification was not finalized.

In March, 1972, the Secretary of the Interior made a preliminary withdrawal of the entire Charley River basin as a potential addition to the four national conservation systems as contemplated under the provisions of Section 17(d)(2). On September 16, 1972, substantial portions of the Charley River basin were deleted from the initial 17(d)(2) withdrawal. But all of the river and its immediate environment were either retained as part of a larger 17(d)(2) withdrawal along the Upper Yukon River or as a two mile wide corridor. The latter corridor withdrawal includes approximately 160,000 acres.

#### Conduct of the Study

The study of the Charley 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 the 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

Tanana Chiefs Conference (Doyon, Ltd.)

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 Sport Fisheries  
& Wildlife

Bureau of Indian Affairs

Geological Survey

Bureau of Land Management

National Park Service

Bureau of Mines

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 and canoe during 1972 and 1973.

## II. SUMMARY OF FINDINGS AND RECOMMENDATIONS

### Findings

This study shows that the Charley River, Alaska, and its principal tributaries possess values which qualify it for inclusion in the National Wild and Scenic Rivers System. The Charley 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 Charley River is an intermediate sized, north-flowing, clearwater tributary to the Yukon River. Rising in unglaciated, rolling topography, the river is outstandingly remarkable in its combination of:

- Overall primitive character.
- Excellent opportunities for white-water canoeing, hiking and other trail uses, camping, fishing and hunting as well as nature and geology study.
- Wildlife values, especially an unusual band of Dall Sheep which may be viewed at close range at the river's edge.

It has also been found that:

- The range and high quality of existing and potential outdoor

recreation opportunities are 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 Charley River area.
- Derwent and Flat Creeks which flow across lands designated by the Secretary of the Interior in December, 1972, for potential Native selection would make worthy additions to and supplement the free-flowing values of the Charley River and its immediate environment.
- The entire Charley River basin is located within a broad mineralized belt. There are no active or patented mining claims in the river's immediate environment and only two instances of gold have been noted. Both were of a noncommercial quantity.
- There are no commercial timber values.
- There are no hydroelectric power potentials within the Charley River. But the potential Woodchopper project located downstream on the Yukon River would inundate the lower 20 to 25 miles of the Charley River.
- The undisturbed plant and animal communities, which are representative of Interior Alaska, have substantial value for study to determine how best to use the resources of the interior sub-arctic areas of Alaska to man's long-term benefit and enjoyment.

## Recommendations

To preserve the free-flowing character of Charley 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 164 miles of free-flowing stream in the basin in Federal ownership together with an area not to exceed 200,000 acres to be added to the National Wild and Scenic Rivers System by the Congress.
- Administration of the river and its immediate environment be by the Federal agency having overall administrative responsibilities within the Charley River basin.
- The entire river and its immediate environment 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.
- The Federal administering agency work with Native land owners, should Derwent and Flat-Orthmer Creeks (both 13 miles in length) be selected by Natives and should the Natives so desire, to determine whether these two areas should be added to the above 164 miles.
- 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 Federal administering agency and that those be consistent with the findings and concepts presented in this report.

- Detailed plans retain the option for the active participation of Native groups should portions of the Charley River basin be selected by Natives.
- Detailed plans for development and management recognize potential mineral development in areas outside the river's immediate environment.



### III.

### REGIONAL SETTING

#### Landscape

The Charley River has a drainage area of 1,713 square miles, or approximately 1.1 million acres. Located in the east central part of Interior Alaska near the United States-Canada border, the Charley River is approximately 50 miles southeast of Circle (population 54)<sup>1/</sup> 50 miles northwest of Eagle (population 36)<sup>1/</sup> and 150 air miles east of the Fairbanks area (population 45,864)<sup>1/</sup> and 325 air miles northeast of the Anchorage area (population 124,542).<sup>1/</sup> (Figure 1)

The Charley River basin is bordered on the north by the Yukon River as it flows through the Tintina Valley region and to the south by the Yukon-Tanana upland region. The former is composed of low, rounded benches and ridges trending in a north easterly direction. The southside of the Tintina Valley region rises noticeably at its fault controlled contact with the ancient, highly dissected but rounded mountainous area of the Yukon-Tanana upland region. Elevations in the region are progressively higher from Circle on the edge of the Yukon Flats ( $\pm$  575 feet) on the west to the United States-Canada border where elevations are 6,000 feet. A series of even-topped, rounded mountains ( $\pm$  6000 feet high) generally follow the fault line separating the Tintina Valley from the Yukon Tanana Upland.

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<sup>1/</sup> 1970 Populations Census, U.S. Department of Commerce



The region is unglaciated except for a few of the highest valleys where small valley glaciers were once present.

The climate is Sub-Polar Continental. Being less than 125 miles south of the Arctic Circle, winters are long, dark, and extremely cold. Long pleasant days prevail in the summer.

Mean low temperature is in January with  $-17^{\circ}$  F. Extended periods of intense cold with temperatures dropping to  $-50$  and  $-60^{\circ}$  F. are common. Summer temperatures climb to  $+80^{\circ}$  F. each year and occasionally reach into the  $+90^{\circ}$  F. range. The mean temperature in July is  $+60^{\circ}$  F. Although summer daytime temperatures are almost always above  $70^{\circ}$  F., there is rapid cooling as the sun passes its daily zenith. Therefore diurnal temperature variations can be extreme with freezing temperatures during each month. In a typical year there are 53 days when temperatures reach or exceed  $+70^{\circ}$  F.; 255 days with  $32^{\circ}$  F. or less; and 125 days with temperatures at or below  $0^{\circ}$  F.

Annual precipitation is about 11 inches of which about 30 percent is snow. Average snowfall is about 45 inches. Snow can occur above 4,000 feet elevation during any month. Thunderstorms are common during June and July.

Permafrost is throughout most of the region. Rivers and lakes are usually frozen from late October to April, with breakup occurring in late April or May.

Vegetation is a composite of alpine tundra and evergreen and deciduous forest. White spruce in pure and mixed stands of

spruce, balsam poplar, and birch grow along major drainages where deep, moist soils are well drained and deeply thawed. Over permafrost with poorly drained soils extensive stands of black spruce are found. While on rolling, slightly better drained areas a mixture of black spruce, birch, aspen, and balsam poplar grow. Muskeg bogs are found in low lying areas on an intermittent basis. A distinctive riverine plant community is associated with the flood plains of the Yukon River.

### 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 Statewide Comprehensive Outdoor Recreation Plan (1970) estimates the total State population will be 331,000 by 1975 and 565,000 by 2000.

The Charley River basin in its entirety is located within the Upper Yukon Census Division (figure 2.) In 1970 there were 1,684 people living in this Census Division which was an increase of 4.0 percent over the 1960 population. Most resided in 12 places where there was a population of at least 25 people. The largest, Ft. Yukon City, has a population of 448. There was a total of 338 households. Natives comprised 64.8 percent of the total

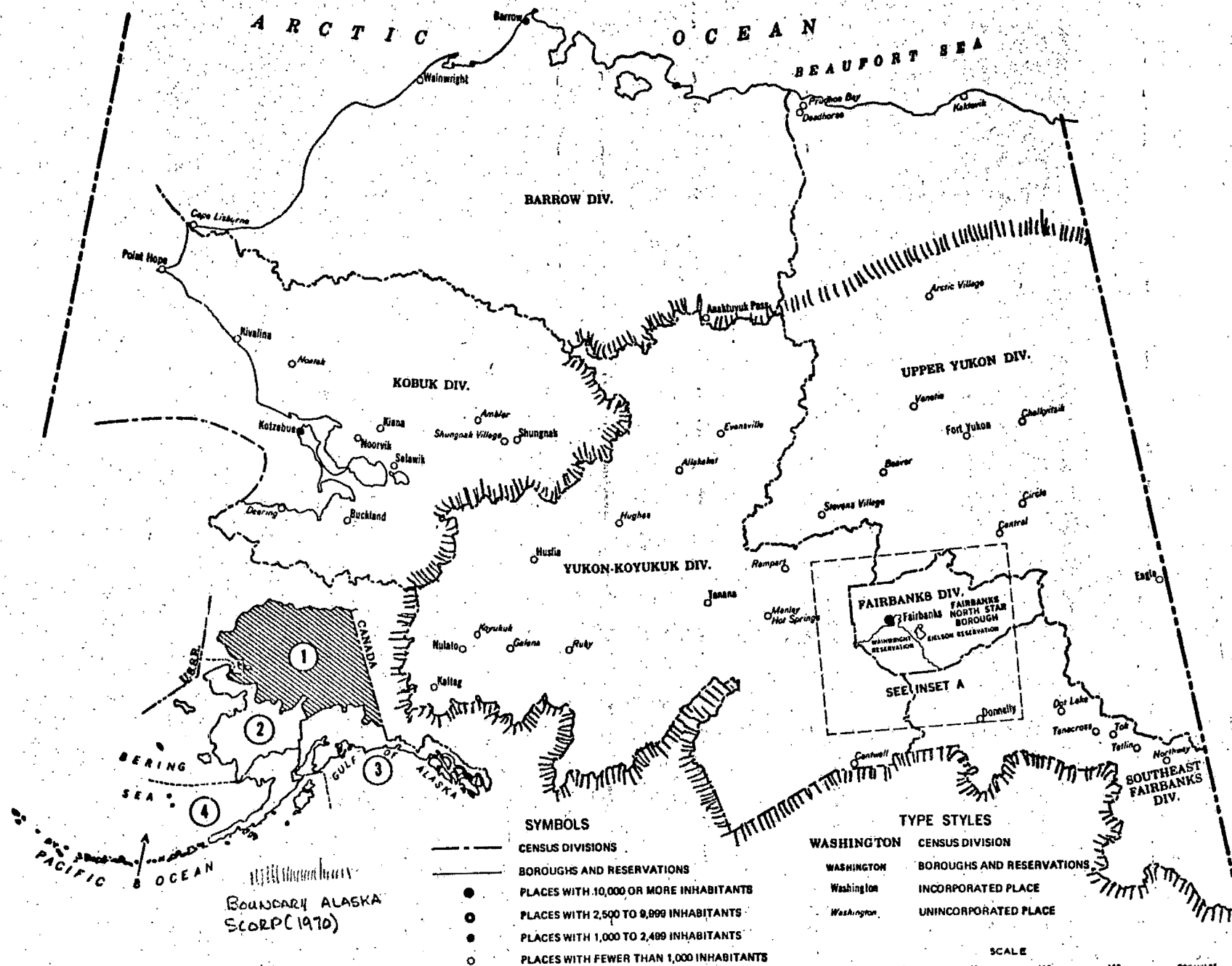


FIGURE 2. PLANNING REGIONS FOR POPULATION-ECONOMIC & RECREATION FACTORS, CHARLEY RIVER, ALASKA



population in the Census Division. Villages within the Census Division closest to the Charley River basin are Eagle City, Circle, and Fort Yukon City. Of these Eagle City lost 60.0 percent of its population between 1960 and 1970. Immediately to the south in the Southeast Fairbanks Census Division where along the Alaska Highway are located the villages of Dot Lake, Tanacross, Tok, Tetlin, and Northway. These also contain a high proportion of Natives who may use the Charley River area on a seasonal basis and therefore should be considered in the overall regional population characteristics. Of the last group, all except Tok lost population between 1960 and 1970 while there was an overall population loss of 20.5 percent for the seven villages closest to the Fortymile basin where there were comparable data for 1960 and 1970. Table 1 summarizes population data for the villages nearest the Charley River basin.

#### Economy

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

TABLE 1. 1960 and 1970 Populations of Villages in Close Proximity to the Charley River Basin, Alaska<sup>1/</sup>

	1970	1960	Percent charge
Upper Yukon Census Division	1,684	1,619	4.0
Circle	54	41	31.7
Eagle City	39	92	-60.0
Fort Yukon City <sup>2/</sup>	448	--	--
Southeast Fairbanks Census Division	4,179	--	--
Dot Lake	42	56	-25.0
Northway	40	196	-79.6
Tanacross	84	102	-17.6
Tetlin	114	122	- 6.6
Tok	214	129	65.9
Village Subtotal	587 <sup>3/</sup>	739 <sup>3/</sup>	-20.5 <sup>3/</sup>

<sup>1/</sup>Source. 1970 Census of Population - Number of Inhabitants, Alaska

<sup>2/</sup>No prior comparable data as was recorded as an unincorporated place in the 1960 Census.

<sup>3/</sup>Excludes Fort Yukon City, because there are no comparable data for 1960.

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 differences 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 works particular hardship upon rural Alaskan families where incomes are low and prices often 100 to 200 percent higher than in urban areas.

Within the Upper Yukon Census Division unemployment in 1970 was 7.0 percent. Median family income was \$6,500 with 23.8 percent earning less than the poverty level and 25.4 percent \$15,000 or more. Most wage employment is seasonal with greatest opportunities during

the short summers. Local residents are often employed on an emergency basis to fight forest fires. The income in that activity fluctuates in direct proportion to the number, size, and frequency of the fires.

For that portion of the region lying south of the Yukon River, it is probable the minerals (other than oil and gas) and tourism have the most significant economic growth potentials.

### 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 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. Trapping is the only significant activity in the region which now offers cash potential in this life style.

Natives residing in the region look mainly to the Yukon and the Tanana Rivers for their continuing dependable supply of food. The surrounding interior forested hill and mountain country offers a variety of terrestrial game animals and fur animals for subsistence. Among these the caribou, moose, bear, beaver, marten, mink, and muskrat are most important.<sup>1/</sup>



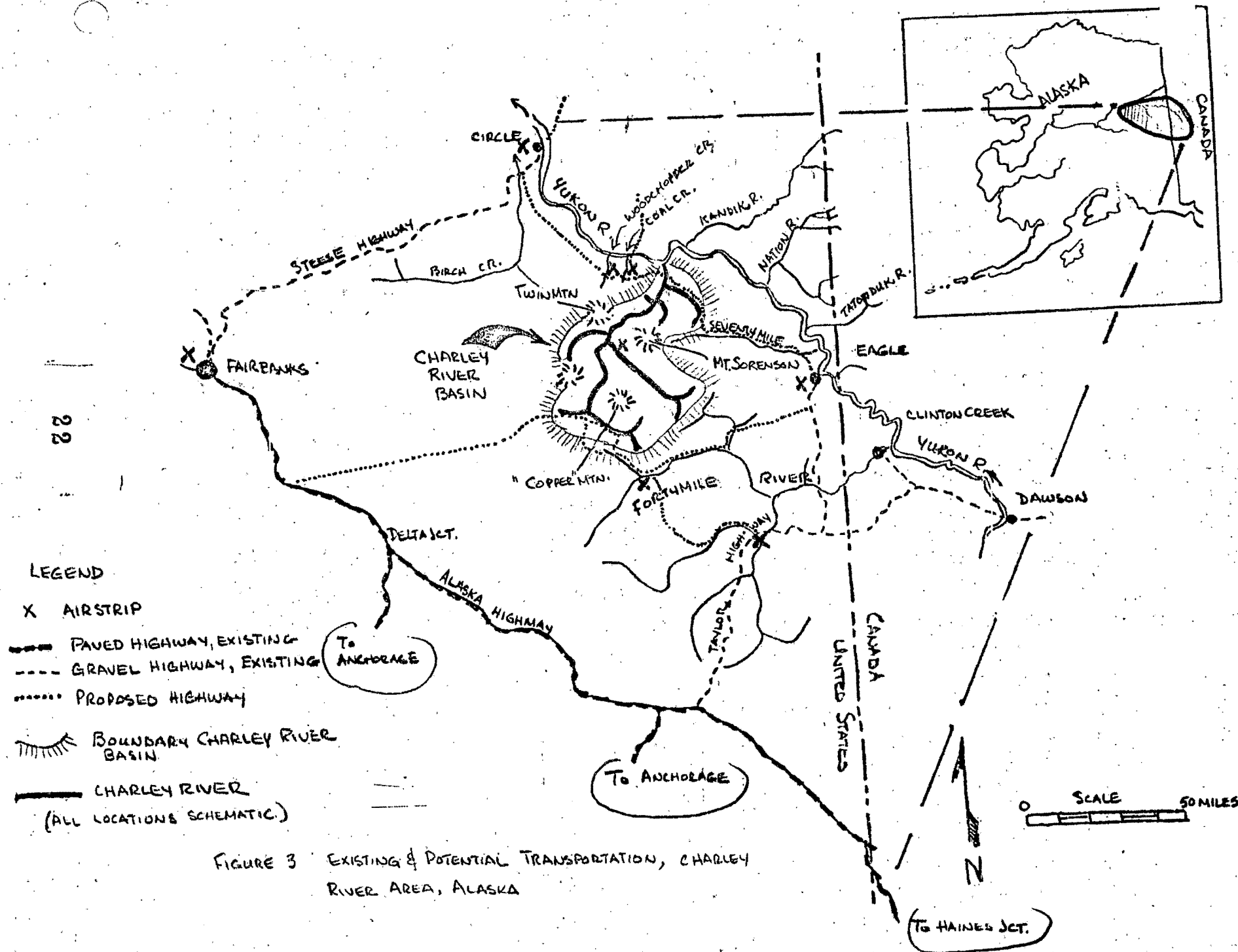


FIGURE 3 EXISTING & POTENTIAL TRANSPORTATION, CHARLEY RIVER AREA, ALASKA

## Transportation

The region surrounding the Charley River basin is accessible by good roads and by air. There are no rail facilities. Barge transportation does not exist on the Yukon River upstream from Fort Yukon.

The Alaska Highway (Alaska 2) traverses the entire southern part of the region and is the only highway link between Alaska and the lower 48 states. At Tetlin the 137 mile long Taylor Highway (Alaska 5) provides direct access to Eagle and also with Dawson, Yukon Territory, Canada. The 162 mile long Steese Highway (Alaska 6) connects Fairbanks and Circle. There is no direct road access to the Charley River basin--the closest existing road being the Taylor Highway some 50 miles to the east. By road the Charley River is at its closest point approximately 300 miles distance from Fairbanks and 400 miles from Anchorage.

The Alaska Department of Highways has long range plans which involve consideration of constructing a highway link between the terminous of the Taylor Highway at Eagle and the terminous of the Steese Highway at Circle via the south side of the Yukon River. Also under consideration is a supplemental highway connecting Eagle with the Alaska Highway near Harding Lake via the Salcha River. The former would provide surface access to the lower portion of the Charley River basin. The latter would provide highway access to the uppermost headwater areas of the Charley River basin. Figure 3 shows the existing and potential highway network in the region.

1/1968. Alaska Natives and the Land. Field Comm. for Development Planning in Alaska.

Daily air service is found at Anchorage, Fairbanks, and Fort Yukon. Periodic scheduled air service is available to all villages and several bush strips. Chartered air service is available throughout.

Although there is no barge transportation, the Yukon River on the north is a historic waterway for trade and commerce. Small riverboats still ply its waters for recreational and subsistence purposes.

### Recreation

The large Interior Region used by the State in its Statewide Comprehensive Outdoor Recreation Plan (see Figure 2, page 1b) includes all of the Charley River basin, most of the Upper Yukon Census Division as well as Alaska's second largest population area and the northern part of Mount McKinley National Park. Based upon data collected by the State for that area it becomes apparent that even with the outstanding amount of raw resource available for outdoor recreation, most is unavailable because of distance, access, or lack of facilities. Those resources which are accessible and developed often receive use in excess of their intended capacity.

## 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 annual 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 1985. Of these, trail related outdoor recreation activities are the most popular. By 1985 trail-related activities--a form of outdoor

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.

Table 3, Comparison of available Outdoor Recreation Facilities and Projected Peak Day or Average Day Demand for Selected Activities in the Interior Region, Alaska.

Activity	Facilities <sup>1/</sup>	Participants <sup>2/</sup>		
		1975	1980	2000
Hiking	54 mi.	3,500	3,800	6,200
Canoeing	137 mi. <sup>3/</sup>	2,200	2,400	3,200
Cross-Country Skiing	None	100	200	300
Snowmobiling	50 mi.	1,500	1,600	2,400
Motorboating	29 launching spaces	3,950	4,800	8,800
Picnicking	157 units	14,700	17,200	29,200
Developed Camping	1,202 units	7,200	9,100	23,200
Undeveloped Camping	20 units	2,800	3,500	6,800
Sightseeing	209 <sup>4/</sup>	12,400	15,400	37,600
Driving for Pleasure	--	15,100	17,800	32,000

<sup>1/</sup> Statewide Comprehensive Outdoor Recreation Plan, 1970, Vol II, Exhibit IV-15.

<sup>2/</sup> Ibid. Vol. IV, Appendix J.

<sup>3/</sup> 125 miles are inventoried as in Federal ownership

<sup>4/</sup> Parking spaces in scenic turnouts.

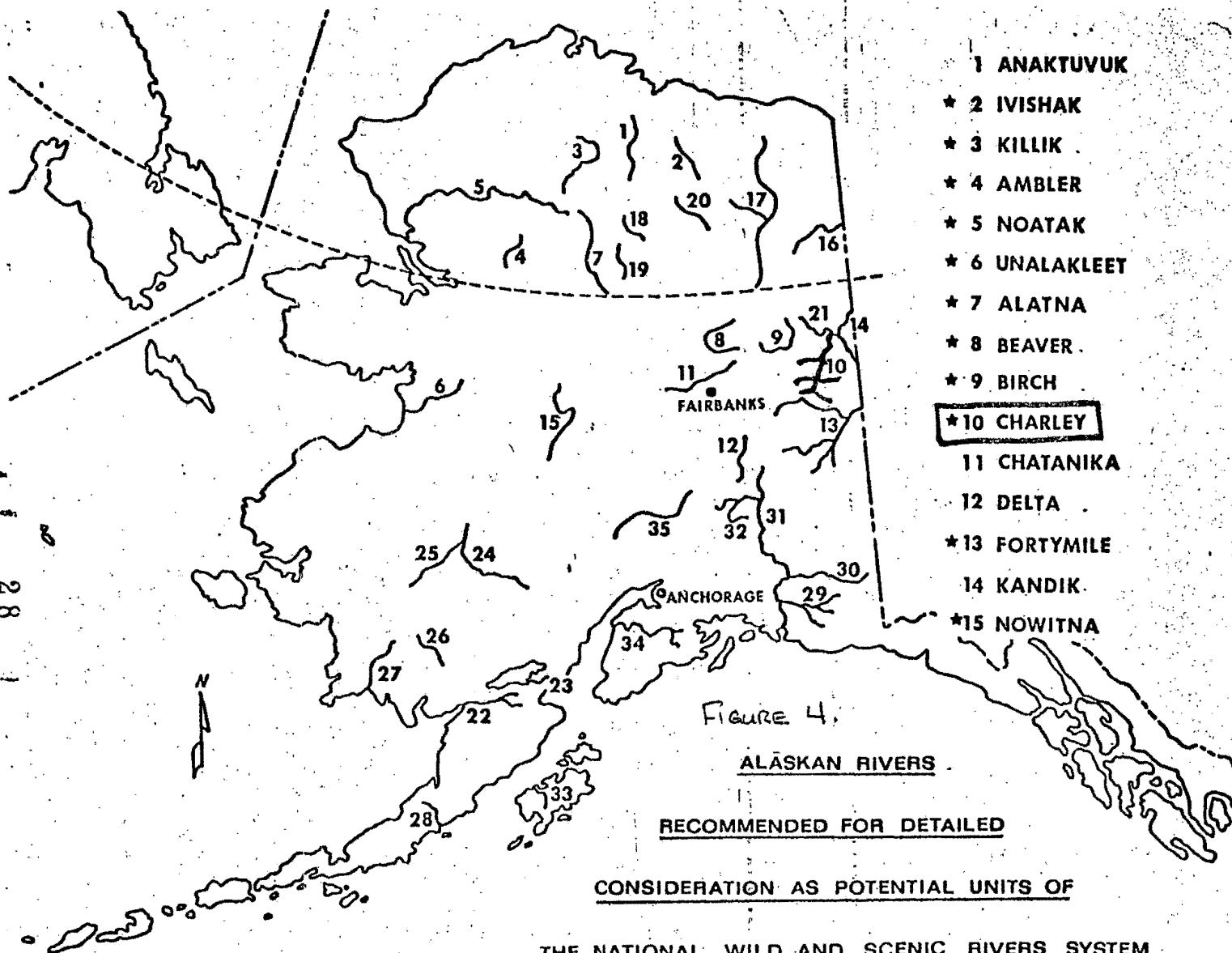


recreation in which 85 percent of residents and non-residents participate--will increase by 249 percent. The State further anticipates that trail-related activities will maintain its top ranking as the most popular activity.

When existing facilities are compared with projected annual demand for outdoor recreation in the Interior Region it is found that there are major deficiencies (table 3).

It should be noted that the data presented in Tables 2 and 3 were based upon the primary assumption that approximate land status prior to 1970 would continue. These projections would be most conservative in the event all or substantial portions of the public lands withdrawn under Section 17(d)(2) ANCSA, are included in one of the four national conservation systems by the Congress. Also it is noted in 1972 there were 53,252 visits to state park units in the Interior Region. Projected visits for 1973 contemplate a 300 percent increase--to 179,000 visits. Thus, even under present conditions the 1970 data appear conservative.

The Charley River has been identified by the Bureau of Outdoor Recreation as one of 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, 15 (including the Charley River) are located within the 220,000 square mile Alaskan portion of the Yukon River drainage. In the close proximity of



- |                |  |
|----------------|--|
| 1 ANAKTUVUK    | ★ 16 PORCUPINE                           |
| ★ 2 IVISHAK    | ★ 17 SHEENJEK-KONESS                     |
| ★ 3 KILLIK     | ★ 18 TINAYGUK                            |
| ★ 4 AMBLER     | 19 WILD                                  |
| ★ 5 NOATAK     | ★ 20 WIND                                |
| ★ 6 UNALAKLEET | ★ 21 YUKON                               |
| ★ 7 ALATNA     | ★ 22 ALAGNAK                             |
| ★ 8 BEAVER     | ★ 23 COPPER (ILIAMNA)                    |
| ★ 9 BIRCH      | 24 HOHOLITNA                             |
| ★ 10 CHARLEY   | 25 HOLITNA                               |
| 11 CHATANIKA   | ★ 26 NUYAKUK                             |
| 12 DELTA       | ★ 27 TOGIAK                              |
| ★ 13 FORTYMILE | ★ 28 ANIAKCHAK                           |
| 14 KANDIK      | ★ 29 BREMNER                             |
| ★ 15 NOWITNA   | ★ 30 CHITINA                             |
|                | ★ 31 COPPER                              |
|                | ★ 32 GULKANA                             |
|                | 33 KARLUK                                |
|                | 34 KENAI-RUSSIAN,<br>SWANSON R.-SWAN LK. |
|                | 35 SUSITNA                               |

the Charley River are the following select river areas:

Beaver Creek;

Birch Creek;

Chatanika River;

Fortymile River;

Kandik River;

Yukon River between the United States-Canadian border and Circle

Each of the six rivers in the close proximity of the Charley River is distinctive. These differences are summarized in Appendix A.

Although important to a statewide system of free-flowing river areas including representative samples of the various types of rivers in Alaska, specific action has not been recommended for either the Chatanika or Kandik Rivers. The former lies within lands owned by the State, whereas the latter is located largely within an area withdrawn for potential Native selection under the provisions of ANCSA. Separate reports evaluating the values of the remaining four river areas in the close proximity of the Charley River have been prepared.

The Alaska Statewide Comprehensive Outdoor Recreation Plan makes reference to the availability of 399 miles of "formal" canoe trail (137 miles in the Interior Region see table 3). The term "formal" is misleading in that there are no specific State or local plans or programs to protect or manage these resources, and the vast majority of the identified "formal" canoe trails are located on Federal land.

Although the Charley River is not specifically identified in the Alaska Statewide Comprehensive Outdoor Recreation Plan, the Yukon-Fortymile areas are noted as having significant potential for future recreation as one of three which "...could be developed...to serve a wide range of camping, hunting, fishing, boating, and trail related activities demanded by the residents of the State's second largest urban area." (1970, Vol. II, p.IV-65). The Charley River is closely associated with the noted area and would provide a distinctive range of high quality outdoor recreation opportunities that are very complementary to existing and potential values of the Yukon-Fortymile areas.

#### IV.

#### DESCRIPTION AND ANALYSIS

##### River Setting

The Charley River is a youthful, clear, intermediate-sized free-flowing Alaskan river dashing northward some 88 river miles from its source to the silt-laden, placid Yukon River. Named and unnamed tributaries combine with the Charley River to form a fan-shaped basin of 1,713 square miles--1.1 million acres. There are approximately 350 miles of stream in the basin. (Table 5)

The upper (southern) two-thirds of the Charley River basin is located in a great granitic batholith comprising the northern edge of the Yukon-Tanana Upland Region. Here the underlying granitic structure shapes the drainage pattern and the topography. Four rounded mountains separate major tributaries and radiate smaller streams--unnamed mountain which is headwaters of Crescent Creek (elevation 6,434 feet); "Copper" Mountain to the north of Copper Creek (elevation 6,367 feet); Mount Sorensen east side of Charley River near the Tintina Fault (elevation 5,611 feet); and Twin Mountain near the Tintina Fault on the west side of the Charley River (elevation 5,784 feet).

The lower (northern) third of the Charley River flows in an open valley at right angles to the Yukon River and the underlying sedimentary rocks and river sorted gravel terraces. Topographic relief is slight with elevations varying usually less than 100 feet above the river.

Based upon topography and stream characteristics the Charley River can be separated into three distinctive parts: open upland valley; entrenched, and; open mature flood plain (Figure 5).

**Table 4 Length and Average Gradient of the Charley River and Its Principal Tributaries, Alaska**

Name	Length <u>1/</u>	OUV <u>2/</u>	E <u>3/</u>	OMFP <u>4/</u>	Ave.of Gradient <u>5/</u>
Charley River *	88	X	X	X	31 ft/mile
Crescent Creek *	28	X	X		67 " "
Copper Creek *	27	X	X		41 " "
Fisher Creek	22		X		93 " "
Hanna Creek	17		X		64 " "
Beverly Creek	16		X		NA
Derwent Creek	13		X		80 " "
Flat Creek <u>6/</u>	13	X	X		115 " "
Hosford Creek *	12		X		108 " "
Cutlas Creek	9		X		66 " "
Godge Creek *	9 <u>7/</u>		X		144 " "
Highland Creek	9		X		127 " "
Drayham Creek	6		X		116 " "
Bonanza Creek *	5			X	10 " "
Moraine Creek	4		X		225 " "
Bear Creek	4	X			NA

Subtotal-----282 river miles

Other named and unnamed tributaries (est.)---68 river miles

Total Miles-----350 river miles

1/In river miles - Source Alaska Place Names, USGS

2/Open Upland Valley

3/Entrenched

4/Open Mature Flood Plain

5/Approximate excluding steep headwater areas

6/Includes Orthmer Creek (4 miles)

7/Estimated

\*All or major portion withdrawn under Sec. 17(d)(2) ANCSA

### Open Upland Valley

These comprise the upper most drainage areas of the Charley River and are characterized by small, shallow, though occasionally braided streams. Valley slopes are gentle and well back from stream bank. Alpine tundra predominates. However, river banks provide a micro-climate favorable to the growth of attractive, but narrow, stringers of spruce forest. Included in this category are the headwaters of the Charley River to a point approximately upstream from Copper Creek, most of Copper Creek and the upper two-thirds of Crescent Creek.

### Entrenched

Here the river or stream is confined or flanked by steep valley walls or bluffs. Streams are larger and deeper with widths to 25 yards and depths to 10 feet. Although smaller in size, tributary streams are in narrow valleys. Occasional gravel bars and bedrock outcrops cause braided sections. Mixed spruce-aspen forests predominate with alternating bluffs having only scattered tree growth. Topographic relief is great with views generally confined to the immediate river area and only for short segments. Included in this category are the Charley River and its tributaries from a point about 10 miles upstream of Copper Creek to the vicinity of Bear Creek, the lower portions of Copper and Crescent Creek, Godge Creek and the headwater areas of Flat, Fisher and Derwent Creeks.

### Open Mature Flood Plain

This embraces the large meandered portions of the Charley River from the vicinity of Bear Creek to its confluence.



with the Yukon River, the lower portions of Flat, Fisher and Derwent Creeks and Cutlas and Bonanza Creeks. Topographic relief is slight with spruce forest on river bank shielding lateral views from the river. Occasionally the bluffs on the north side of the Yukon River are visible on the longer meanders where there is a sufficient length of open water to reduce the screening effect of the adjacent forest. Extensive areas of muskeg are present and as the Yukon River is approached dense thickets of willow and alder replace the black spruce.

#### Stream Flow

There are no stream gauging stations in the Charley River basin. However, seasonal flows are expected to be similar to the adjacent Fortymile River which is also a north flowing, non-glacial tributary to the Yukon River.

Maximum stream flow occurs in late May and early June as a result of spring breakup and snow melt. Rain induced high water can be expected twice each month in June and July and once in August. Storm caused high waters rise rapidly and return to normal seasonal levels in several days to a week. Low flows start in late August and September and continue dropping throughout the winter when surface water become locked up as ice and snow.

Because of its youthful nature and permafrost, rain induced rises in water levels can be sudden. Those fluctuations must be watched carefully as too much water is dangerous and a rise of several feet can occur in a short time period.

Current is very swift with the river bed upstream from

Bear Creek generally composed of large rounder boulders and cobbles in the 12-14 inch class.

The Charley cascades from its headwaters with an elevation of some 4,000 feet to an elevation of 698 feet at the Yukon. Excluding small streams that trickle down the steeper valley slopes, average gradient is about 31 feet per mile. Although the river has an open meandered and an occasional braided section in the open upland valley and entrenched sections, these appear to be related to the geologic structure of the underlying rocks rather than a symptom of old age. Stream gradient is relatively even with no falls or cascades. The upper two sections have higher gradients than the remainder. Once past Bear Creek, the river becomes meandering and the current slows.

Limited observations indicate there are sufficient water flows to permit canoeing or use of other small hand propelled watercraft for recreational purposes during the late summer for the lower portions of Copper and Crescent Creek and downstream from the confluence of the two upper forks of the Charley River in T. 3 S., R. 20 E.

#### Water Quality

Data on water quality is lacking. It is assumed that overall water quality is excellent.

The Charley River and its upper tributaries are exceptionally clear and is one of the clearest Alaskan mountain streams ever encountered. Individual rocks and leaves may be easily seen to a depth of 15 feet. The clarity of the water is such that from the air,

gravel bars which appear to be covered with only a few inches of water often proved to have water depth in excess of four feet deep. Downstream from the confluence of Bonanza Creek water quality is affected by the adjacent muskeg areas. Here, waters take on a brownish cast from flowing through soils with high organic content.

There are no permanent habitations and people seldom visit the area so there appears to be no human posed health hazards at this time.

Water temperature is cool--generally too cool for swimming except for a very short period in late July and early August. Low water temperatures, however, are reported to be conducive to the prolongation of the life of pathogenic bacteria. Accordingly, indiscriminate disposal of wastes as future human use increases in the Charley River basin can cause serious water quality and health problems.

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

#### Land Use

There are no known intensive uses of the land or water of the Charley River, its principal tributaries and their immediate environments.

There are no permanent homes, roads or established industrial or agriculture activities. There is no commercial timber harvest.

Early geological maps prepared by Prindle and others prior to 1910 and reports by Mertie and others as late as 1937 <sup>1/</sup> show no trails, telegraph lines, Native villages, mining operations or cabins in the Charley River basin.

## Residences

There are no permanent residences and scant evidence of past occupation within the entire Charley River basin. The 1956 editions 2/ of the USGS 1:63,360 topographic maps for this area shows one cabin located near the mouth of the Charley River and ruins of two in the Copper and one on Hosford Creeks. Field examination led to discovery of several additional cabin ruins located along the river downstream from Copper. Also a habitable cabin was found near the mouth of Bonanza Creek. Whether these two habitable cabins and the ruins reflect past mining explorations, trapping or summer camps is not known. It is believed, however, that ruins are associated with trapping.

Although the lower Charley River in the vicinity of the Yukon River was undoubtedly crossed by overland winter trails connecting Circle, Eagle, Dawson and the numerous small mining settlements along the Yukon River, evidence of any major route is absent.

## Forestry

Commercial forest land--that capable of annually producing 20 cubic feet of useable wood per acre--is very limited if not completely lacking. Trappers, prospectors, hunters and recreationists have used small amounts of white spruce for the construction of cabins, cooking and heating, and perhaps fuel for steam stern wheelers plying the Yukon. There are no sawmills within the basin and no trees are cut for commercial purposes. This general pattern is expected to continue into the foreseeable future.

Lands adjacent to the Charley River and its principal

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2/Based upon aerial photography taken in 1951, 1953, 1954 and 1955

tributaries have varied topography and soil. Permafrost is found at varying depths throughout and together with wild fire to a great extent determines the vegetative type and growth pattern at any particular location.

Black spruce, white spruce, aspen, birch, alder and willow are the major tree species found throughout the river area. South facing slopes tend to be dryer and are characterized by mixed stands of aspen, birch, white spruce and sage-brush associations. North facing slopes are characterized by black spruce, willow and alder associations (Figure 6).

### Mining

The Charley River drainage is located within a broad mineralized belt and the geology of the upper two-thirds of the basin is favorable for metalliferous minerals.

Recent studies conducted by geochemical analysis of rock and water samples in the upper Charley River basin and adjacent areas to the east and south show presence of copper, gold, lead, molybdenum, nickel, silver, tin, zinc, and other metals in the Charley River basin. <sup>1/</sup>

The overall geology is considered favorable for large copper porphyry deposits.

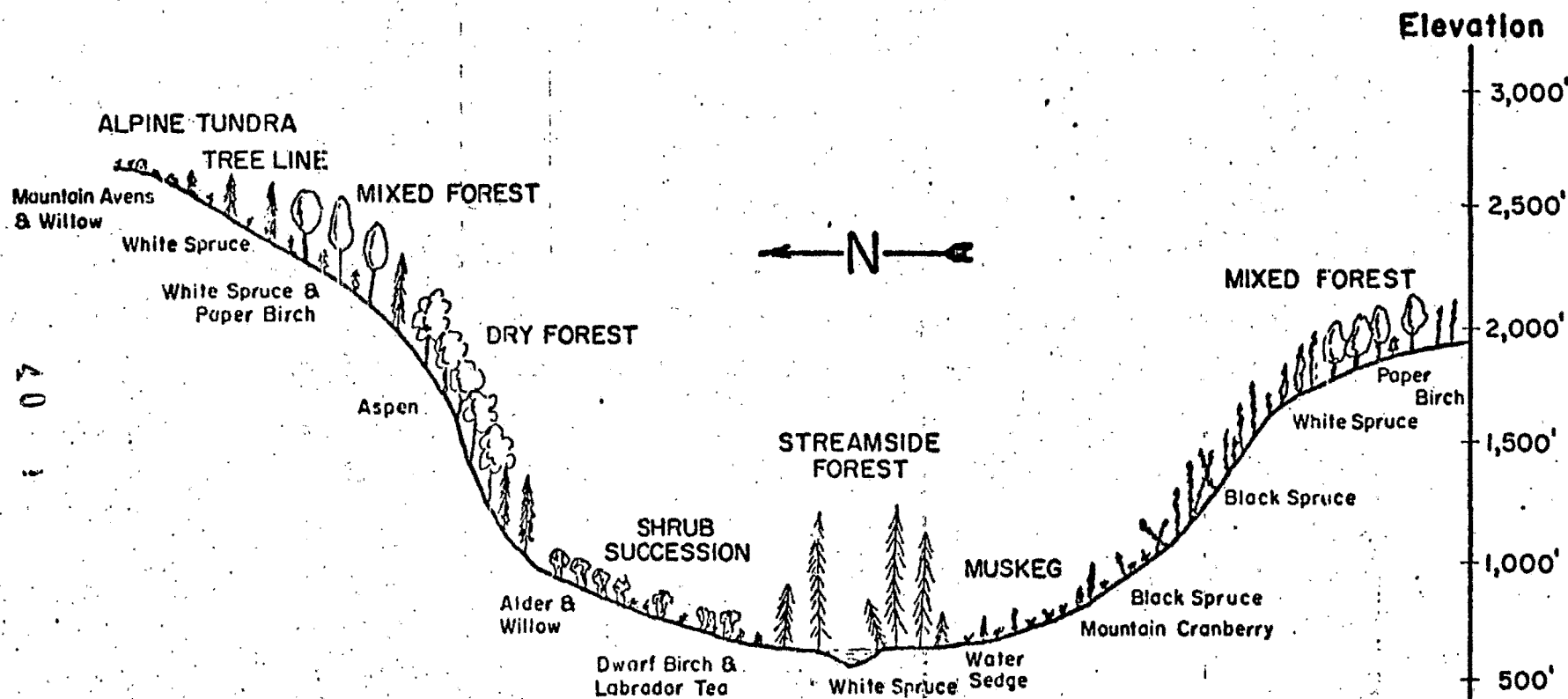
Information on the mineral character of the river bed and its immediate environment is scarce. Overall bedrock exposures are poor, but are best in the entrenched stream valleys.

In a broad way, historical mineral production data--especially gold--is indicative of potential economic mineral values. A careful review of available information by the Bureau of Mines on present and

<sup>1/</sup>1972. Miscellaneous Field Studies, USGS, MF-356. Map Showing Distributing on Anomalous Amounts of Selected Elements in Stream-Sediment and Rock Samples, Eagle Quadrangle, Alaska

# PRELIMINARY

FIG. 6 DIAGRAM OF VEGETATION TYPES ALONG A TOPOGRAPHIC GRADIENT IN THE CHARLEY RIVER, ALASKA



PRELIMINARY

past mining activities shows there are no active or patented mining claims in the Charley River basin. A group of 13 lode claims (probably for copper and tungsten) were staked in 1970 along the north bank of Copper Creek about seven miles upstream from the Charley River. In 1968, six placer gold claims were located in the same general vicinity. Mertie 2/ in 1938 summarized the gold status of the Charley River and its immediate environment when he noted:

"Some gold was found on Irish Gulch and Dryham Creek, tributaries of the Charley River, but in general the Charley River within the Tertiary belt, has not produced any considerable amount of placer gold."

The State Division of Geological Survey also reports that Flat Creek, approximately ten miles from its confluence with the Charley River had gold prospects reported in 1914.

A small portion of the lower (northern) Charley River overlaps the Kandik Basin Province. That area may be prospectively valuable for oil and gas. The extent of the Kandik Basin Province is very limited insofar as the Charley River is concerned and its status or prospective mineral value is unknown.

When considering the early and intensive mineral development of adjacent areas it appears unlikely that the river and its immediate environment contain substantial mineral prospects of economic importance. For example, immediately to the west are Coal and Woodchopper Creeks. Coal Creek, only 12 miles to the west and a subparallel small stream flowing northward to the Yukon River drains the same range of mountains as the Charley River basin. Gold placers were discovered in 1908 and were worked as late as 1968. Woodchopper Creek, 20 miles west from the Charley River and also subparallel has an equally long



standing gold mining history and 230 acres of placer gold deposits were patented in 1955 under the mining laws. To the southwest are Fourth-of-July Creek and the Seventymile and Fortymile Rivers. Only 25 miles east from the Charley River and also subparallel was a major mining enterprise with a large gold placer being discovered in 1911 which assayed at \$18.89 per ton. Silver, platinum and mercury are present in the placer and active claims are still being worked. Even of greater mineral value were the adjacent Seventymile and Fortymile River basins where there is a long and continuous history of placer gold production and recent discoveries of potentially valuable asbestos deposits.

The combined production of placer gold and associated placer silver recovered from the three closest tributary streams with geology similar to the Charley--Coal, Woodchopper and Fourth of July Creeks was 221,464 ounces of gold and 20,406 ounces of silver between 1908 and 1964 (Table 5).

Table 5. Placer Gold and Silver Production 1908 - 1964 at Areas near Charley River

Area	Period	oz. Gold	oz. Silver
Coal Creek	1908 - 1957	94,495	9,668
Woodchopper Creek	1913 - 1964	117,654	9,783
Fourth of July Creek	1917 - 1952	<u>9,315</u>	<u>955</u>
Total		221,464	20,406

## Water Resource Developments

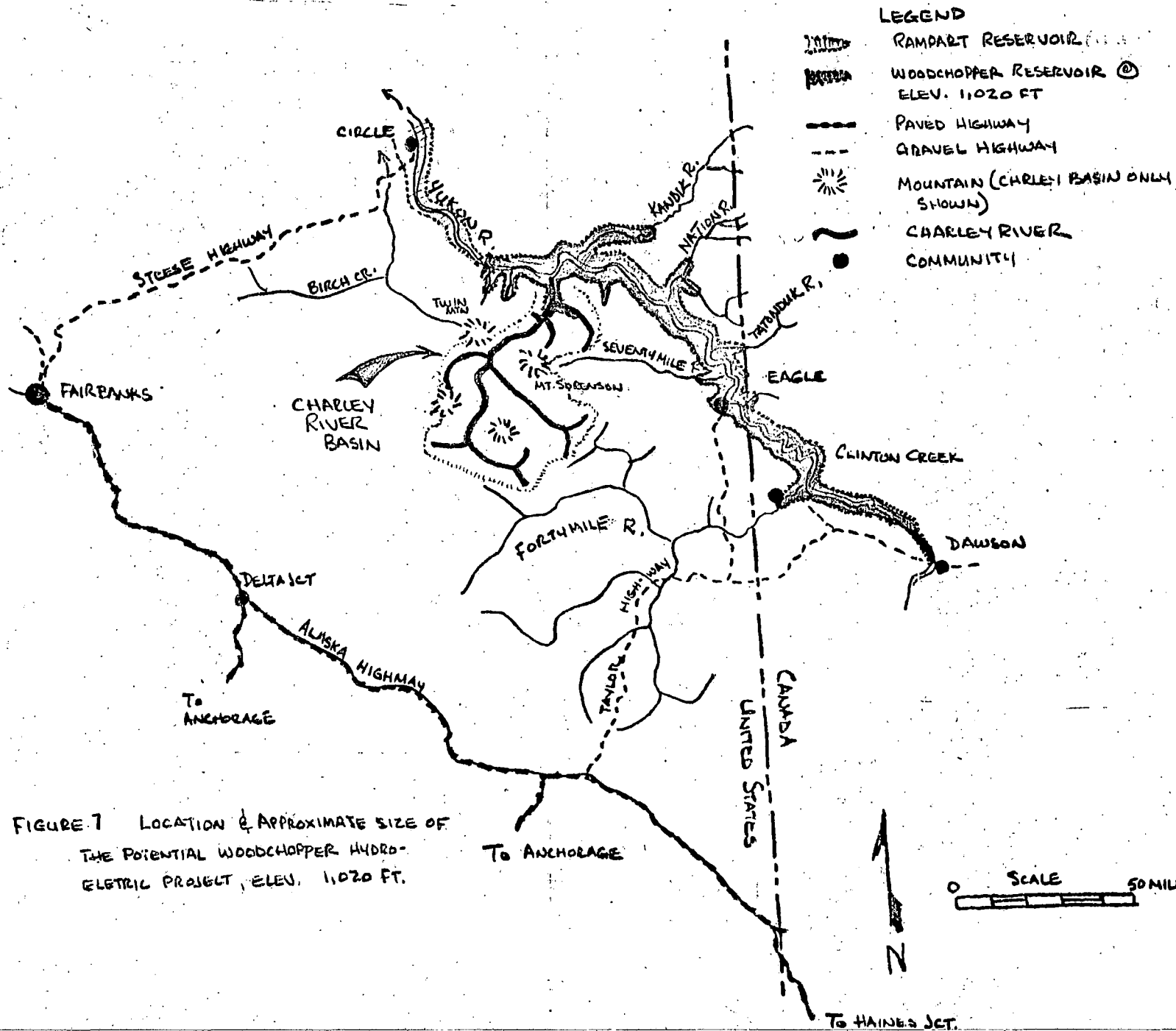
There are no existing or authorized water resource development projects in the Charley River basin and there has been no dredging, rip-rapping or straightening of the stream bed or banks.

A potential hydroelectric project is however, located on the Yukon River downstream from the mouth of the Charley River which if constructed would flood the lower 20-25 miles of the Charley River at a pool elevation of 1,020 feet (Figure 7).

Studies of the Woodchopper site have been largely limited to consideration as a single-purpose hydroelectric development operating in conjunction with the Rampart Project further downstream in the Yukon River. The Alaska Power Administration indicates that evaluation of the Woodchopper Project as a separate multiple-purpose development would greatly emphasize the importance of the site.

The Woodchopper reservoir also would inundate the Yukon River to the vicinity of Dawson, Yukon Territory, Canada--a distance of almost 200 miles. The proposed reservoir would be 360 feet deep at the dam, store 52 million acre-feet of water at a pool elevation of 1,020 feet, have a shoreline of 800 miles and a surface area of about 563 square miles. Estimated firm power potential is 2,160,000 kilowatts at 75 percent annual load factor with firm energy production of 14.2 billion kilowatt hours.

The Alaska Power Administration indicates that Woodchopper is one of five most important hydroelectric potentials in Alaska on the basis of size and cost (excluding fish, wildlife or environmental considerations). The project is considered to have statewide, national



and international significance. A significant portion of the proposed project is in Canada. Accordingly, international negotiations would be required to develop the maximum potential of the Woodchopper project. The extent to which such a program is compatible with Canadian plans for the Yukon River is unknown.

Preliminary construction costs of the project, exclusive of environmental aspects, is \$1.7 billion <sup>1/</sup>, while revenues from the sale of electrical power are estimated to be about \$100 to \$150 million per year at an average cost of 7 to 10 mills per kilowatt hour.

There are substantial social and environmental aspects associated with the development of the potential Woodchopper project which would weigh heavily on a go - no go decision. The reservoir would flood the present community of Eagle causing a relocation of Native and non-Native residences and drastically alter the life style of these people as well as destroy significant portions of the Charley, Kandik, and the Yukon River--all of which have high potential for inclusion in the National Wild and Scenic Rivers System. Also destroyed would be sites associated with the settlement and development of Alaska and Canada having national and international historic significance.

Environmental considerations include the following: <sup>1/</sup>

1. It is probable that a substantial portion of the anadromous fish runs that pass the Rampart site also pass the Woodchopper site.
2. The reservoir area of the Woodchopper project also includes excellent wintering habitat for a high density moose population.

<sup>1/</sup>Corts are on an October 1965 base price. All data related to the project are preliminary approximations for inventory purposes.

3. Significant portions of the Steese-Fortymile caribou herd cross the potential reservoir area in their migrations to and from Canada.
4. There would be moderate to significant impacts to waterfowl, furbearing and game animals other than moose and caribou. It is also probable that significant and critical nesting habitat in the reservoir area for the rare peregrine falcon would be adversely affected.

#### Land Ownership

There are no lands in private ownership in the immediate environments of the Charley River or its tributaries.

A single application for 100 acres surrounding the cabin near the mouth of the Charley River has been filed by a Native under the 1906 Native Allotment Act. Final adjudication of this application has not been made by the Bureau of Land Management.

The remainder of the immediate environment including the 13 lode and 6 place mining claims located in 1968 and 1970 (see Land Use: Mining, page 39) and the cabin at Bonanza Creek and infrequent cabin ruins are in Federal ownership under the administration of the Bureau of Land Management.

In March 1972, the entire Charley River basin was initially withdrawn by the Secretary of the Interior for potential addition to one of the four national conservations systems listed in section 17(d)(2) of the Alaska Native Claims Settlement Act.

On September 16, 1972, the Secretary of the Interior made final revisions of the initial withdrawals. At that time the major portion

of the Charley River basin south of T. 5 N., R. 24 E., Fairbanks Meridian, Alaska, was redesignated as "public interest" lands to remain under the Bureau of Land Management as provided for in section 17(d)(1) ANCSA. However, based upon the recommendations of the Bureau of Outdoor Recreation and other Federal agencies, lands within one mile of the Charley River, Copper and Godge Creeks and portions of Bonanza, Crescent and Hosford Creeks were retained in the withdrawal under section 17(d)(2) as were all lands north of T. 4 N., R. 24 E., Fairbanks Meridian, Alaska (Appendix B).

The 17(d)(2) two mile wide corridor withdrawal retained on September 16, 1972, encompasses approximately 160,000 acres and 150 miles of free-flowing stream.

On October 11, 1972, Mr. John C. Sackett, President, Tanana Chief's Conference (which incorporated under the requirements of ANCSA as DOYON, Ltd.) requested the Secretary of the Interior to make five townships in the Charley River basin available for Native selection under the provisions of Section 11(a)(3) ANCSA. That request, subject to the retention of the September 16, 1972 withdrawals along the Fortymile River and its tributaries under Section 17(d)(2) ANCSA, was approved and published in the Federal Register on December 14, 1972 (Appendix C).

Figure 8 summarizes the approximate land status of the river corridor. A substantial portion of the river bed may be in State ownership.

#### Water Rights, Navigability and Riverbed Ownership

There are no adjudicated water rights in the Charley River basin.

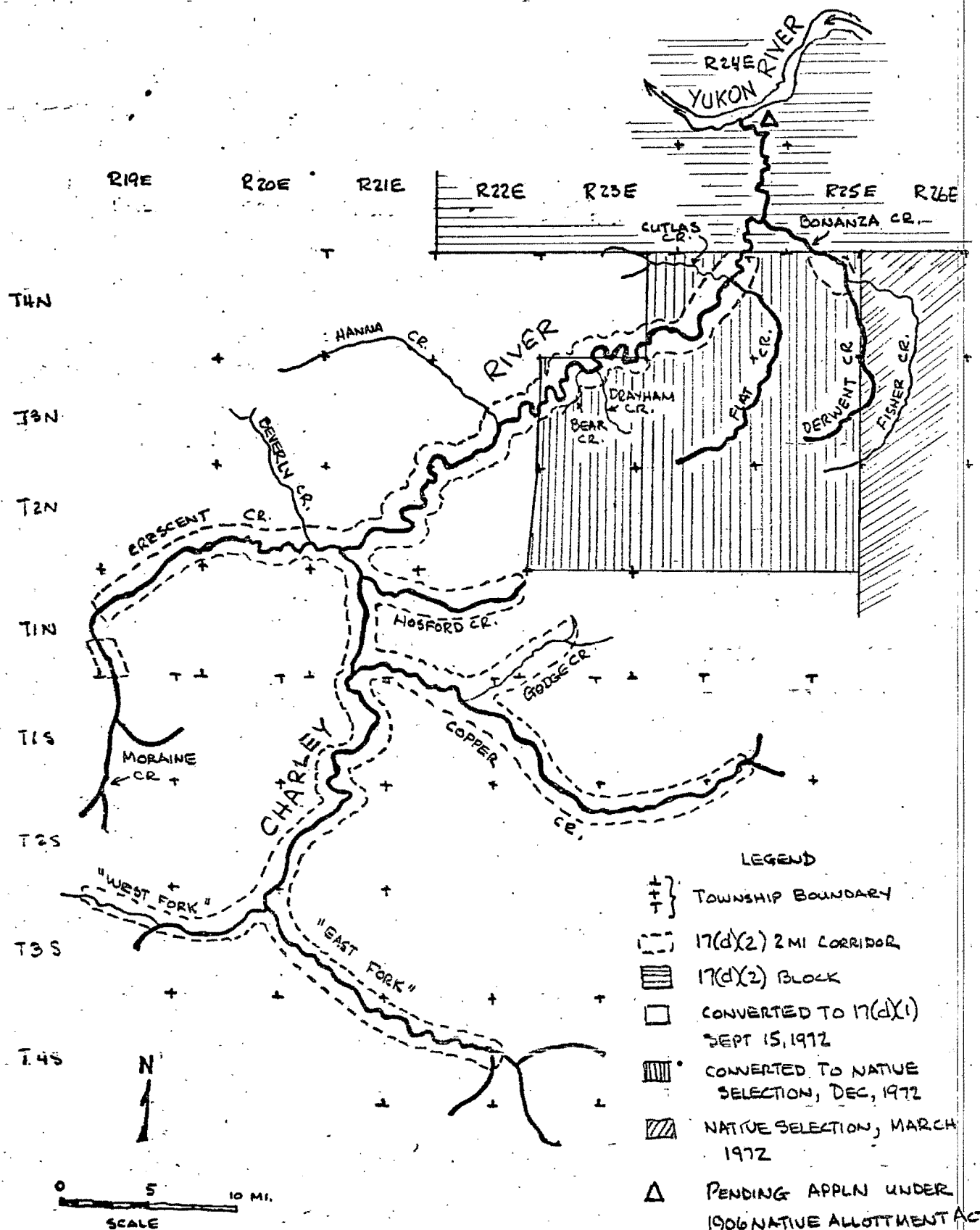


FIGURE 8 APPROXIMATE LAND OWNERSHIP,  
CHARLEY RIVER, ALASKA



The river is not considered navigable under criteria established by the U.S. Army Corps of Engineers.

Under the Alaska Statehood Act, the State of Alaska owns the stream beds of all "navigable" waters of the State. Final determination of stream bed ownership has not been made. However, under preliminary criteria developed by the State to determine "navigability" it would appear that the stream bed of the entire Charley River together with the lower portions of Bonanza, Copper and Crescent Creek may be in State ownership. This is suggested by the fact that the State has made a preliminary determination that the adjacent, but considerably smaller Seventymile River is "navigable" almost in its entirety.

A careful review of information on the Charley River indicates that it has never been used for movement of commerce and because of its swift current and difficult access to the headwater areas, it is unlikely that there has been any significant movement of goods or even furs over its waters.

Prior to the field investigations by the Bureau of Outdoor Task Force in September, 1972, there was only one record of anyone attempting to canoe the Charley. A trapper is reported to have brought, by dog sled, an aluminum canoe into the Charley River basin in the winter of 1938-39. His attempt to go out in the spring with his furs was thwarted when the extremely cold winter temperatures of -60° caused the aluminum to become brittle and literally crumble. The remains of a canoe believed to be this one was observed near a cabin ruin during the 1972 field work. 1/

1/A double-hulled rivited aluminum canoe, Model No. 4, C. W. Stiver, U.S.A. Saginaw, Michigan, Pat. No. 2083410.

## Access

Access throughout the Charley River basin is difficult.

### Existing

There are no existing surface transportation routes to or through the Charley River basin. Surface transportation within the Charley River basin is almost nonexistent with the exception of game trails and the river's surface.

With considerable effort, abandon and a favorable water level (which is rare) it is possible to proceed upstream from the Yukon River to the vicinity of Copper Creek in a river boat equipped with a jet-pump attachment on a  $\pm$  40 h.p. outboard motor. Usually water level and prudence limits motorized boat travel to the general vicinity of Bear Creek where large, numerous boulders and rapids clog the river channel.

A recently constructed primitive, unauthorized bush airstrip provides marginal access for small fixed-wing aircraft to the general vicinity of the mouth of Copper Creek. Gravel bars are not suitable for safe landings and the river is generally too shallow and tortuous for landing float planes and there are no lakes large enough to safely accommodate float planes. Helicopter landing sites are abundant.

### Potential

Future expansion of the surface water and air transportation networks to the Charley River basin appears likely.

The Alaska Department of Highways is considering two long range highway programs which would provide auto access to the lower and headwater areas of the Charley River basin (see Figure 3, page 22).

The first involves potential construction of a highway between Eagle and Circle where the existing Taylor and Steese Highways terminate via the south side of the Yukon River. Their route was given preliminary evaluation in 1958 and 1959 by Donald Belcher & Associates, Ithica, New York. The preliminary route selected in that study would involve construction of a highway down the north side of the valley occupied by Bonanza Creek and a bridge crossing on the Charley River about one mile downstream from the mouth of Bonanza Creek.

In March, 1972, the Alaska Department of Highways identified a supplemental highway connection between Eagle and the Alaska Highway at Healy Lake. That highway would provide auto access to the extreme upstream portion of the "West Fork" Charley River where the highway would cross the low divide between the Salcha River and thence out of the Charley River basin over another low divide into the Fortymile River via Joseph Creek in the east basin.

Another form of access to the mouth of the Charley River involves reestablishment of ferry service on the Yukon River between Circle, Alaska and Dawson, Yukon Territory, Canada. This mode of transportation is being given strong consideration by the National Park Service as the Yukon River is itself a long established "highway" through the Interior Alaska and was the primary route to the Klondike Gold Fields.

The third means of future access to the Charley River involves the construction of carefully selected airstrips in the headwaters area so that small fixed-wing aircraft could provide access for recreationists. This mode of transportation is also consistent with the normal means of access throughout Alaska.

## Geology and Soils

### Geology

The Charley River drains the complexly dissected Yukon-Tanana Upland which in this area is comprised of granite mountains of Jurassic or Cretaceous Age separated from the sedimentary rocks of the Tintina Valley by the Tintina Fault.

South of the Tintina Fault metamorphic rocks including quartz-plagioclase-mica, schist; fine-grained grayish-black and grayish-green phyllite; and fine-to coarse-grained massive greenstone.

North of the Tintina Fault zone, the river meanders through a valley filled with Quaternary sediments. Near the mouth, rocks ranging in age from Middle Triassic to Tertiary crop out on both sides of the valley well back from the river.

Three geological features are distinctive in the Charley River basin: glaciation, faulting and thermal springs.

The Charley River basin was not subjected to massive glaciation as were most mountainous portions of Alaska. Accordingly, the glacial moranic deposits left by a valley glacier in Moraine Creek are distinctive.

The Tintina Fault is a major fault which in this area controls the location of the Yukon River.

A hot spring is located on the slopes of Flat Creek where possible water rises along the contact zone between the intrusive mass of the granitic batholith and the Tintina Fault zone. During the winter Flat Creek reportedly remains open along part of its upper course. No definite vents are known or is hydrogen sulfide reported. This area is considered by the Geological Survey to be prospectively valuable for geothermal steam. Its characteristics are unknown.

A distinctive conglomerate formation is also found along the banks of the river in the vicinity of the Tintina Fault. Here are found large blocks of angular igneous and metamorphic rocks associated with river worn boulders all embedded in a loose grayish matrix.

### Soils

Soils are generally shallow and rocky throughout the Charley River basin. There is no marked flood plain along the river until the vicinity of Flat Creek where substantial muskeg areas occur. Unless disturbed by fire or man soils are relatively stable. However, where steep slopes occur along the river's edge soils are unstable and subject to slumpage when disturbed by man or fire.

Parent bedrock in the upper three-quarters of the basin is granite. The remainder is sedimentary overlain with varying thickness of river terrace gravels and silts.

### Climate

Being only 125 miles south of the Arctic Circle the climate of the Charley River area is typical of Interior Alaska in that winters are long and severe with short days while summers are pleasant with long days.

Ice begins to form in the upper valleys of the Charley in October and by December the river is clothed in solid ice. Breakup is rapid and normally is free of ice by mid-May.

There are no glaciers or permanent snow field. Permafrost, however, is present throughout most of the area. In fine grained soils; permafrost starts at a depth of two or three feet while in coarse grained materials permafrost starts at a depth of about ten feet.

Ice lenses five to six feet thick are exposed in muskeg stream banks along river in the vicinity of Bonanza Creek.

### Vegetation

Vegetation within the Charley River basin ranges from alpine tundra to white spruce-paper birch forests and flood plain thickets. These are especially noteworthy because existing plant communities reflect little evidence of man's activity. The green mosaic is pleasing to the eye in that there is a constant variety which locally reflect past fire history, slope, aspect and the presence or absence of permafrost.

Alpine tundra consists of bare rocks and frost-heaved rubble interspersed between low mat herbaceous and shrubby plants. Typical plants include alpine bearberry, white mountain-avens, alpine-azalea, dwarf and bog blueberry and mountain-cranberry. Also found are moss-campion and several sedges and grasses. This vegetative type occurs in the headwater areas and at elevations of above 3,000 feet.

Closed spruce-hardwood is the dominant forest type along the Charley River drainage. White spruce stands are found on the warm, dry, south-facing slopes where drainage is good and permafrost is lacking or not close to the surface. Associated with white spruce are paper birch, balsam poplar, bearberry, red current, prickly rose, several willows, mountain-cranberry and bog blueberry.

Wildlife in the Charley River basin does not appear to have had the pronounced effect on the vegetation cover in the immediate environment as is observed in nearby river basins.

The fire induced ecology can be significant along the Charley River in that fire can produce major impacts on outdoor

recreation opportunities for 10-25 year periods.. Burned areas frequently have soil instability thereby increasing turbidity and surface runoff; change in the scenic backdrop of the river valley; and cause major shifts in the abundance and kinds of wildlife in the area.

Burns of several thousands acres are rare along the river. Fires are primarily associated with lightning.

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 is replaced by white spruce in all but the driest 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 stand of black and white spruce. Understory plants are commonly labrador-tea and mountain cranberry.

In addition to the above plant communities, the Charley River drainage locally has well developed stands of the balsam poplar type,

and open black spruce.

The balsam poplar type reaches its greatest size and abundance on flood plains. Other important plants associated with this type are alders, black cottonwood, willows, prickly rose and high bushcranberry.

Open, black spruce forest are found on north-facing slopes and poorly drained lowlands where permafrost is close to the surface. A thick moss mat, often of sphagnum mosses, sedges and grasses and tamarack occurs.

Dry, steep rock south-facing slopes of the Entrenched portions of the Charley River provide localized environments favorable for sagebrush growth.

Flood plain thickets grow on newly exposed alluvial deposits which are periodically flooded. Dominant shrubs are willows and sometimes alders with American red raspberry and prickly rose. This type is primarily confined to the general vicinity of the confluence of the Charley River with the Yukon River.

The natural vegetation in the Charley River basin is extremely important in maintaining water quality and a stable watershed. Dense ground cover of grasses, mosses, and shrubs especially in the alpine tundra and the lower tree covered areas retards surface runoff and insulates the underlying permafrost.

Blueberries are locally abundant, ripen during the last week of July and are found in edible quantities for some six weeks thereafter. Low bush cranberries ripen in late August. Rose hips are edible in late August and early September.

The Institute of Northern Forestry has identified the following plant communities in the Charley River basin as having high scientific



## River drainage,

Caribou winter range is located in the upper Charley River drainage to the south of Copper Creek and in the middle portions between Hosford and Cutlas Creek. The river valley is also a primary migration route in both spring and fall.

Calving grounds are located in the headwater areas of adjoining river basins to the south and southwest of the Charley River.

A primary requirement for continued maintenance of the Fortymile caribou is large areas of climax range and unrestricted movement.

Another major wildlife species in the Charley River drainage is Dall sheep. Approximately 200 Dall sheep reside in the Charley River basin. Little specific information is available on these sheep. However, the Dall sheep in the Charley River are different from other populations in adjacent areas in that the Charley River band is often found on the bluffs overlooking the river between Flat Creek and Hosford Creek. The Alaska Department of Fish and Game noted: 1/

"The Charley River . . . should receive special consideration in land use planning. It is one of the few, if not the only, river in Alaska that supports a population of Dall sheep just above its banks during summer months. River boaters and canoeists utilize the area for recreation and sport hunters take several sheep from this area annually."

The most important habitat requirement for Dall sheep seems to be acceptable winter climate. Sheep depend upon cold temperatures, wind and moderate snowfall. Natural mineral licks also may be important.

1/ Jan 1973. Alaska's Wildlife and Habitat

Cliffs and rugged rock outcrops are necessary sanctuaries from predators. Sheep have tolerated man's activities in close proximity to their ranges in some parts of Alaska. But intensive use of actual sheep habitat could prove detrimental as sheep are relatively inflexible. Any use interfering with or preventing use of specific areas such as the cliffs overlooking the Charley Rivers will result in substantial reduction or complete elimination of the Charley River band.

Moose, wolves, wolverines, black bear and the brown-grizzly bear, are distributed throughout the area. Small game and fur animals are valuable because of their undisturbed character: Alpine tundra, flood plain white spruce and successional stands of balsam poplar and black cottonwood, upland forests of spruce, aspen, birch, and black spruce-tamarack. 1/

#### Wildlife and Fishery

There are an abundance and wide variety of wildlife.

The Steese-Fortymile caribou herd frequents the entire drainage at one time or another. Since 1965, this herd has remained in the common headwater areas of the Charley, Goodpasture and Fortymile Rivers. During the summer the herd is scattered throughout the Tanana Hills, primarily in the alpine and subalpine hills and mountains in the headwaters of the Chena, Salcha, Charley, Goodpasture and Fortymile Rivers. In September, the herd gradually drifts southwestward toward the

1/Jan. 14, 1972. A proposal for an Ecological Reserve System for the Tiaga and Tundra of Alaska.

wintering grounds.

The Fortymile herd is one of the major caribou herds in Alaska. At the same time it has been called the most unpredictable because of frequent major changes in calving, wintering and migratory patterns over the last 20 to 30 years. At one time the herd reportedly numbered over 500,000 caribou. Today the herd is estimated at about 15,000. Estimated harvest in 1971 was 2,500 caribou. In 1972 about 1,200 were taken by hunters. A preponderance of the hunting pressure is focused at existing road accessible areas such as along the Taylor Highway to the east. Accordingly, very little, if any of the hunter harvest took place in the Charley similarly distributed.

In addition to big game habitat, the Open Mature Flood Plain portion of the Charley River provides nesting habitat for lesser scaup, pintails, widgeons, mallards, green-winged teals, white winged scoters, buffleheads, American golden eyes, Canvas backs and shovelers. Less common are redheads, ring-necked ducks, blue-winged teals and gadwails. Trumpeter swans also may nest in the area. Canada and white-fronted geese and little brown cranes are common in the wet muskeg areas.

Table 6 summarizes key big game habitat areas identified by the Alaska Department of Fish and Game for Dall sheep, caribou and waterfowl. There is no key habitat for moose.

Cliffs in the river area are used for nesting sites by ravens and swallows.

Table 6

**IMPORTANT BIG GAME AND WATERFOWL HABITAT  
CHARLEY RIVER BASIN, ALASKA <sup>1/</sup>**

Species	Area	Comments
Dall Sheep	1. Arctic Dome	Headwaters Copper Creek extends north to vicinity of Cutlas Creek on west and Flat Creek on east.
	2. Mount Sorenson-Twin Mountain	(All year habitation)
Caribou	1. East Fork Charley River	Winter range
	2. Hosford Creek north to Cutlas Creek	Winter range
Waterfowl	Yukon - Bonanza Creek	Nesting - moulting area

Birds other than waterfowl include the spruce grouse, rock and willow ptarmigan, several owls and a mixture of song birds.

Because the Upper Yukon River is a northward extension of the Great Plains and also is on the fringes of Coastal areas, there is a mixture of birdlife in the Charley River basin not typical of Interior Alaska.

<sup>1/</sup> Alaska Department of Fish and Game. Alaska's Wildlife and Habitat  
Jan. 1973

## Rare and Endangered Species

The following wildlife species associated with the Charley River basin are listed in the Department of Interior's 1966 "Red Book of Rare and Endangered Species";

American peregrine falcon (Falco peregrines anatum)--rare

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

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

Wolverine (Gulo luscus)--status undetermined

Canada lynx (Lynx canadensis)--status undetermined

American osprey (Pandion haliaetus carolinensis)-- status undetermined

In addition the northern bald eagle (Haliaeetus leucocephalus alascanus) is frequently observed and is known to nest along the banks of the Charley River and its tributaries. Although similar in overall appearance, the northern bald eagle is not the same as the endangered southern bald eagle (Haliaeetus l. luecocephalus).

Both the osprey and bald eagle nest along the water courses in the basin. The peregrine falcon uses cliff areas for nesting in the Entrenched portions of the drainage.

## Fishery

Sport fishing is considered only fair. Sheefish are found at the mouth of the Charley River, while king and chum salmon are found in the lower 8 to 12 miles. Grayling and round whitefish are found throughout.

## Subsistence use of Fish and Wildlife

There are no known subsistence hunting or fishing activities in the basin. There may be some incidental or infrequent subsistence operations closer to the mouth of the Charley River. Limited trapping has taken place from time to time. The extent of trapping use in the past few years, if any, is unknown.

## History and Archeology

The historic and cultural aspects of the Charley River basin reflects the fact that today there is little evidence of man's activities. The name Charley River appears to be derived from Charlie Village, a former Native settlement a few miles upstream on the Yukon River at the mouth of the Kandik River (Charley Stream). There are no known historic or cultural sites along the river.

Today the Charley River and its immediate environment show little evidence of past use by man. Early topographic maps prepared by Prindle (U.S.G.S.) and others prior to 1910 and reports by Mertie as late as 1938 show no trails, telegraph lines, mining operations or cabins in the Charley River basin.

## Recreation

The free-flowing Charley River together with its immediate environment offer distinctive, high quality outdoor recreation opportunities to persons desiring a primitive setting with little evidence of man's activity.

Today the Charley River basin is largely inaccessible and unknown to most recreationists. Long-range plans to improve access

by construction of limited facilities for airplanes, the State Highway proposals to construct highway access into the extreme upper portion of the basin and into the lower river area, and potential reestablishment of ferry transportation on the Upper Yukon River could intensive and concentrate uncontrolled and often conflicting resource uses. These would in turn diminish present opportunities.

Substantial portions of the land area adjacent to the Charley River basin and small amounts in the river basin have been withdrawn by the Secretary of the Interior for potential Native selection. This action was undertaken specifically at the request of the Tanana Chiefs Conference. Accordingly, there appears to be a high probability that some of the basin and much of the adjacent area will pass into private ownership. This could intensify and concentrate recreation pressure on those portions of the immediate environment of the Charley River remaining in public ownership.

Sparkling, free-flowing, mountain streams invite exploration. The rolling, ever changing topography offers first cliffs then sweeping vistas of mountains, tundra and forest; the constant twisting of the canyon encased middle sections command attention; while water dashing through boulder strewn rock gardens and surging against cliffs excite and entice the white-water boating enthusiast. Geologic outcrops and plant communities demand interpretation.

Hunting opportunities are good and of high quality.

From the standpoint of a recreation experience along the Charley River and its immediate environment, it is reasonable to expect to observe much evidence of wildlife including wolves, moose,

caribou, black and grizzly bears and numerous small game and fur animals, including beaver. A wide variety of bird-life, including waterfowl and several rare and endangered species are found. The number and variety of wildlife observed would depend upon the time of year and the part of the drainage visited.

The small band of Charley River sheep is especially noteworthy as they may be observed at very close range from the water's edge.

Geology is varied and interesting with special features including significant opportunities for rock-hounding and geologic study. The Tintina Fault, thermal springs on the headwaters of Flat Creek and valley glaciation of Moraine Creek valley are especially noteworthy.

Opportunities for boating are excellent for small hand propelled water craft such as canoes or kayaks. From a canoeing/kayaking standpoint this is one of the best clearwater, whitewater streams in this section of the State.

The ratio of pools to riffles is outstanding--few pools and they are short--until reaching the Open Mature Flood Plain portion.

At low water levels would have to line or walk through shallow rock gardens and bars above Copper Creek.

Rapids are basically boulder fields (rock gardens). Rocks are rounded, and the current is very swift. Maneuvering is a constant requirement, and is mandatory. Many rapids require scouting to determine correct channel. An upset presents good probability for damage and/or loss of equipment.



Rating of the white-water boating characteristics of the Charley River on the International Difficulty Rating (Appendix D) is Class II with limited areas of III. There are no major hazards for the prudent boater. Ratings were made on the basis of a loaded, open canoe. Use of a kayak or closed canoe, or an open canoe without camping gear would reduce the overall ratings. It is important to remember, however, that ratings are a function of equipment x skill x water level. Therefore, the above ratings are based upon what are assumed to be typical summer conditions. Reduced water flows as a result of an unusually dry water year would render many of the upstream areas impassible to water craft without considerable dragging. At the same time, increase water volumes might smooth out one rapid while creating new, more dangerous rapids elsewhere.

Overall skill level is rated at "Intermediate" because of the distance from assistance in the event of accident (Appendix D).

There are good opportunities to provide excellent hiking trails and to interconnect with potential systems in adjacent river basins such as the Fortymile River and along the Yukon River.

#### Existing uses

The primary recreation season in the Charley River basin is from ? to October. This concides with two events: (1) break-up and freeze-up of the Charley and Yukon Rivers and (2) hunting seasons.

Present recreation use of the Charley River is light and probably does not exceed 25-30 people annually. Present use appears to be almost exclusively related to hunting.

Most of the hunter harvest information is reported for unspecific

locations along the Taylor Highway to the east and Yukon River. However, with respect to the Charley River and adjacent Yukon River, at least four registered guides spent all or portions of the hunting season in the area.

Black and grizzly bear both occur in the area. Hunter harvest for both bears is often incidental to hunting for other big game species.

The numbers of Dall sheep hunters vary greatly from year to year and may be related to water level in the Charley River. Access to the major sheep areas is generally via boat navigation, even at higher water levels, is difficult at best.

The following represents a summation of available hunting information. 1/ These data reflect only minimum levels and there are no good estimates for the total number of sport hunters and no measure of native use.

	1968	1969	1970	1971	1972
Number of sheep hunters <u>2/</u>	29	6	9	26	11
Sheep harvest	7	0	3	9	4
Moose harvest (Charley R.)			0	0	
Caribou harvest (Charley R.)	-----unknown-----				
Wolf harvest (Charley R.) <u>3/</u>				4	
Wolverine harvest (Charley R.) <u>3/</u>	-----unknown-----				

1/ Personal communication, Alaska Department of Fish and Game

2/ Charley R., Twin Mtn, Mt. Sorenson, Seventymile R., Glacier Mtn., Kandik R., Tatonduk R., and Nation R.

3/ 1971-72 Regulatory Year. Includes both trapping and hunting.

There are no public recreation facilities or designated public outdoor recreation areas in the Charley River basin. Accordingly, it is mandatory that visitors bring all equipment and supplies needed.

#### Future Uses

The free-flowing Charley River and its immediate environment are rich in high quality outdoor recreation opportunities. These include white water boating on an intermediate sized, clear water Interior Alaskan river, hiking and nature and geologic study in a primitive setting without substantial evidence of man's activity. Because of access and distance, it appears doubtful that the area would provide winter outdoor recreation.

Although camping would generally be associated with all of the above recreation activities, some people engage in this outdoor recreation activity as an end in itself. There are numerous opportunities for primitive camping sites along the Charley River and its tributaries. The many gravel bars and plentiful firewood along a clear, free-flowing river are most attractive for this purpose.

#### Limitations

Limitations to future recreation use include adverse winter weather, fire danger, access, and the mosquito.

Of these, access is probably the most sensitive as improved access can create uses of a type and amount that would diminish the existing natural environment.

Although future increases in recreational and human use of the river area is anticipated, the level of use should be less than the

optimum capacity of the existing untrammelled resources to sustain a high quality experience with little evidence of man's activity.

It is probable that any significant increase above the existing low levels of human use could have severe adverse environmental impacts. For example, litter such as gas cans, bottles, paper boxes, aluminum pull-tabs, plastic, polyethylene sheeting and aluminum foil are just now beginning to collect and increased use without adequate sanitation precautions to protect water quality from human excrement can pose health hazards.

A major aspect of increased human use is associated with the increased probability of fire which would destroy climax vegetation thereby adversely affecting big game populations and distribution.

A limitation to existing and future recreation use is related to the lack of good information to determine if the water level observed is sufficient for a good experience, or too high or too low. The last causes a long hike, while too much water can be a safety factor.

#### Scientific

The resources of the Charley offer great opportunities for scientific study. Because of its existing undisturbed condition, outdoor laboratories would be able to closely study and follow changes which result when fragile subarctic soils are mechanically altered. Similarly the impact of man in the pursuit of recreation could be measured in terms of the impact of the environment on man, and man on environment. Such data would be useful in determining the recreation capacity of the resource when the objective was to provide a high

quality experience stressing solitude.

Scientific study of the relationships between the various plant communities of the basin, especially the alpine tundra, flood plain white spruce and successional stands of balsam poplar and black cottonwood, upland forests of spruce, aspen and birch, and black spruce-tamarack as recommended by the Northern Institute of Forestry would provide valuable information on how to best manage the resources in the adjacent Fortymile and Seventymile River basins where substantial alteration of the original environment has taken place.

There is potential for study of unusual habitat of the Charley River band of Dall sheep.

## V. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The conclusion of this study is that the Charley River together with its major tributaries and their immediate environments possess values which qualify them for inclusion in the National Wild and Scenic Rivers System.

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

- ① It is a clear, free-flowing river without impoundment, straightening, rip-rapping or other modifications of the waterway.
- ② The river is long enough to provide a meaningful outdoor recreation experience.
- ③ There is a sufficient volume of high quality water during normal years to permit full enjoyment of the outdoor recreation potentials of the Charley River and its major tributaries.
- ④ The Charley River and its principal tributaries and their immediate environments possess an outstandingly remarkable combination of scenic, recreational, geologic, fish and wildlife, scientific and other similar values.
- ⑤ The overall setting of the Charley River and its immediate environment is primitive, pleasing to the eye, and almost totally lacking in visual evidence of man's activities.

- The Charley 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 in the nearby Beaver Creek, Birch Creek, Fortymile River, Kandik River, or Yukon River between the United States-Canada border and Circle. Further, the range and quality of outdoor recreation opportunities of the Charley River drainage are not duplicated in any of the 34 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.
- There is a continuing Federal interest in the short and long range management of the public resources of the Charley River, its principal tributaries and their immediate environments.
- The entire Charley River basin is located within a broad mineralized belt. There are no active or potential mining claims within the river or its immediate environment and only two instances of gold have been noted. Both were of a noncommercial quality.

- There are no commercial timber values within the river's immediate environment.
- There are no hydroelectric potentials within the Charley River basin. But the potential Woodchopper project located downstream on the Yukon River would inundate the lower 20-25 miles of the Charley River.
- The undisturbed plant and animal communities, which are representative of Interior Alaska, have substantial value for scientific study to determine how best to use the resources of the Interior subarctic areas of Alaska to man's long-term benefit and enjoyment.
- Derwent and Fisher Creeks, both located in the area withdrawn for potential Native selection would make worthy additions to and supplement the free-flowing values of the adjacent Charley River and Bonanza Creek.

### Recommendations

It is recommended that:

- Approximately 164 miles of free-flowing stream in the Charley River system together with 200,000 acres comprising its immediate environment be included in the National Wild and Scenic Rivers System by the Congress.
- The Federal agency having primary responsibility for administration of public lands adjacent to the river's immediate environment also administer the river environment. Subject to existing valid rights, the minerals in Federal lands within segments designated as "wild river areas" 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.

- Within one year from the date of the Act including the Charley River, Alaska, and its principal tributaries in the National Wild and Scenic Rivers System, the administering agency in cooperation with the State and user 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.
- Detailed plans for development, recognize potential mineral development in areas outside the river's environment.
- The Federal administering agency work with Native land owners should Derwent and Flat-Orthemmer Creeks (both 13 miles long) be selected by Natives and should the Natives so desire, to determine whether these two areas should be added to the miles recommended herein.
- Overall administrative arrangements retain the option for active participation by Native groups should portions of the Charley River basin be selected by the Tanana Chiefs Conference and the concerned Native groups desire to participate.
- 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.

#### 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 proposed Charley River, Alaska, component contain only one of the three classes defined in that Act--wild. Section 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."

It is recommended that the Federally managed Charley Wild River include the following drainages.

<u>Area</u>	<u>Length in River miles</u>
Charley River	88
Crescent - Moraine Creeks	32
Copper Creek	27
Bonanza	5
Hosford Creek	<u>12</u>
Total	164

Figure 9 shows the segments recommended for wild river designation together with the present land status.

The total area recommended for inclusion in the Charley Wild River normally would be within one mile of the river bank.

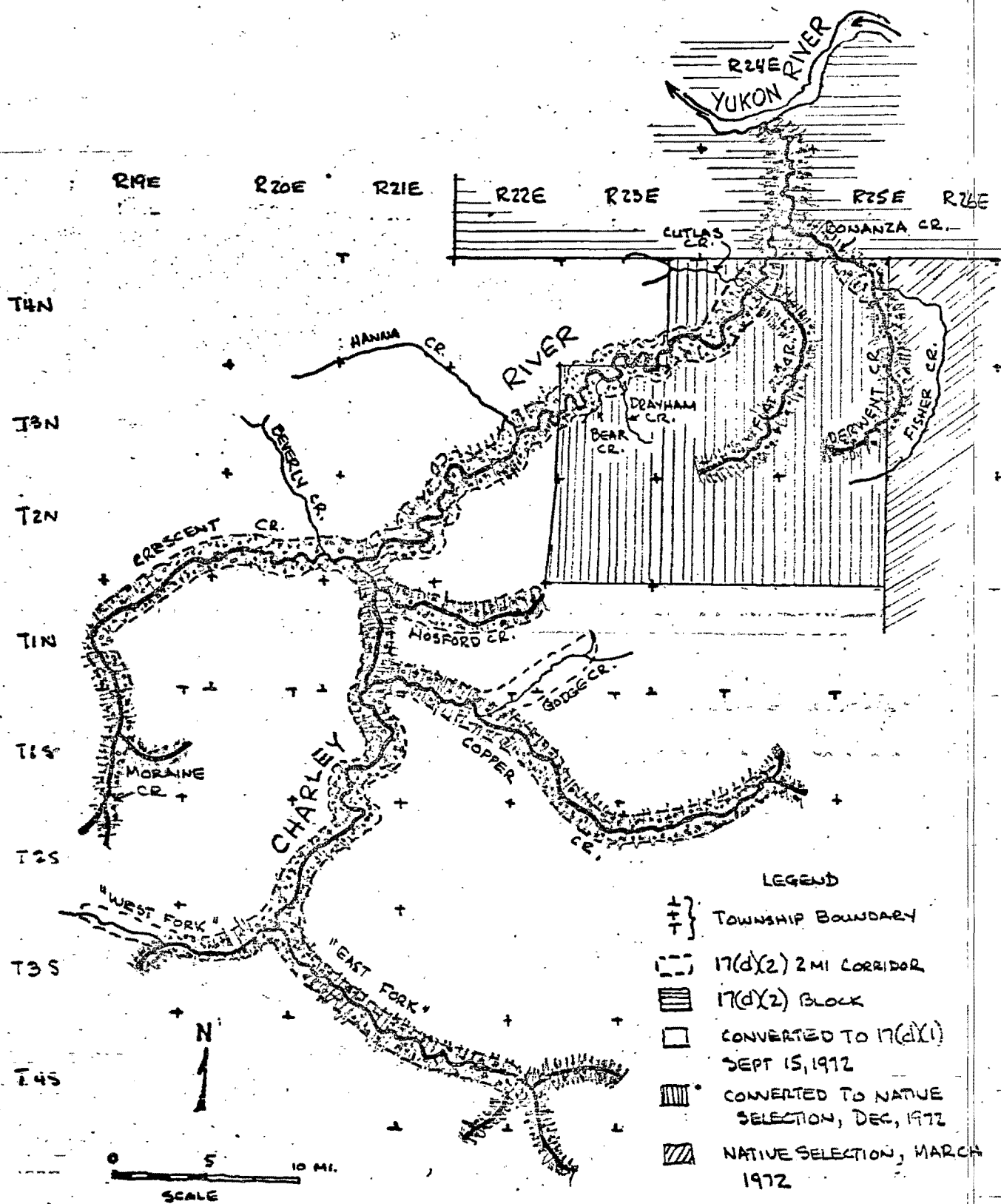


FIGURE 9. AREAS QUALIFIED FOR WILD RIVER DESIGNATION, CHARLEY RIVER, ALASKA \*

\* NOTE DOES NOT (1) REPRESENT LATERAL BOUNDARIES, (2) RECOMMEND INCLUSION OF RIVER AREAS WITHDRAWN FOR POTENTIAL NATIVE SELECTION UNTIL NATIVES HAVE COMPLETED THEIR SELECTIONS:

## **VI. CONCEPTUAL RIVER PLAN**

The Wild and Scenic Rivers Act, section 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 administering Federal agency in developing detailed boundaries and plans for development and management of the Charley 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 Charley Wild 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 natural and geologic history of the river area.
- Provide for present and future generations a high quality outdoor recreation experience in a primitive setting which shows no substantial evidence of man's activity.

Several elements of the proposal are dependent upon future land use and ownership. Therefore, the following assumptions have been made:

- Future discovery and development of minerals on public and private lands in the river basin outside the river's immediate environment will not cause degradation of existing high water quality.
- A carefully selected highway crossing in the vicinity of Bonanza Creek would not necessarily affect the proposed "wild river" classification.
- A carefully selected highway into the extreme headwater areas would not adversely affect overall wild river values providing key wildlife habitat--especially caribou calving grounds--were not disturbed.
- The resources of the Charley River will not sustain a high volume of recreation use and maintain its existing high quality outdoor recreation experience.

#### Appropriate Boundaries

Figure 9, page 75 ) shows the upstream and downstream termini recommended for inclusion in the National Wild and Scenic Rivers System.

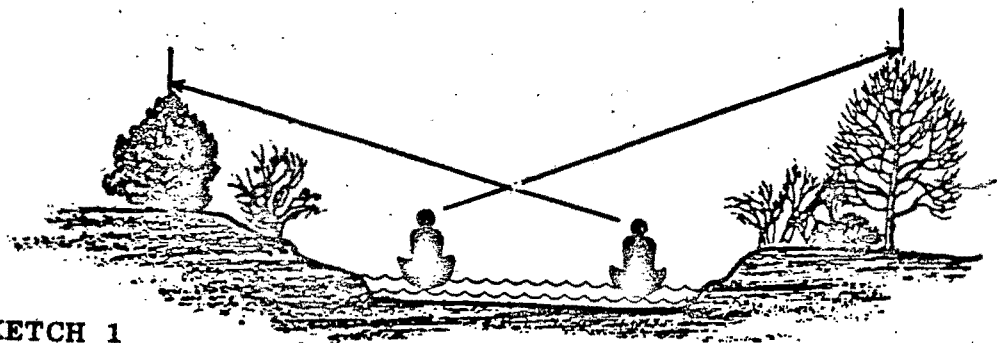
Within one year after inclusion of the 164 miles of the Charley River basin in the national system the administering agency will determine definite lateral boundaries. The rationale used for determining appropriate boundaries are drawn upon concepts developed on a number of recent studies concerning 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:

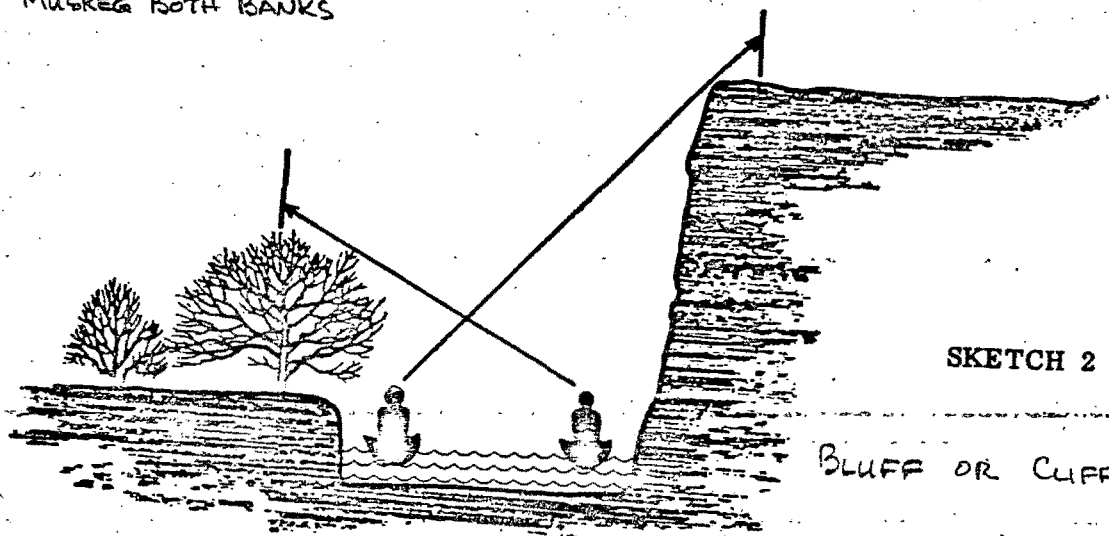
1. Maintenance of a feeling of "spaciousness" consistent with the type and extent of recreational uses and of other resources involved.
2. The primary Visual Corridor or view from the river or river bank (see figure 10).
3. Type and extent of recreational use intended for a given river area (camp area, 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 geological or vegetation sites.

☐ It is expected that in almost all cases the lateral boundaries would be within one mile of the river's edge and in some cases considerably less. Available information suggest that application of the above lateral boundary guidelines would not exceed 200,000 acres.



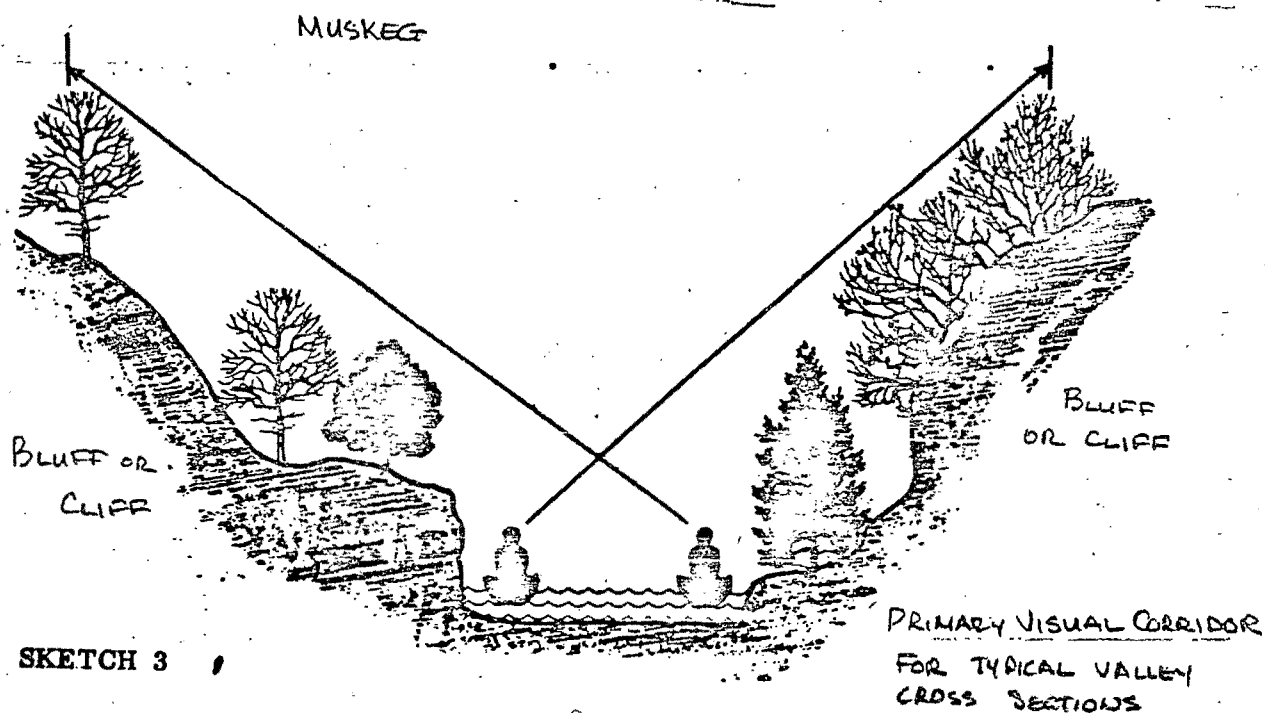
SKETCH 1

MUSKEG BOTH BANKS



SKETCH 2

BLUFF OR CLIFF



SKETCH 3

PRIMARY VISUAL CORRIDOR  
FOR TYPICAL VALLEY  
CROSS SECTIONS

FIGURE 10. CRITERIA FOR SELECTING LATERAL BOUNDARIES, CHARLEY RIVER, ALASKA

## Acquisition Policies and Land Use Controls

### Private Lands

Almost 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 determined to be navigable.

Accordingly, acquisition of the few acres of land in pending transfer to Natives under the 1906 Native Allotment Act is not recommended unless offered for sale.

### Mining

Section 9(a) of the Wild and Scenic Rivers Act, P.L. 90-542, states:

"Nothing in this Act shall affect the applicability of the United States mining and mineral leasing laws within components of the national wild and scenic rivers system except that--

(i) all prospecting, mining operations, and other activities on mining claims which, in the case of a component of the system designated in section 3 of this Act, have not heretofore been perfected or which, in the case of a component hereafter designated pursuant to this Act or any other Act of Congress, are not perfected before its inclusion in the system and all mining operations and other activities under a mineral lease, license, or permit issued or renewed after inclusion of a component in the system shall be subject to such regulations as the Secretary of the Interior or, in the case of national forest lands, the Secretary of Agriculture may prescribe to effectuate the purposes of this Act;

(ii) subject to valid existing rights, the perfection of, or issuance of a patent to, any mining claim affecting lands within the system shall confer or convey a right or title only to the mineral deposits and such rights only to the use of the surface and the surface resources as are reasonably required to



carrying on prospecting or mining operations and are consistent with such regulations as may be prescribed by the Secretary of the Interior or, in the case of national forest lands, by the Secretary of Agriculture;

• • • • •

Regulations issued pursuant to paragraphs (i) and (ii) of this subsection shall, among other things, provide safeguards against pollution of the river involved and unnecessary impairment of the scenery within the component in question."

Section 12(c) of the same Act requires 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 purpose of eliminating or diminishing the pollution of waters of the river."

Accordingly, the administering agency, in consultation with the State of Alaska and all concerned user groups, should develop mining regulations to prevent pollution and unnecessary impairment of the scenery. These should consider the desirability of: having claim locations and notice of assessment work also filed with the administering agency; retention of top soil; restoration of topography; retention of topographic or vegetative screening between the mine and the water's edge, and; replanting or reseeding the mined area. These regulations should apply to valid claims located in "wild" river areas.

Prospecting and mining activities often require heavy equipment such as bulldozers, stationery engines, etc. Regulations covering such activities and when it is necessary to cross the river area or to reach valid claims within the river area should consider the desirability of a permit system. Issuance of such a permit should take into account the

necessity for: constructing new or significantly altering existing overland routes to the river; the possibility of movement of heavy equipment during the winter months, and; the feasibility of using aircraft. The purpose of the permit should not be a means to deny access but rather to assure that access is obtained in a manner which causes the least possible impact on other users.

#### Management Policies

The management objectives for the Charley 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 when there is insufficient snow cover. The administering agency 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. The need for snowmobile travel in connection with subsistence activities such as trapping and hunting as well as sport hunting should be recognized in any regulations.

Strong consideration should be given to establishing designated trails for recreational use which promote user safety, protect public and private resources, minimize conflicts among the various existing or potential users of the area and prevent harassment of wildlife and

disruption of key wildlife habitat. Because of safety, consideration should be given to restricting motorboat use upstream from the vicinity of Bear Creek.

#### Roads

Construction of new roads should consider the following aspects: impacts upon the existing life style of local residents using the resources of the Charley River basin; air and water pollution probabilities; noise pollution; long-term effect on human population distribution and impacts on existing land and water uses; long-term effect of caribou migration; long-term effect on Dall sheep populations, and; long-term effect on key wildlife habitat areas.

#### Water Quality

The State of Alaska in cooperation with the administering agency and all concerned user groups should prepare water quality standards to recognize the special values of the Charley River.

#### Hunting, fishing and trapping

Hunting, fishing and trapping would continue to be managed by the State of Alaska. The management plan for the Charley River, however, should consider whether zones 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.

## **Forest fire**

Special efforts be made to reduce fire hazards. Such measures as banning open fires or restricting open fires to designated areas should be considered.

## **Timber**

Consideration be given to restricting timber harvest within the river corridor for cabin construction or reconstruction of existing cabins where there is ample timber on lands immediately adjacent to the river corridor.

## **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, and; providing appropriate recreation facilities for the public use and enjoyment of the river.

The administering agency, within one year of the date of inclusion in the national system would prepare a detailed development plan for the Charley Wild River Area. The conceptual development plan emphasizes public access corridors between the various segments of the Charley River drainage and with the adjacent river basins; and difficult access with moderate use. Geologic and vegetation sites of high scientific value would be protected and interpreted throughout 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 center or administrative headquarters normally would be located outside the river area. Simple comfort and convenience facilities such as fireplaces, 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.]

Facilities would be primitive with emphasis upon providing primitive camping areas which will maintain solitude, distribute visitor use and protect both the user and the resource. There are ample opportunities for this type of facility. Approximately 200 miles of foot trail would be designated and marked. The construction of such facilities would, however, be undertaken only when public use was sufficient to warrant such action.

Because road access into the headwater areas of the Charley River is a long-range program with substantial uncertainties as to where, when it would be located, if constructed, the detailed development plan should consider the desirability for selecting one or two sites for safe aircraft landings to provide access.

## VII. ECONOMIC EFFECTS OF INCLUSION IN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

The Charley 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 since future uses are largely dependent upon factors of ownership, transportation and overall demand for the several resources involved.

### Recreation

Increasing population pressure and desire for more recreation lands and opportunities, recreational uses in the immediate environment of the Charley 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 Charley River would assure that the increase 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 to occur without implementation of a coordinated, overall management and development of the recreation and non-recreation resources of the Charley River and its immediate environment.

The conceptual recreation and development plan contemplates that public facilities would be adequate to accommodate no more than

2,000 visitors exclusive of hunting and fishing by the year 2000. These estimates are based upon four primary assumptions. (1) The Charley River is added to the National Wild and Scenic Rivers System; (2) public facilities are provided by the administering agency and supplemental private enterprises; (3) related free-flowing river areas in the vicinity of the Charley River basin-- the Upper Yukon and Fortymile Rivers-- are protected and developed as units of the national conservation system; and (4) controlled access to the headwaters of the Charley River will be provided.

Estimated annual visitation by the year 2000 can be arranged by primary outdoor recreation activity as follows:

<u>Activity</u>	<u>People</u>	<u>Activity</u>	<u>People</u>
Primitive camping	700	Hiking	500
Canoeing & Kayaking	800		

Recreation use related to hunting and fishing would be in addition to the above. Estimates for future public opportunities for hunting and fishing are expected to continue at about the same level as now.

Economic impacts resulting from public recreational opportunities made available as a direct result of the inclusion of the Charley 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, canoe liveries, guiding and related services.

At the present time there are no base data to compare the economic impact of public recreation in the Charley River area since the absence of public support or service facilities requires present users to purchase supplies and equipment before arriving at the Charley River, Alaska, with similar opportunities at free-flowing river areas elsewhere it appears that impacts to the local and state economics should be substantial as indicated in table 7.

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 such as long car shuttles and in some cases cost of air access into the specific river area.

#### Non-Recreation

Impacts on non-recreational uses of the immediate environment of the Charley River as a unit of the National Wild and Scenic Rivers System are expected to be minimal.

Mining within wild river areas would be prohibited. It is probable that any restrictions on mining operations causing water pollution or unnecessary impairment of the scenery would be similar with or without wild river designation. There are no known mineral values within the river's immediate environment. Mining on adjacent



**Table 7      Comparison of Recreation Expenditures at Selected  
Free-Flowing River Areas Comparable to the  
Charley River, Alaska**

<b>Area</b>	<b>Cost per trip <u>1/</u></b>	<b>Daily Cost per person</b>
<b><u>Canoe/Kayak (family)</u></b>		
Eel River, Ca.	\$280 <u>2/</u>	\$13.33 <u>3/</u>
Klamath River, Ca.	320 <u>2/</u>	26.66 <u>4/</u>
Trinity-Klamath Rivers, Ca.	285 <u>2/</u>	26.66 <u>4/</u>
Kipawa Area, Quebec, Canada	360 <u>2/</u>	13.33 <u>5/</u>
<b><u>Canoe/Kayak (individual)</u></b>		
Buffalo River, Ark. <u>6/</u>	\$120	\$20.00
Chilikadrotna River, Mulchatna, Ak.	485-375	53.88-75.00
Chulitna River, Ak.	70	35.00
Current River, Mo. <u>6/</u>	110	15.71
Deska River, Ak.	185	37.00
Kenai Area, Ak.	365	20.27
Lewis & Clark Waterway, Mont.	140	17.50
Little Susitna River, AK.	65	32.50
Salmon, Middle Fork, Ida. <u>6/</u>	285	47.50
Snake River, Wyo.	135	13.20
Yukon River, Ak.	280	40.00
<b><u>Hiking (individual)</u></b>		
Wrangell Mtns., Ak.	\$330	\$19.41

- 1/ Excludes all transportation and related costs of food and lodging while in transit to and from home and river area.
  - 2/ 2 adults, 1 child, ea.
  - 3/ Additional child \$60 for entire trip.
  - 4/ Additional child \$80 for entire trip.
  - 5/ Additional child \$110 for entire trip.
  - 6/ Unit of the National Wild and Scenic Rivers System or related river conservation program.
- 

lands outside the river area should not be affected and as indicated previously matters of water quality and changes in the existing environment from such uses would be expected to be the same with or without wild and scenic river designation.

Timber harvest is not expected to be affected since the only known use of timber has been for local construction of a few cabins and for cooking and heating purposes. There is no known current use.

Subject to existing valid claims there would be no disposition of public lands located within the river corridor for homesites, trade and manufacturing sites or related purposes. It is unlikely that the disposition of public lands for such purposes would be different with or without wild river designation.

Development of the potential Woodchopper hydroelectric site would not be foregone. Available information indicates it is unlikely that this hydroelectric potential would be developed without wild and scenic river designation.

Construction of paralleling roads within wild river areas would be foreclosed. This would require development of alternative means of access or alternative highway location. The additional cost, if any, of such alternatives is not known since there are no firm data indicating where, when or for what reasons additional roads might be needed.

Provision for carefully selected highway crossings of wild river areas would be maintained should studies for such potential road crossings show there are no other reasonable or feasible means of access to non-recreation resources adjacent to the river corridor.

Hunting, fishing and trapping for subsistence or sport purposes in the Charley River or its immediate environment would continue to be managed by the State of Alaska with or without wild and scenic 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 effects 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 Charley 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) The only practicable method of assuring future availability of the recreation, historic and fish and wildlife values for the benefit and enjoyment of future generations is to devise a formal plan which provide 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 Charley River and its immediate environment--for example, fish and wildlife resources.

Substantial portions of the streambed may be in State ownership if determined to be navigable in accord with the Alaska Statehood Act and small portions of the Charley River basin may be selected by Native groups. In either event significant portions of the immediate environment would also remain in Federal ownership.

The special values of the Charley River basin is recognized in the Comprehensive Statewide Outdoor Recreation Plan (1970). At this time, neither the Natives or the State have any plans to manage free-flowing river areas. Accordingly, it is proposed that framework Federal management plans reserve options for future active participation by State and Native groups should they desire.

Potential alternatives of State or local action was discarded on the basis that:

- (1) 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 Charley River and its immediate environment.

- (2) The Charley River is in an area where there will be continued Federal involvement, especially fire control.

#### Different Boundaries

Several options for including various segments of the Charley River and its principal tributaries. These were:

- (1) Inclusion of the entire drainage. Careful evaluation showed that many of the smaller tributary streams either singly or in combination did not possess distinguishing features. Also addition of such areas only complicated intensive management of the immediate river environment which will be required to protect the high quality of the existing environment as human use increases. Similarly addition of the myriad small tributary streams complicated management of the adjacent land areas.
- (2) Inclusion of only areas withdrawn under the provisions of Section 17(d)(2) ANCSA. Careful evaluation of these river areas and their immediate environment showed that significant areas with high public values were omitted thereby reducing the total potential values for long-term benefit and enjoyment. Accordingly, the distinctive glacial features in the Moraine Creek valley were added. For comparable reasons the resources of the Flat-Orthmer Creek (thermal springs) and Fisher Creek (the best

representative of an Entrenched valley flowing northward directly across the Tintina Fault) which have been identified for potential Native selection should be considered for addition at such time as land status is firm. Godge Creek, a withdrawn area under Section 17(d)(2) was evaluated and found to be somewhat comparable in value to those of Hosford Creek and also in an area where there may be mineral value. Accordingly, it was felt that overall public interests would be protected until such time as the mineral character of Godge Creek is known.

- (3) Inclusion of only those portions where sufficient water volume existed to provide canoeing on a regular basis. This was discarded because most of the drainage has sufficient water volume in the spring and after extended periods of rain. At the same time these smaller stream areas have been found to possess substantial outdoor recreation opportunities for hiking, nature study and to provide a representative example of the total drainage of the Charley River from its source to its confluence with the Yukon River.

- (4) Deletion of Bonanza Creek because of the possibility of construction of the Eagle-Circle highway. There are major uncertainties about the location of the proposed highway and it is not certain that the highway would be constructed. It is recognized that the highway, if constructed in the Bonanza Creek valley, would change

the existing wild river character to the extent that Bonanza Creek would be reclassified as either a scenic or recreational river area. This further supports the need for inclusion of Flat-Orthmer Creek to retain at least one representative sample of an entrenched tributary crossing the Tintina Fault in an untrammelled condition.

- (5) Deletion of the lower 20-25 miles of the Charley River which would be flooded by the potential Woodchopper hydroelectric project on the Yukon River. There are substantial uncertainties that the project would be constructed and this portion of the Charley River (Open Nature Flood Plain) has characteristics not found in the upstream areas.

Inclusion in Another National Conservation System:

There is high potential for inclusion in two other national conservation systems or for retention as public interest lands. Proposals for management of the entire 1.1 million acre Charley River basin have been made by other Federal agencies to: Create a unit of the National Forest System to be administered by the Forest Service; create a unit of the National Park System to be administered by the National Park Service; or to retain the existing administrative responsibilities of the Bureau of Land Management.

All three proposals for the entire Charley River basin recognize and emphasize: (1) controlled multiple use and development of the public land and water resources of the basin; and (2) special



protection of the Charley River, its principal tributaries and their immediate environments.

Accordingly, the proposal to create a Charley Wild River as a component of the National Wild and Scenic Rivers System is being recommended as a means to provide both specific public and congressional guidance on the long-range management and development goals for the Charley River and its immediate environment as distinct from the adjacent "multiple-use" areas. Primary responsibilities for administration of the Charley Wild River would rest with the land manager of the adjacent public lands; i.e., Forest Service, National Park Service, or Bureau of Land Management. All three agencies presently manage components of the National Wild and Scenic Rivers System established by the Congress in 1968.

#### 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 recreationists using the river or the adjacent river bank. . . . " Accordingly, strong consideration was given to the following:

- (1) Classification of the entire river areas as "scenic" or "recreational" to permit mining and road construction within the river or its immediate environment. Careful examination of available information shows that there are substantial uncertainties about the extent, if any, of mineral occurrence of national significance in the river area. The primary values of the Charley River is

its existing untrammelled condition and distinctive wildlife and plant communities. These existing high values would be seriously threatened with the degree of resource use and development permitted under either "scenic" or "recreational" classifications.

- (2) Classification of Bonanza Creek and the Charley River downstream from Bonanza Creek as "scenic" or "recreational" because of potential road construction. The long-range highway program affecting the Charley River has major uncertainties.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF OUTDOOR RECREATION

IN REPLY REFER TO:

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Mar 9, 1973

To: ✓ Clay Hardy, BSF&W  
Ron Smith, BLM  
Barney Coster, USFS  
Al Henson, NPS

From: Alaska Task Force Leader

Subject: Wild and scenic river studies, Alaska

The enclosed is self-explanatory. We have attempted to incorporate all of the suggestions that we received from you as well as the overall directions discussed in our last meeting. Any thoughts or comments would be appreciated as we will follow data presentation along the general lines shown in the enclosed prototype.

  
Jules V. Tileston  
Alaska Task Force Leader

1 Enclosure

P.S. No further distribution of this document will be made without approval of WASO. You have the only copies in the State.

UNITED STATES GOVERNMENT

# Memorandum

D4225 Alaska  
(W&SRS)

TO : Assistant Director Eastman

DATE: Mar 8, 1973

FROM : Alaska Task Force Leader

SUBJECT: Prototype environmental assessment, Charley River dated  
March 8, 1973

The subject prototype was prepared in accord with BOR Manual, Part 705, Chapter 1, entitled "Environmental Statements, Preparation by the Bureau" published in the Federal Register, March 30, 1972, Vol. 37, No. 62, pp. 6501-6504.

We are revising the eight discussion draft reports submitted to you and study participants in late December and early January. As a minimum, the data contained in the subject prototype would also appear in all ATF field reports. Accordingly, we would like to know if the prototype contains adequate data and is in an acceptable format to comply with the requirements of NEPA and the provisions of ANCSA. If possible, we suggest Dr. Farrell be consulted as we understand he will be reviewing proposed EIS documents for ANCSA proposals. Because of the disparity of good data for most of the river areas in Alaska we believe it would be mutually beneficial if Dr. Farrell could visit Alaska and discuss EIS data presentation with us.

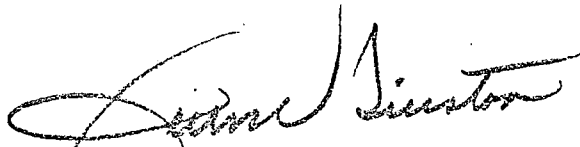
We stress that the enclosed prototype is preliminary and subject to substantial change in that key data is not yet available. For example, the State highway program will not be known for another 30-60 days, the State definition of stream bed ownership will not be available for several months, and agency proposals for management of adjacent areas (BLM, NPS, and FS) are not completed. We further emphasize that we have not yet received comments from the State of Alaska and the Doyon Regional Corporation on the earlier discussion draft. We understand that comments on factual data will be forthcoming. Also, additional field work is scheduled for May/June to confirm portions of the proposal.

The prototype reflects preliminary comments of Federal agencies as noted in part X. The prototype however has not been reviewed. By copy of this memo we are distributing



one copy each to the BLM, NPS, FS, and BSF&W study teams.  
This approach has been discussed with the Regional Director.

May we have your comments by March 22 on the adequacy of data and format. In the meantime we are proceeding to revise our reports to present data shown in the enclosed prototype.



Jules V. Tileston

Enclosures (2 cys)

I.

SUMMARY

( ) Draft      ( ) Final      Environmental Statement

Department of the Interior, Bureau of Outdoor Recreation

1. Type of action:      ( ) Administrative      (X) Legislative
2. Brief description of action: It is proposed that 186 miles of the free-flowing Charley River and its principal tributaries, Bonanza, Crescent, Copper, Derwent, Flat, Hosford and Moraine Creeks, Alaska, together with approximately 100,000 acres of public land comprising the immediate environment be added to the National Wild and Scenic Rivers System as a wild river area. It is proposed that the area be Federally administered and that the agency selected by the Congress prepare detailed management and development programs and lateral boundaries.
3. Summary of environmental impact and adverse environmental effects: As a wild river area management and development concepts emphasize retention of the existing untrammelled environment for the use and enjoyment of present and future generations. There are no known adverse environmental effects which cannot be mitigated..
4. Alternatives considered: Alternatives include no action, State or local action, different classifications, different boundaries, and inclusion in other national conservation systems.
5. Comments have been requested from the following:  
(To be supplied later)
6. Date draft statement made available to CEQ and the public:  
(To be supplied by AS/PP)

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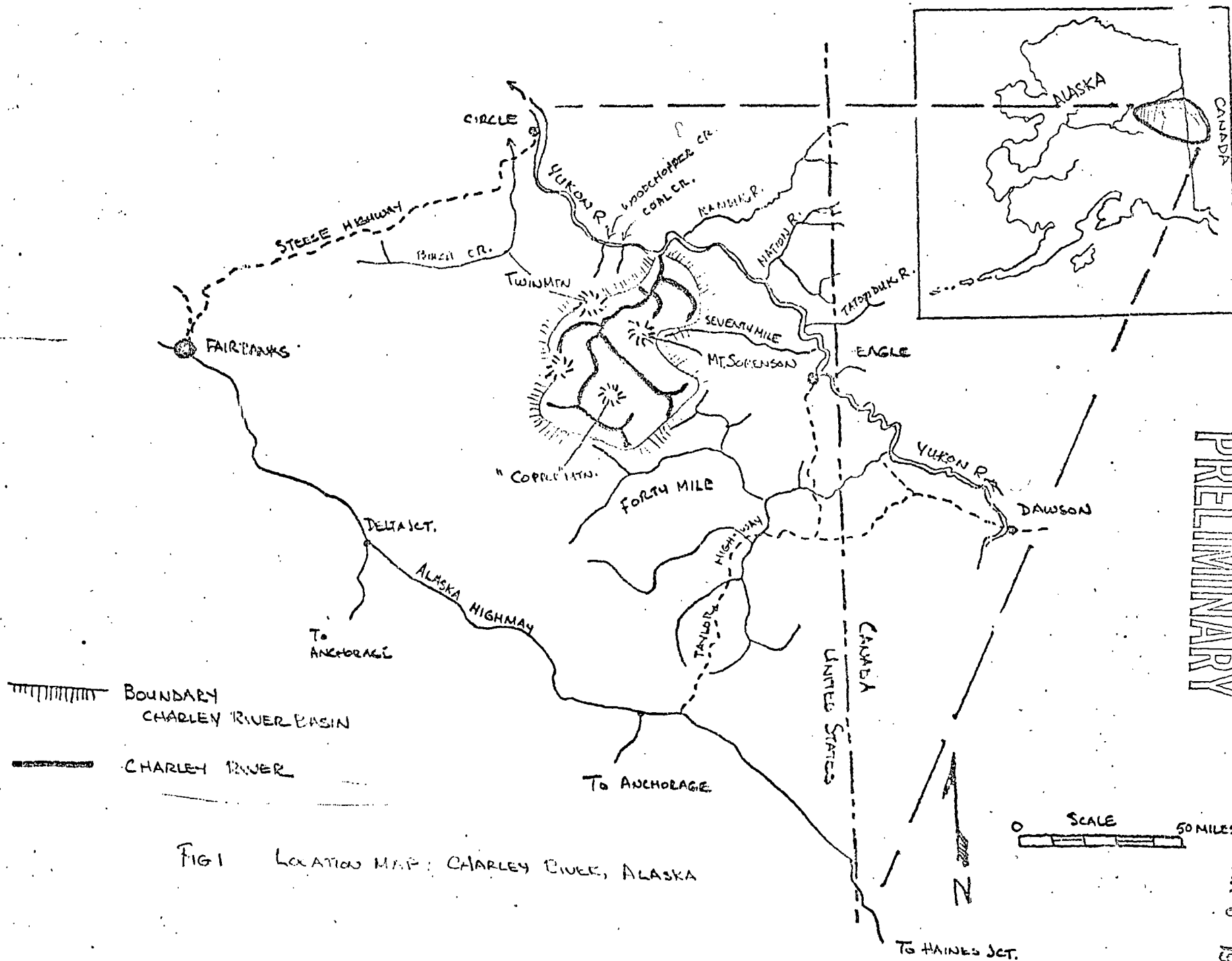


FIG 1 LOCATION MAP: CHARLEY RIVER, ALASKA

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## CHARLEY RIVER

### II.

#### DESCRIPTION OF THE PROPOSED ACTION

- a. Location: The Charley River (figure 1) is a north-flowing clearwater tributary to the Yukon River in Interior Alaska near the Canadian-United States border. The river is about 200 airline miles east of Fairbanks area, Alaska (population 45,864<sup>1/</sup>); approximately 50 miles southeast of Circle (population 54); and approximately 50 miles northwest of Eagle City (population 36).

Primary access to the river area is by small boat from the Yukon River. A single, primitive bush airstrip provides limited air access to the central part of the Charley River basin. This private airstrip is only marginal in terms of safety and has been constructed on public land without authorization. There are no roads or trails providing overland motorized access to the river area.

- b. The Proposal: It is proposed that the Charley River and its principal tributaries, Bonanza-Derwent, Crescent-Moraine, Copper, Flat and Hosford Creeks, together with their immediate environments be included in the National Wild and Scenic Rivers System by the Congress (figure 2).

Administration would be determined by the Congress

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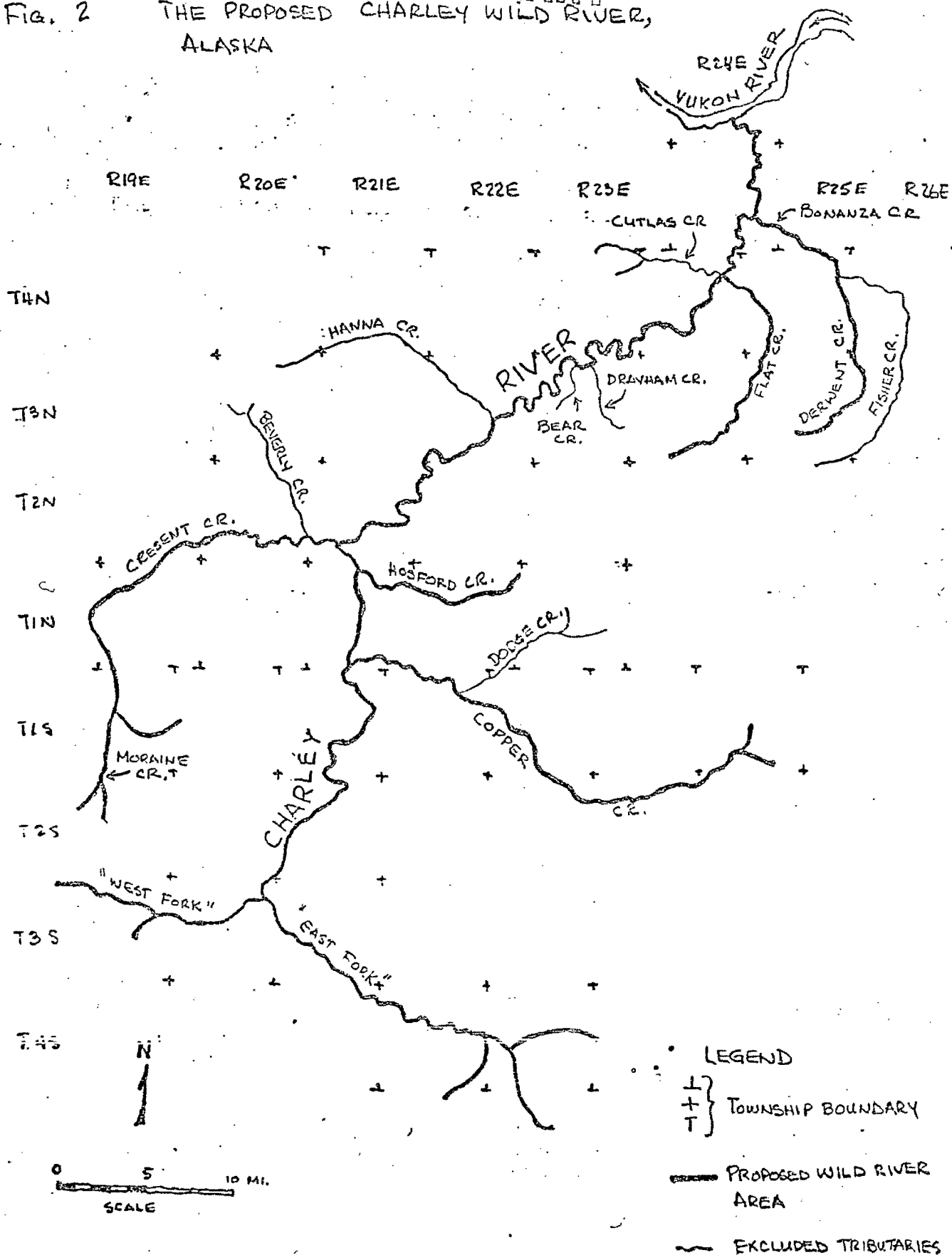
<sup>1</sup>/1970 U.S. Population Census.

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FIG. 2

## THE PROPOSED CHARLEY WILD RIVER, ALASKA



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taking into account the recommendations of the Secretary of the Interior, the Joint Federal-State Land Use Planning Commission and the State of Alaska. It is proposed that the river and its immediate environment be administered by the Federal agency having primary responsibility for management of adjacent public land and water resources. These include the Bureau of Land Management if the adjacent public interest withdrawal is retained, the Forest Service if a unit of the National Forest System is created or the National Park Service if a unit of the National Park Service is created.

- c. Classification: It is proposed that the Charley River, its principal tributaries and their immediate environment be classified a "wild river area" as defined in section 2(b) of the Wild and Scenic Rivers Act, P. L. 90-542.

The administering agency would develop the detailed plans for management and development of the proposed Charley Wild River. Concepts recommended for inclusion in the detailed management and development plans are to:

1. Provide for present and future generations a high quality primitive outdoor recreation experience in a natural environment having little evidence of man's activity.
2. Maintain and protect the existing high water quality.

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3. Maintain and protect the free-flowing character of the river and its principal tributaries.
4. Maintain and protect existing wildlife habitat, especially that associated with Dall sheep, caribou, and critical nesting sites of the endangered American peregrine falcon, and the American osprey.
5. Develop scientific information on man's impact on an undisturbed subarctic environment with a view toward obtaining information on how to better manage and develop public and private resources throughout Interior Alaska.

It is proposed that hunting, fishing and trapping for both sport and subsistence use continue. These would be administered by the State of Alaska *Left lands mgd by Federal agency*

As a wild river, the river bed and its immediate environment would be withdrawn from location and entry under the U.S. mining and mineral leasing laws. Valid existing rights would be maintained. However, the administering agency, in consultation with the Environmental Protection Agency, State of Alaska, and concerned users of the Charley River, including local residents and recreationists, would develop regulations to protect existing water quality and unnecessary impairment of the scenery as a result of mineral development where valid rights exist.

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The administering agency in consultation with the State of Alaska and concerned user groups would develop regulations for the use of all-terrain-vehicles and motor-boats. These would be designed to promote safety, protect public resources and minimize conflicts among the various users of the area. These would give special recognition of the need for transportation by snow machine for trapping purposes. In addition to recreation, social and economic uses of all-terrain-vehicles and motorboats in the river area, the proposed regulations would consider harassment of wildlife and disruption of wildlife habitat.

Access would continue to be difficult. It is proposed that consideration be given to development of one or more carefully selected airstrips in the headwater areas as the primary means of access to the Charley River and its immediate environment. Construction of roads within or crossing the river environment upstream of the vicinity of Bonanza Creek would not be permitted. A potential highway crossing of the Charley River by the proposed Eagle-Circle "trunk route" downstream from the vicinity of Bonanza Creek can be made in a manner compatible with the proposed classification as a wild river area. However, should the route use the Bonanza Creek valley it may be necessary to reclassify Bonanza Creek as a scenic or recreational river area. The proposed "supplemental route" connecting Eagle



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with the Alaska Highway via Crescent Creek and the Salcha River is incompatible with the proposed action. There are no active plans to construct either highway route. It has not been determined that either route is necessary or feasible.

- d. Boundaries: The proposed Charley Wild River area including its principal tributaries embraces approximately 186 miles of clearwater free-flowing stream.

The "immediate environment" of Charley River and its principal tributaries is defined as the primary visual corridor seen from the surface of the river or stream and the river or stream bank. This generally does not extend further than one mile back from the river. It is proposed that the Congress establish upstream and downstream termini and direct the administering agency to develop lateral boundaries as part of the detailed management and development plans for the river area. About 100,000 acres of public lands (7 percent of the entire 1.4 million acre Charley River basin) warrant serious consideration for inclusion in the Charley Wild River.

- e. When Action Proposed: It is proposed that the administering agency submit to the Congress detailed management and development plans and a description of lateral boundaries within one year after enactment of legislation to include the Charley River and its principal tributaries in the

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## National Wild and Scenic Rivers System.

- f. Authority: The proposed action is in accord with the principles established by the Wild and Scenic Rivers Act, P. L. 90-542, and the Alaska Native Claims Settlement Act, P. L. 92-203, in that the former.

" . . . 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 a 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 policy of dam and other construction at appropriate sections of rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections of rivers in their free-flowing condition to protect the water quality of such rivers to fulfill other vital national conservation purposes."

Section 17(d)(2) of the latter Act 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 eighty 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 Wild and Scenic Rivers System . . . . "

The Charley River and its immediate environment have been withdrawn under the provisions of the latter Act.

- g. Interrelationships with other Federal, State or local Proposals: The Charley River is listed in the approved Alaska Statewide Comprehensive Outdoor Recreation Plan prepared by the State of Alaska as a free-flowing river identified by the Bureau of Land Management as having potential for inclusion in the National Wild and Scenic Rivers System.

On May 9, 1970, the Bureau of Land Management published notice in the Federal Register of a proposed classification of the 12,450,000 acre "Fortymile unit" under the provisions of the classification and Multiple-Use Act. The Charley River basin in its entirety was included in that proposed classification as an area to remain in Federal ownership and administration under the concepts of multiple-use. The proposed classification was not finalized.

In March 1972 the entire Charley River basin was initially withdrawn by the Secretary of the Interior for potential addition to one of the four national conservation systems listed in section 17(d)(2) of the Alaska Native Claims Settlement Act.

In September 1972 the Secretary of the Interior made final revisions of the March withdrawals. At that time the major portion of the Charley River basin south of T. 5 N., R. 24 E., Fairbanks Meridian, Alaska, was redesignated as public interest lands to remain under the Bureau of Land Management as provided for in section 17(d)(1)

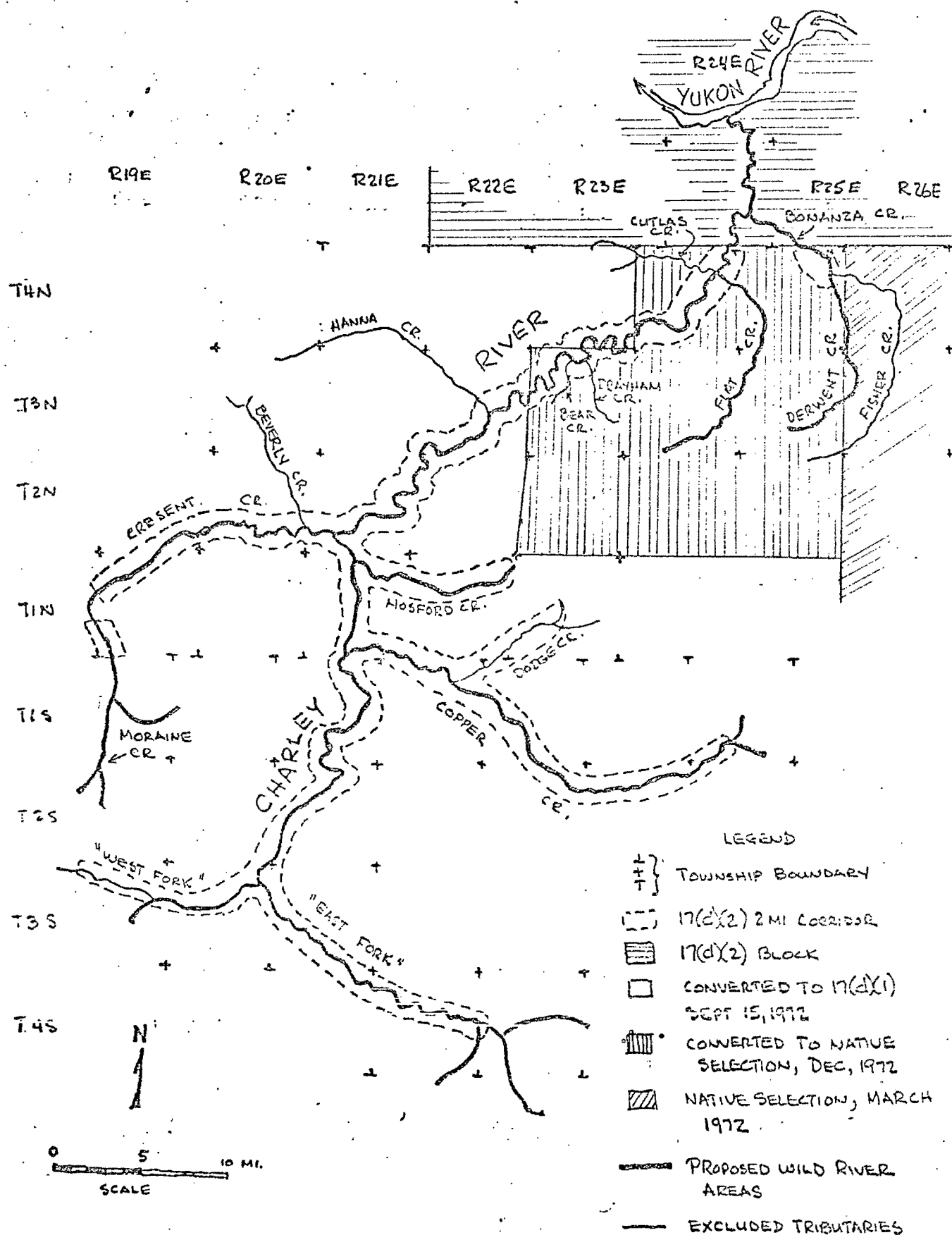
In December 1972 portions of five townships in the middle portion of the Charley River basin withdrawn under the provisions of section 17(d)(1) were redesignated as being suitable for selection by the Native Regional Corporation. The December 1972 redesignation specifically retained the September 17(d)(2) withdrawal along the Charley River (figure 2).

Congress, with the advice of the Federal-State Land Use Planning Commission and the State of Alaska will determine ultimate management responsibilities of the public resources in the Charley River basin. The Bureau of Land Management presently is responsible for the entire area. Potential future Federal public resource managers of this area also include the Forest Service and the National Park Service.

Should Congress approve inclusion of the Charley River in the National Wild and Scenic Rivers System as Federally managed area, it is proposed that primary administration be assigned to the agency responsible for the adjacent area; i.e., Bureau of Land Management should the present

FIG. 3 LAND STATUS, CHARLEY RIVER, ALASKA

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17(d)(1) withdrawals not be rescinded; the Forest Service if a national forest is authorized, or the National Park Service should the area be added to the national park system. It is conceivable that there would be two Federal land managing agencies involved should the 17(d)(2) withdrawal along the Yukon River between Eagle and Circle be added to the national park system while the major portion of the Charley River basin is retained in the public domain or added to the national forest system. The Environmental Protection Agency would be involved with those uses of land and water affecting water quality; whereas the State of Alaska would be responsible for administration of hunting, fishing and trapping activities. Should the Native Regional Corporation select lands in the middle Charley River basin withdrawn for such purposes, that agency may wish to cooperate in the administration of the proposed Charley River component of the National Wild and Scenic Rivers System.

A significant alternative use of a portion of the lower Charley River area involves the potential Woodchopper hydroelectric project on the Yukon River located downstream from the mouth of the Charley River. If constructed, the Woodchopper project would inundate the lower 20 to 25 miles of the Charley River and most of Bonanza Creek.

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- h. Assessment of the Value of the Area as a Recreation Resource Before and After Implementation of the Proposed Action: The proposed program envisions that there will be an overall increase in the availability and public use of a high quality natural environment having little evidence of man's activity. Without the program the overall accessibility is not expected to change, but only a slight increase in present levels of use could have adverse environmental impacts.

The Charley River has been identified by the Bureau of Outdoor Recreation as one of forty Alaskan rivers (figure 4) having high potential for inclusion in the National Wild and Scenic Rivers System. Of these forty select Alaskan free-flowing rivers, fifteen (including the Charley River) are located within the 220,000 square mile Alaskan portion of the Yukon River drainage. In the close proximity of the Charley River are the following select river areas:

Yukon River between the United States-Canadian border and Circle;

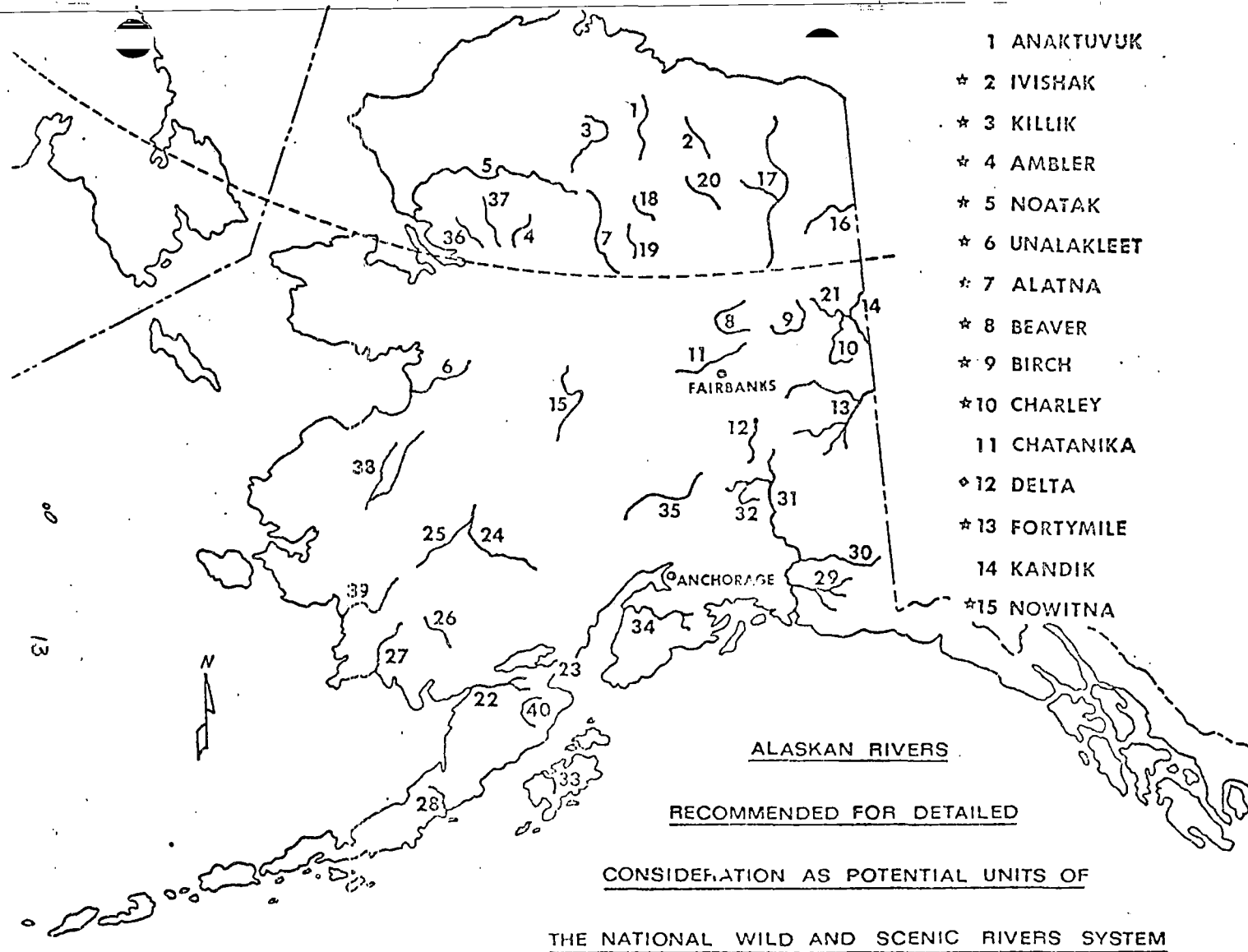
Kandik River;

Fortymile River;

Birch Creek; and

Beaver Creek

The range and quality of recreation opportunities of



- |                 |  |
|-----------------|--|
| 1 ANAKTUVUK     | * 16 PORCUPINE                           |
| * 2 IVISHAK     | * 17 SHEENJEK-KONESS                     |
| * 3 KILLIK      | * 18 TINAYGUK                            |
| * 4 AMBLER      | 19 WILD                                  |
| * 5 NOATAK      | * 20 WIND                                |
| * 6 UNALAKLEET  | * 21 YUKON                               |
| * 7 ALATNA      | * 22 ALAGNAK                             |
| * 8 BEAVER      | * 23 COPPER (ILIAMNA)                    |
| * 9 BIRCH       | 24 HOHOLITNA                             |
| * 10 CHARLEY    | 25 HOLITNA                               |
| 11 CHATANIKA    | * 26 NUYAKUK                             |
| * 12 DELTA      | * 27 TOGIAK                              |
| * 13 FORTY MILE | * 28 ANIAKCHAK                           |
| 14 KANDIK       | * 29 BREMNER                             |
| * 15 NOWITNA    | * 30 CHITINA                             |
|                 | * 31 COPPER                              |
|                 | * 32 GULKANA                             |
|                 | 33 KARLUK                                |
|                 | 34 KENAI-RUSSIAN,<br>SWANSON R.-SWAN LK. |
|                 | 35 SUSITNA                               |
|                 | * 36 SQUIRREL                            |
|                 | * 37 SALMON                              |
|                 | * 38 ANDREAFSKY                          |
|                 | * 39 KANEKTOK                            |
|                 | * 40 AMERICAN CREEK                      |

BOR, OCTOBER, 1972

\* ALL OR SUBSTANTIAL PORTIONS CLASSIFIED UNDER 17(d)(2) OF ANCSA, SEPT. 1972

\* RIVERS WHERE DETAILED STUDIES HAVE BEEN REQUESTED

FIGURE 4 ALASKAN RIVERS HAVING HIGH POTENTIAL FOR INCLUSION IN THE  
 NATIONAL WILD & SCENIC RIVERS SYSTEM

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the Charley River--both existing and potential--are not duplicated in any of the forty rivers.

The approved Alaska Comprehensive Statewide Outdoor Recreation Plan notes:

"Rarely is a nation afforded a second opportunity to plan for the recreational use of its natural resources before commercial exploitation imposes severe constraints. Alaska, however, provides such an opportunity, and perhaps this nation's last chance to prove that compatible development of natural resources for both recreational and commercial purposes is possible. While most of the rest of the nation is struggling with problems of environmental pollution and overcrowding, Alaska is in the enviable position of planning to avoid these problems before they arise."

Trail-related activities in Alaska have been found to constitute by far the most popular recreational pursuit. The State of Alaska estimates that by 1980 trail-related activities -- a form of outdoor recreation in which 83 percent of residents and nonresidents participate--will increase by 249 percent above the 1967 demand for such activities. The State further anticipates that trail-related activities will maintain its top ranking as the most popular activity. Included in "trail-related" activities are canoe trails.

A total of 399 miles of "formal" canoe trails are listed in the Alaska Comprehensive Statewide Outdoor Recreation Plan with an estimated increase of an additional

227 miles of canoe trail needed by 1975. The term "formal" is misleading in that there are no specific State or local plans or programs to protect or manage these resources. In fact, the vast majority of the identified "formal" canoe trails are located on Federal land. The Charley River was not included in the 399 miles of "formal" canoe trail.

The Charley River is an intermediate sized, clear-water stream flowing through an area with little evidence of man's activity. The river offers outstanding whitewater outdoor recreation potential for the experienced canoeist or kayaker. There are frequent rapids where large boulders choke the river channel. On the International Difficulty Rating, whitewater characteristics are class II and III for an open, loaded canoe. Maneuvering ability is mandatory with good probability for loss of equipment if a boat overturns. There are no major hazards to the prudent boater. The view from the river is excellent with good possibilities for close contact with wildlife populations -- especially Dall sheep. The geology is interesting and provides excellent opportunities for interpretation. Overall, the river and river bank provide excellent opportunities for a boater or hiker to enjoy outdoor recreation in a very high quality, natural environment.

Present recreation use of the Charley River is very light and probably does not exceed 50 to 75 activity days

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annually. Heaviest use is associated with sport hunting for moose and Dall sheep in the lower and middle portions of the Charley River area. There is also some subsistence hunting and fishing in the lower river area and some trapping also takes place. The extent, type and location of existing recreation and subsistence use in the project area is a direct function of the inaccessibility of the entire Charley River basin. Therefore, these uses are expected to continue into the foreseeable future at about the same levels. The existing high quality of the experience, however, can be significantly lowered with only a modest increase of unplanned use. For example, construction of an overland access trail into the headwater areas or development of an airstrip too near critical wildlife habitat could have pronounced adverse effects. Under existing conditions it is estimated that outdoor recreation use would not exceed present levels of about 100 activity days which are primarily associated with hunting.

The proposed action would emphasize protection of the existing high quality of the water in the Charley River and protection of the high, scientific, scenic, recreational, geologic, and fish and wildlife values of the Charley River and its immediate environment. It is proposed that overall recreation use not be permitted to exceed the capacity of the resources of the Charley River and its

immediate environment to provide a high quality outdoor recreation experience in a setting with only little evidence of man's activity. It is estimated that the annual recreation use of the river and its immediate environment should not exceed 800 activity days of canoeing, 680 activity days of primitive camping and 310 activity days of hiking. if the river area is to maintain its existing high quality and evidence of man to remain minimal. Hunting, fishing and trapping would continue to be managed by the State of Alaska. Except for hunting of moose and fishing, such uses are not expected to undergo any significant increase as seasons are established on the basis of maintaining big game populations in balance with its critical habitat. Both moose hunting and fishing could be increased as present levels are light in terms of resource availability.

Most of the hunter harvest information is reported for unspecific locations along the Taylor Highway and Yukon River. However, with respect to the Charley River and adjacent Yukon River, at least four registered guides spent all or portions of the hunting season in the area.

Black and grizzly bear both occur in the area. Hunter harvest for both bears is often incidental to hunting for other big game species.

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The numbers of Dall sheep hunters vary greatly from year to year and may be related to water level in the Charley River. Access to the major sheep areas is generally via boat navigation, even at higher water levels, is difficult at best.

The following represents a summation of available hunting information<sup>1/</sup> These data reflect only minimum levels and there are no good estimates for the total number of sport hunters and no measure of native use:

	1968	1969	1970	1971	1972
Number of sheep hunters <sup>2/</sup>	29	6	9	26	11
Sheep harvest	7	0	3	9	4
Moose harvest (Charley R.)			0	0	
Caribou harvest (Charley R.)	-----unknown-----				
Wolf harvest (Charley R.) <sup>3/</sup>				4	
Wolverine harvest (Charley R.) <sup>3/</sup>	-----unknown-----				

Benefits from implementation of the proposed program would accrue at three levels: local, State and National. At the local and State levels management and development of the Charley River and its immediate environment as a component of the National Wild and Scenic Rivers System

<sup>1/</sup>Personal communication, Alaska Dept. of Fish & Game.

<sup>2/</sup>Charley R., Twin Mtn., Mt. Sorenson, Seventymile R., Glacier Mtn., Kandik R., Tatonduk R., and Nation R.

<sup>3/</sup>1971-72 Regulatory Year. Includes both trapping and hunting.

would assure continued availability of existing high quality outdoor recreation opportunities including hunting, fishing and trapping. In addition, activities such as whitewater canoeing and hiking in an environment with little evidence of man's activity would be enhanced. The proposed action also would help assure perpetuation of the local lifestyle which emphasizes use of a natural environment. Development of recreation activities requiring specialized equipment and transportation enhances the opportunity for local residents to gain economic benefits by providing guiding and rental services. This in turn would provide economic benefits to the State through increased visitation and longer stays by people attracted by the challenging outdoor recreation opportunities offered by the Charley River.

Benefits to the Nation would accrue through protection, management and development of an outstandingly remarkable free-flowing river and its immediate environment as a unit of the National Wild and Scenic Rivers System for the enjoyment and use of present and future generations. The special qualities of the Charley River area are not duplicated in the existing or proposed system of free flowing rivers. National benefits are primarily intangible since only a very small number of people are expected to actually use these resources because of the distance from

major population centers and the need to maintain human use in balance with the capability of the resource.

i. Uses of Resources Foregone or Curtailed Should the Charley River and its Immediate Environment be Added to the National Wild and Scenic Rivers System: A

significant resource potential foregone would be the development of the hydroelectric power of the Woodchopper site on the Yukon River. The proposed Woodchopper project would inundate about 200 miles of the Yukon River between Woodchopper Creek and the vicinity of Dawson, Yukon Territory, Canada. Estimated firm power potential of the Woodchopper project at a pool elevation of 1,020 feet m.s.l. is 2,160,000 kilowatts at a 75 percent annual load factor and a firm energy production of 14.2 billion kilowatt hours. A significant portion of the potential Woodchopper project is in Canada. Accordingly, international negotiations would be required to develop the maximum hydroelectric power potential. The extent to which such a reservoir program is compatible with Canadian plans for the affected portion of the Yukon River is unknown. Preliminary construction costs for the project, exclusive of environmental aspects, is \$1.7 billion<sup>1/</sup>; while revenues from the sale of power are estimated to be about \$100 to \$150 million per year at an average cost of from 7 to 10 mills per kilowatt hour. Development

---

<sup>1/</sup>Costs are on an October 1965 base price. All data related to the project are preliminary approximations for inventory purposes.

of the hydroelectric power potential of the Woodchopper site would need to consider the following aspects:2/

1. It is probable that a substantial portion of the anadromous fish runs that pass the Rampart site also pass the Woodchopper site.
2. The reservoir area of the Woodchopper project also includes excellent wintering habitat for a high density moose population.
3. Significant portions of the Steese-Fortymile caribou herd cross the potential reservoir area in their migrations to and from Canada.
4. There would be moderate to significant impacts to waterfowl, furbearing and game animals other than moose and caribou.

In addition, the Woodchopper Reservoir would flood Eagle causing a relocation of Native and non-Native residences and drastically alter the life style of these people as well as destroy significant portions of the Charley, Kandik, and the Yukon River -- all of which have high potential for inclusion in the National Wild and Scenic Rivers System. Also destroyed would be sites associated with the settlement and development of Alaska and Canada having national and international historic significance. It is probable that significant and critical

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2/Rampart Project, Alaska, 1965. USDI Field Committee Report.



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nesting habitat in the Woodchopper reservoir area for the rare peregrine falcon would be adversely affected by construction of the proposed hydroelectric project.

There are substantial environmental, economic, and international uncertainties about the development of the Woodchopper hydroelectric project. Accordingly, it appears unlikely that designation of the Charley River as a component of the National Wild and Scenic Rivers System realistically foreclose future options of the Congress to develop the maximum hydroelectric potential of the Yukon River at the Woodchopper site.

Subject to existing valid rights, extraction of minerals within the bed of the Charley River and its immediate environment would be foregone. Extraction of minerals where existing valid rights occur may be curtailed by regulations to prevent pollution of the water and unnecessary impairment of the scenery. There are no known mineral deposits in the river bed or its immediate environment which have in the past or are now being developed. There are no known plans for future mineral developments.

Harvest of timber in the immediate environment of the Charley River for uses other than recreational, reconstruction of cabins associated with trapping and

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perhaps construction of new trapping cabins would be curtailed.

Commercial harvest of timber within the immediate environment of the river would be foregone.

Construction of roads within the river corridor upstream from the general vicinity of Bonanza Creek would be foregone. Unrestricted transportation by all-terrain-vehicles for recreation use within the river corridor will be curtailed by regulations to protect the people using the area, the river and its immediate environment. Unregulated construction of airstrips would be foregone.

Permanent occupancy within the immediate environment of the Charley River would be foregone. There are no permanent residences at this time and only two (with possibly a third) cabins which are used periodically for hunting and trapping. Construction of new cabins would be curtailed.

## III.

DESCRIPTION OF THE ENVIRONMENT

a. Existing Environment and Resource Uses: The Charley River is a geologically youthful, clearwater, intermediate sized stream dashing northward some 88 miles to join the more placid, silt-laden Yukon River. Three categories of streams are included in the proposed Charley Wild River:

- (1) Small, shallow and occasionally braided streams with attractive tree bank forests; valleys open, flanked with rounded hills -- Charley River above Crescent Creek, upper portions of Crescent Creek and most of Copper Creek.
- (2) Larger deeper streams, with depths to 10 feet and widths up to 25 yards; valleys narrow alternating between steep rock bluffs and forested slopes -- Charley River from Crescent Creek to Bear Creek including the smaller Hosford Creek. and the lower portion of Crescent Creek as well as the headwater areas of Flat and Derwent Creeks.
- (3) Meandering streams with depths to 15 feet and widths to 30 yards flanked by black spruce and muskeg -- Charley River from Bear Creek to Yukon River; Bonanza Creek and the lower end of Flat Creek.

Current is swift. The Charley River cascades from an elevation of about 4,000 feet to 698 feet where it joins

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the Yukon River. Excluding small headwater streams, the average gradient is about 31 feet per mile. Gradient is relatively uniform with no falls.

Boulders and rounded cobbles 12 to 14 inches in diameter form most of the stream bed in the drainage above Bear Creek. Downstream from that point smaller gravels in the 1 to 3 inch class and an occasional sand bar begin to appear. Although there are no major outcrops of bedrock in the river channel, large, random and frequent deposits of rounded boulders create considerable challenge to the user of small boats.

The Charley River is an outstanding whitewater boating stream offering good challenge to the experienced boater. The ratio of pools to riffles is excellent with few pools in the upper two-thirds. Long meandered pools separated by gravel bars predominates in the lower one-third.

Under criteria being developed by the State of Alaska to determine stream bed ownership, the Charley River would appear to be "navigable" from its confluence with Yukon River at least to Copper Creek and perhaps upstream from that point. A careful review of available information, however, points out that it is most unlikely that the Charley River has been used as a "navigable" stream in terms of movement of commerce or trade. Until the recent advent of the water jet attachment for the outboard motor,

upstream navigation by watercraft was precluded by the swift current and shallow, rocky character of the stream bed. As there are no surface access points to the headwater areas except for foot travel, it appears unlikely that there has been significant amount of downstream travel by raft or canoe.

Information on water quality is lacking. It is assumed that the overall water quality is excellent as there are no roads, mining, permanent residences, timber harvest or other activities of man in the Charley River basin which could adversely affect the water quality. The stream is exceptionally clear and individual leaves and stones may be easily observed on the stream bed through fifteen feet of water. Downstream from the confluence of Bonanza Creek, water draining adjacent muskeg areas may take on a dark brownish color. This is caused by the formation of tannic acid as water flows through the peaty soils overlaying the permafrost.

Water temperatures are cool -- probably too cool for swimming. Low water temperatures, however, are reported to be conducive in prolonging the life of pathogenic organisms. Accordingly, indiscriminate disposal of waste materials as future human uses increase in the Charley River basin can cause serious water quality and health problems.

The climate of the Charley River basin is typical of interior Alaska in that winters are long and severe with short days while summers are pleasant with long days. Extended periods of intense cold with temperatures of  $-50^{\circ}$  and  $-60^{\circ}$  F. are common during the winter. Annual summer temperatures reach  $+80^{\circ}$  F. and occasionally reach  $+90^{\circ}$  F. Although summer daytime temperatures are almost always above  $70^{\circ}$  F. there is rapid cooling as the sun passes its zenith. Freezing temperatures can occur during the summer months. In a typical year there are 53 days when temperatures reach or exceed  $+70^{\circ}$  F.; 255 days with  $32^{\circ}$  F. or less; and 125 days with temperatures at or below  $0^{\circ}$  F.

The Charley River begins to freeze up in October and by December is completely clothed in ice. Break-up is rapid and generally occurs in mid-May. Annual precipitation is about 11 inches of which about 30 percent falls as snow. Snow can occur above an elevation of 4,000 feet during each month. Thunderstorms are common during June and July.

There are no glaciers or permanent snowfields in the Charley River basin. Permafrost, however, is present throughout most of the area. In fine grained soils permafrost starts at a depth of two or three feet while in coarse grained materials permafrost starts at a depth of about ten feet. Ice lenses five or six feet thick are

exposed in the muskeg stream banks of the Charley River in the vicinity of Bonanza Creek.

Soils are generally shallow and rocky throughout the Charley River basin. There is no marked flood plain along the river until the vicinity of Flat Creek where substantial muskeg areas occur. Unless disturbed by fire or man soils are relatively stable. However, where steep slopes occur along the river's edge soils are unstable and subject to slumpage when disturbed by man or fire. Parent bedrock in the upper three-quarters of the basin is granite. The remainder is sedimentary overlain with varying thickness of river terrace gravels and silts.

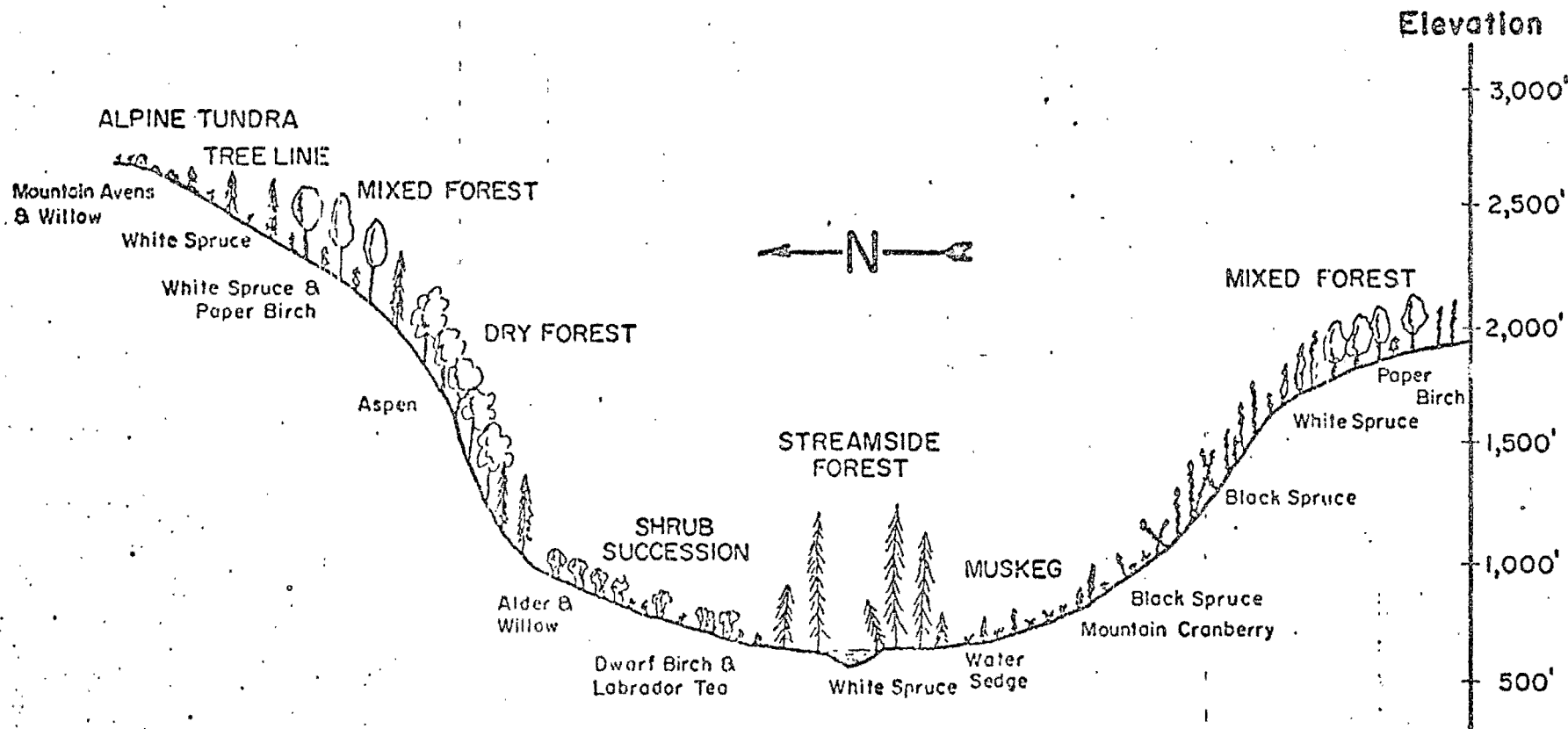
Vegetation within the Charley River basin ranges from alpine tundra to white spruce-paper birch forests. These are especially noteworthy because existing plant communities reflect little evidence of man's activity.

Plant associations within the basin and especially the immediate environment of the river are varied. The mosaic of patterns is pleasing to the eye in that there is a constant variety which locally reflect past fire history, slope, aspect and the presence or absence of permafrost (figure 5).

Alpine tundra consists of bare rocks and frost-heaved rubble interspersed between low mat herbaceous and shrubby plants. Typical plants include alpine bearberry, white

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FIG. 5 DIAGRAM OF VEGETATION TYPES ALONG A TOPOGRAPHIC GRADIENT IN THE CHARLEY RIVER, ALASKA



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mountain-avens, alpine, azalea, dwarf and bog blueberry and mountain-cranberry. Also found are moss-campion and several sedges and grasses. This vegetative type occurs in the headwater areas and at elevations above 3,000 feet.

Closed spruce-hardwood is the dominant forest type along the Charley River drainage. White spruce stands are found on the warm, dry, south-facing slopes where drainage is good and permafrost is lacking or not close to the surface. Associated with white spruce are paper birch, balsam poplar, bearberry, red current, prickly rose, several willows, mountain-cranberry and bog blueberry.

Because of the relatively small sized burns caused by lightening and the lack of any major activities by man in the Charley River basin, the succession of plant communities offers outstanding opportunities for scientific study to determine how to best manage interior Alaska forests as well as how to promote development of natural resources with minimum environmental impacts.

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 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

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spruce in all but the driest 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 first 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.

In addition to the above plant communities, the Charley River drainage has locally well developed stands of the balsam poplar type, open-black spruce and flood plain thickets.

The balsam poplar type reaches its greatest size and abundance on flood plains. Other important plants associated with this type are alders, black cottonwood, willows, prickly rose and high bushcranberry.

Open, black spruce forests are found on north-facing slopes and poorly drained lowlands where permafrost is close to the surface. A thick moss mat, often of sphagnum mosses, sedges and grasses. Also found is tamarack.

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Flood plain thickets grow on nearly exposed alluvial deposits which are periodically flooded. The main dominant shrubs are willows and sometimes alders, American red raspberry, and prickly rose. This type is primarily confined to the general vicinity of the confluence of the Charley River with the Yukon River. In addition to the normal arctic plant communities which a traveler would expect to encounter, the dry, steep rock south-facing slopes of the Charley River provide localized environments favorable for sagebrush growth.

The Institute of Northern Forestry has identified as having high value for scientific study the following plant communities in the Charley River:

Alpine tundra; flood plain white spruce and successional stands of balsam poplar and black cottonwood; upland forests of spruce, aspen, birch; and black-spruce-tamarack.<sup>1/</sup>

In addition to scientific, aesthetic and wildlife values, the natural vegetation in the Charley River basin is extremely important in maintaining water quality and a stable watershed. Dense ground cover of grasses, mosses, shrubs and trees retards surface runoff and insulates the underlying permafrost.

White spruce, aspen, birch and balsam poplar have

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<sup>1/</sup>Jan 14, 1972. A proposal for an Ecological Reserve System for the Tiaga and Tundra of Alaska.

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commercial value. However, the topography, difficult access and small size of timber stands associated with the Charley River suggest little likelihood for economic development. In the past a few trees have been cut for construction of hunting, trapping and prospecting cabins and for related use as fuel. As there are no permanent residences within the river corridor it is doubtful that there is any significant need for substantial harvest of timber for cabin construction or for fuel.

The geology of the Charley River basin is not unusual or overly complex. Except for localized areas of alpine glaciation, the basin is unglaciated. Moraine Creek, a tributary to Crescent Creek flows through a beautiful U-shaped valley formed by a small valley glacier. Well developed moranic deposits at the lower end of this valley offer good opportunity for interpretation.

The upper two-thirds of the basin is carved into a large granitic batholith. Here drainage patterns tend to reflect the underlying batholith. The lower one-third first crosses the Tintina fault and then flows through the Tintina Valley where it joins the Yukon River. Underlying rocks in the lower one-third are highly deformed, easily eroded sedimentary rocks which except for the river banks are frequently buried under thick layers of terraced gravels deposited in the prehistoric Yukon River valley.

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Sport fishing is considered only fair. Sheefish are found at the mouth of the Charley River, while king and chum salmon are found in the lower 8 to 12 miles. Grayling and round whitefish are found throughout.

Wildlife resources of the Charley River basin are substantial.

The Steese-Fortymile caribou herd frequents the entire drainage at one time or another. Since 1965, this herd has remained in the common headwater areas of the Charley, Goodpasture and Fortymile Rivers. During the summer the herd is scattered throughout the Tanana Hills, primarily in the alpine and subalpine hills and mountains in the headwaters of the Chena, Salcha, Charley, Goodpasture and Fortymile Rivers. In September, the herd gradually drifts southwestward toward the wintering grounds.

The Fortymile herd is one of the major caribou herds in Alaska. At the same time it has been called the most unpredictable because of frequent major changes in calving, wintering and migratory patterns over the last 20 to 30 years. At one time the herd reportedly numbered over 500,000 caribou. Today the herd is estimated at about 15,000. Estimated harvest in 1971 was 2,500 caribou. In 1972 about 1,200 were taken by hunters. A preponderance of the hunting pressure is focused at existing road

accessible areas such as along the Taylor Highway to the east. Accordingly, very little, if any of the hunter harvest took place in the Charley River drainage.

Caribou winter range is located in the upper Charley River drainage to the south of Copper Creek and in the middle portions between Hosford and Cutlas Creek. The river valley is also a primary migration route in both spring and fall.

Calving grounds are located in the headwater areas of adjoining river basins to the south and southwest of the Charley River.

A primary requirement for continued maintenance of the Fortymile caribou is for large areas of climax range and unrestricted movement.

Another major wildlife species in the Charley River drainage is Dall sheep. Approximately 200 Dall sheep reside in the Charley River basin. Little specific information is available on these sheep. However, it is noted that the Dall sheep in the Charley River are different from other populations in adjacent areas in that the Charley River band is often found on the bluffs overlooking the river between Flat Creek and Hosford Creek. The Alaska Department of Fish and Game<sup>1/</sup> noted:

"The Charley River . . . should receive special consideration in land use planning. It is one of

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<sup>1/</sup>Jan 1973. Alaska's Wildlife and Habitat

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the few, if not the only, river in Alaska that supports a population of Dall sheep just above its banks during summer months. River boaters and canoeists utilize the area for recreation and sport hunters take several sheep from this area annually."

The most important habitat requirement for Dall sheep seems to be acceptable winter climate. Sheep depend upon cold temperatures, wind and moderate snowfall. Natural mineral licks also may be important. Cliffs and rugged rock outcrops are necessary sanctuaries from predators. Sheep have tolerated man's activities in close proximity to their ranges in some parts of Alaska. But intensive use of actual sheep habitat could prove detrimental as sheep are relatively inflexible. Any use interfering with or preventing use of specific areas such as the cliffs overlapping the Charley River result in substantial reduction or complete elimination of the Charley River band.

Moose, wolves, wolverine, black bear and the brown-grizzly bear, are distributed throughout the area. Small game and fur animals are similarly distributed.

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

American peregrine falcon (Falco peregrinus anatum) -- rare

Timber wolf (Canis lupus lycon) -- endangered  
(only in conterminous 48 States)

Grizzly bear (Ursus horribilus) -- endangered  
(only in conterminous 48 States)

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Wolverine (Gulo luscus) -- status undetermined

Canada lynx (Lynx canadensis) -- status undetermined

American osprey (Pandion haliaetus carolinensis) -- status undetermined

In addition the northern bald eagle (Haliaeetus l. alascanus) is frequently observed and is known to nest along the banks of the Charley River. Although similar in overall appearance, the northern bald eagle is not the same as the endangered southern bald eagle.

Critical nesting habitat for the northern bald eagle and osprey and cliffs used for nesting by the American peregrine falcon will require special consideration in future resource uses along the Charley River.

Studies summarized by Foster and Yount<sup>1/</sup> unquestionably show that at least the upper two-thirds of the Charley River basin is mineralized. Geochemical analysis of rock and water samples show the presence of tin, copper, silver, gold, nickel, lead, molybdenum, zinc, and other metals. However, when considering the known gold production and early, intensive development of mineral deposits in the adjacent (1) Seventymile and Fortymile River basins and the Fourth of July Creek all to the east and southeast, and (2) active mining operations on Coal and Woodchopper Creeks 15 to 20 miles to the west, it appears unlikely that

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<sup>1/</sup>1972. Miscellaneous Field Studies, U.S.G.S., MF-356. Map Showing Distributing of Anomalous Amounts of Selected Elements in Stream-Sediment and Rock Samples, Eagle Quadrangle, Alaska.



the river corridor contains mineral deposits of economic consequence.

A small portion of the lower Charley River overlaps the Kandik Basin Province. That area may be prospectively valuable for oil and gas. The extent of the Kandik Basin Province is very limited insofar as the Charley River is concerned and its status or prospective value is unknown.

Information on active or past mining activities in the Charley River and its immediate environment is scanty.

Mertie<sup>1/</sup> in 1938 summarized the mineral status when he noted:

"Some gold was found on Irish Gulch and Drayham Creek, tributaries of the Charley River, but in general the Charley River within the Tertiary belt, has not produced any considerable amount of placer gold."

In a broad way, historic mineral production data -- especially gold -- is indicative of potential economic mineral values. As indicated above there is no indication of substantial economic mineral values in the bed of the Charley River and its immediate environment. Coal has been reported to outcrop on Bonanza Creek. There are no active or patented mining claims in the Charley River basin, but a group of 13 lode claims (probably for copper and tungsten) were staked in 1970

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<sup>1/</sup>USGS Bull. No. 917, Mineral Resources of Alaska -- Tertiary Deposits of the Eagle-Creek District, Alaska.

along the north bank of Copper Creek about seven miles upstream from the confluence of the creek with the Charley River. In 1968, six gold placer claims were located in the same general vicinity.

There are no known plans to develop mineral deposits in the Charley River basin.

Transportation within the Charley River basin is almost nonexistent. It is possible to proceed upstream by small boat from the Yukon River as far as Copper Creek when water conditions are just right -- which is not too often. Above the general vicinity of Bear Creek considerable punishment is given a powerboat by the abundance of barely submerged boulders. There is no surface transportation network for motorized vehicles.

A primitive bush airstrip provides marginal access for small fixed-wing aircraft to the general vicinity of the mouth of Copper Creek. Gravel bars are not suitable for safe landings and the river is generally too shallow and tortuous for landing float planes and there are no lakes large enough to safely accommodate float planes. Helicopter landing sites are abundant.

In 1958 and 1959 a potential road connecting Eagle and Circle along the south side of the Yukon River has been considered by Donald Belcher & Associates, Ithica, New York. The preliminary route selected in that study

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would require construction of a road down Bonanza Creek and a bridge crossing the Charley River about one mile downstream from the confluence of Bonanza Creek. The status of this proposal is not known; however, it is believed that such a road crossing could be made in a manner environmentally compatible with the proposed designation of the Charley River as a component of the National Wild and Scenic Rivers System.

In January 1973 the Alaska Department of Highways indicated the long-range potential of an Eagle-Circle highway and also identified a proposed supplemental highway connecting Eagle to the Alaska Highway via the Crescent Creek drainage and then into the Salcha River drainage. The supplemental route is not compatible with the proposed designation of the Charley Wild River.

The historic and cultural aspects of the Charley River basin reflects the fact that today there is little evidence of man's activities. The name Charley River appears to be derived from Charlie Village, a former native settlement a few miles upstream on the Yukon River at the mouth of the Kandik River (Charley Stream). There are no known historic or cultural sites along the river.

Today the Charley River and its immediate environment show little evidence of past use by man. Early topographic maps prepared by Prindle (U.S.G.S.) and others prior to

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1910 and reports by Mertie as late as 1938 show no trails, telegraph lines, mining operations or cabins in the Charley River basin. Ruins of cabins noted on the 1965 editions of 1:63,360 scale topographic maps in the tributary areas of Copper and Hosford Creeks and a few ruins are located along the river downstream from Copper Creek. Whether these cabins reflected past mining explorations, trapping or hunting camps is not known. There are two known cabins which are capable of habitation: at Bonanza Creek and near the mouth of the Charley River; a third is reported to exist near Crescent Creek. These are used intermittently for hunting camps.

It is probable that some subsistence hunting and fishing by Natives and local residents occurs in the lower Charley River which is accessible by boat from the Yukon River. The extent of subsistence hunting and fishing, if any, is unknown.

Trapping has in the past occurred in the drainage area of the Charley River. The extent of present trapping use is unknown.

- b. Probable Future Environment Without Implementation of the Proposed Charley Wild River: Existing human and wildlife uses of the Charley River basin are primarily controlled by the absence of access.

Without implementation of the proposed Charley Wild

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River it is expected that overall access will not be changed. It is expected that there will be a modest long-term gain in recreation use of the public resources of the Charley River and its immediate environment.

Although future increases in recreational and human use of the river area is anticipated, the level of use will be less than the optimum capacity of the existing untrammelled resources to sustain a high quality experience with little evidence of man's activity.

It is probable that any significant increase above the existing low levels of human use could have severe adverse environmental impacts. For example, litter such as gas cans, bottles, paper boxes, aluminum pull-tabs, plastic, polyethylene sheeting and aluminum foil are just now beginning to collect and increased use without adequate sanitation precautions to protect water quality from human excrement can pose health hazards.

A major aspect of increased human use is associated with the increased probability of fire which would destroy climax vegetation thereby adversely affecting big game populations and distribution.

Unregulated use of all-terrain-vehicles could cause serious damage to plant communities and thereby adversely affect water quality by increasing erosion. This is especially true of tracked and wheeled all-terrain-vehicle

use during the summer and fall and snow machines when there is inadequate snow cover to protect low growing plant communities.

Unregulated use of powerboats could cause safety hazards for their users and users of nonmotorized boats.

Physical exploration or development of minerals in the stream bed or the immediate environment could significantly alter the existing natural visual environment, adversely affect water quality, impinge upon critical habitat for Dall sheep or caribou and adversely affect nesting sites for rare and endangered species.

A major unknown factor is what, if any, impact noise caused by operation of motorized equipment would have on other resource users and wildlife populations.

Any new development or use public resources in the river bed or immediate river environment could significantly alter the present untrammelled environment. This, combined with development of unplanned access into the basin, would eliminate any realistic chance to obtain good scientific base data for improved management and development of resource areas in subarctic conditions throughout Interior Alaska.

In summary it is probable that the existing high quality natural environment of the Charley River cannot be maintained for future generations without intensive management of these resources. It is further noted that

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the Charley River is the only significant remaining untrammelled resource area along the Yukon River between the U.S.-Canadian border and Circle where there is any substantial opportunity to make a choice of how and when to develop natural resources to the overall long-range benefit of local residents, the State and the Nation.

## IV.

ENVIRONMENTAL IMPACT OF THE PROPOSED ACTIONa. Direct or Indirect Changes in the Existing Environment:

The primary impact of the proposed Charley Wild River will be to preserve and protect the existing environment for the use and enjoyment of future generations. Through this action a planning procedure would be implemented that would assure a coordinated, thorough analysis of specific existing conditions and probable environmental changes before a new use or development of local resources is permitted.

In addition, management programs to provide better public access and sanitation while reducing litter and forest fires will keep increased human use in balance with the primary objective of maintaining the existing high qualities of the Charley River and its immediate environment.

Existing water quality and critical habitat for wildlife would receive priority attention. Greatest concern for wildlife populations would be for Dall sheep, caribou and rare or endangered species.

b. Direct or Indirect Changes Upon Existing Economic or Social Conditions: There are no known adverse effects upon existing economic or social use of the Charley River area.

Long-range benefits should accrue, however, to local and State residents who may depend upon the fish and



wildlife resources of the Charley River area for subsistence purposes. As hunting, fishing and trapping would remain under the jurisdiction of the State, subsistence and sports aspects would probably remain at about present levels.

Substantial portions of adjacent river basins to the south and east of the Charley River basin have been withdrawn for potential Native selection. When these lands are transferred into private ownership it is expected that public use of these lands will be concentrated on the remaining public areas such as the Charley River basin. This concentration of public use will: (1) enhance the potential for economic diversification of local residents; and (2) intensify conflicts between recreational uses such as power and nonpower boating, between recreational and extractive uses and between sports hunting and fishing and subsistence hunting and fishing.

Local and State economies potentially would benefit by attracting visitors who would need specialized equipment, transportation and guiding services to use the natural resources of the Charley River and its immediate environment.

The proposed action would place the Charley River into a select, small group of free-flowing rivers throughout the nation. This designation would attract a greater

number of visitors to the local area and the State. Such visitors would be expected to stay longer and contribute a greater amount to the local and State economy because of the specialized equipment and greater time needed to enjoy the river and its environment.

- c. Water Quality: The proposed action is consistent with water quality standards developed under the provisions of the Federal Water Pollution Control Act, as amended. In addition, it is proposed that priority be given to maintaining the existing high water quality of the Charley River and its tributaries.
- d. Water and Air Quality Standards: The proposed action is consistent with the requirements of section 4(a)(1) of Executive Order 11507, Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities.
- e. Use of Off-Road Vehicles: The proposal is in accord with Executive Order 11644 in that the managing Federal agency would develop procedures to provide control and direct use of off-road vehicles (all-terrain-vehicles) to protect public resources, promote safety to all users of the area and minimize conflicts among the various users of the area.

Location of trails or zones where off-road vehicle uses are compatible with other recreation, economic and social uses would also consider harassment of wildlife and disruption of wildlife habitat.

V. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

Environmental impact statements will be prepared before implementation of specific elements such as construction of access facilities for safe aircraft landing in the headwater areas, trails and primitive campground facilities.

The conceptual plan outlining the proposed action proposes that the managing agency, in consultation with the State of Alaska, Environmental Protection Agency and user groups prepare regulations to protect existing water quality and unnecessary impairment of the scenery by existing valid mining operations in the river bed or in the immediate environment of the river's edge.

Similarly the managing agency should prepare regulations providing for the safe and prudent use of powerboat access within the river area and for safe, prudent and environmentally sound use of all-terrain-vehicles for recreation and transportation through the river area.

The managing agency should implement special measures to restrict litter. For example, strong consideration should be given to restricting use of cans, bottles and other nonburnable food and drink containers. A vigorous policy of "bring-out-what-you-take-in" should be pursued.

A positive program to prevent and suppress forest fires will be needed as levels of human use increase.

Primary consideration should be given to location of primitive camping areas where the potential for spread of fire is minimum. This could include designating specific areas or periods when open fires would be permitted.

A positive program to protect critical wildlife habitat from human encroachment is proposed. For example, major alteration of the existing cliff habitat adjoining the Charley River could adversely affect Dall sheep populations and nesting sites for the rare American peregrine falcon. Nest trees for osprey and northern bald eagles should also be identified and protected. Fire suppression will play a dominant role in future wildlife species and abundance as plant succession on burned areas tend to favor moose while climax vegetation favors caribou.

a. Measures to Enhance, Preserve or Protect the Environment:

The proposed action should enhance, preserve and protect the existing untrammelled environment of the Charley River. In addition, it will provide a formal means for all concerned existing and potential users of the area to examine proposed future actions on the basis of how such actions would alter the present environment.

Special emphasis will be given to the need for surface transportation by motorized vehicle in the river's immediate environment upstream from Bonanza Creek. Before

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implementation of surface motorized access to points above Bonanza Creek major consideration should be given to alternative means of transportation. Proposals to construct roads and trails should clearly show impacts of the following:

1. Air and water pollution probabilities;
2. Noise pollution, especially in nearby roadless areas;
3. Long term effect of human population distribution and impacts on existing land and water uses;
4. Long term effect on caribou migration;
5. Long term effect on Dall sheep populations;
6. Long term effect on rare and endangered species of wildlife; and
7. Effects on plant communities having high scientific value.

- b. Research and Monitoring: The Charley River and its immediate environment provide special opportunities to establish reliable bench mark data on subarctic conditions in interior Alaska. Since much of the Charley River basin now reflects little of man's activities, it is possible to scientifically evaluate the existing environment and then measure changes that occur as man's uses increase and new developments of the resources take place. The Charley River, as an outdoor laboratory, can provide

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information on how to better manage and develop public and private resources in subarctic conditions.

A major objective of the proposed action is to provide a high quality outdoor recreation experience which accentuates individual, family or small group activities in a primitive environment. Accordingly, it will be necessary to keep recreation uses within the capability of the resource to provide this type of experience. Careful check of user reactions and the interactions of the recreationists and necessary support facilities such as hiking trails or plant and animal communities will provide the basis for monitoring use.

When natural plant or animal communities begin to show pronounced adverse effects, it is proposed that human use be reduced. For example, if fishing levels increase to the point where the probability of catching fish is not good, it is proposed that the Alaska Department of Fish & Game consider reduction of bag limits rather than starting an intensive fish stocking program to replace natural fish populations with put-and-take hatchery fish.

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VI.

ANY ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT  
BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

With the exception of the foregone hydroelectric power potential of the Yukon River at the Woodchopper site there are no known adverse environmental effects which cannot be avoided.

As noted previously, there are major uncertainties about the feasibility of environmental desirability of constructing the potential Woodchopper project. Should the potential hydroelectric project later be determined economically feasible, adverse environmental impacts associated with that project would have to be weighed against the environmental impacts of generating an equivalent amount of energy by alternative means such as steam by coal, oil, gas or nuclear power, geothermal power or alternative development of another hydroelectric power project elsewhere.

## VII.

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES  
OF MAN'S ENVIRONMENT AND MAINTENANCE AND  
ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The primary benefit from the proposed action would be long-term in that it would assure protection of the existing high quality natural environment for the use and enjoyment of present and future generations.

Extraction of minerals can, with great care, be undertaken in a manner which ultimately returns the river bed and its immediate environment to their approximate present condition. This would involve consideration of such things as: not adversely affecting existing water quality and especially the clarity of the waters of the Charley River and its tributaries; returning the mined materials to their approximate original locations; restoration of original topography; retention of top soil; retention of vegetative screening; and replanting or reseeding the restored area with native plants. Extraction of minerals from the bed of the Charley River and its immediate environment is a short term use of man's environment because mineral resources are not renewable.

Harvest of timber for commercial purposes is unlikely. Although timber is a renewable resource, once harvested the affected land and wildlife change in character, often drastically. The soil erodes, streams become silty and



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fish habitat is affected. Through careful planning permanent alterations of the environment can be avoided. The disruption of previous bird and animal populations however may last a long time -- 20 to 80 years -- before the existing environment is restored. An Anchorage Daily News editorial succinctly summarized the short and long-range aspects of timber harvest as follows:<sup>1/</sup>

"During that period, tourism - the sale of natural beauty, hot dogs and hotel rooms - should continue to gain stature as an important segment of the Alaska economy. Since tourism does not suffer from the same usual impediments here, such as high freight and materials cost that affect other industry development, the state should be cautious about cutting forests that people might pay to see for the next 100 years."

Sport and subsistence trapping, hunting and fishing activities would continue under the present administration of the State of Alaska and therefore there appear to be neither short or long-term gains or losses.

In summary the proposed Charley Wild River emphasizes controlled use of renewable resources while maintaining the existing high quality natural environment. This should be compatible with the objectives of orderly economic growth and development of the local area, Alaska and the Nation. This should also be a contribution to those aspects of the economic and social well being of Natives and other residents of Alaska which require such natural environments to perpetuate their life style.

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1/Feb 28, 1973.

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Resource Planning

## VIII.

ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS  
OF RESOURCES WHICH WOULD BE INVOLVED IN THE  
PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The proposed action does not contemplate any significant foreseeable change in the use of the following public resources: minerals, timber or hydroelectric. Construction of roads or motorized trails along the river upstream from the vicinity of Bonanza Creek also appear unlikely unless the proposed Eagle to Circle trunk route highway is constructed at some future time.

There are no irreversible or irretrievable commitments of the resources associated with the Charley River and its immediate environment. Since an Act of Congress is recommended to assure long-range protection and enhancement of the existing environment, Congress could at some future time decide to use these resources in some other manner than envisioned in the proposed action.

For example, Congress could at some point in the future authorize construction of the potential hydroelectric project and either remove and reclassify the affected portion of the Charley River from the National Wild and Scenic Rivers System. Likewise, Congress might reclassify portions of the proposed wild river area to a scenic or recreational classification in order that mining in the river bed or its immediate environment could take place. Similar action could be undertaken should it become

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imperative that a road network be constructed in the immediate environment of the Charley River and its principal tributaries. It is realized however that there would be reduced probability of significant changes in the future use of public resources should Congress approve implementation of the proposed Charley Wild River.

IX. ALTERNATIVES TO THE PROPOSED ACTION

Several alternatives have been considered. These include: no action; State or local action; different classifications for the entire area or portions thereof; different boundaries; and inclusion in other national conservation systems.

- a. No Action: The alternative of no action was considered and then discarded on the basis that:
- (1) There is good probability that the existing high quality environment would be adversely affected through increased or unplanned human use and method of access.
  - (2) Development of public resources for short-term gain would cause significant adverse environmental impacts and adversely affect existing life style of local residents which depend upon the availability of the existing environment.
  - (3) The only practicable method for assuring future availability of the high quality of the Charley River for the use and enjoyment of present and future generations is to devise a formal plan which provides for careful and thorough review of the environmental consequences of proposed resource development and human use programs

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as a means for determining whether to proceed with such programs.

- (4) The opportunity would be foreclosed to develop an outdoor laboratory to scientifically measure human impacts on undisturbed climax plant communities in a subarctic environment.

b. 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 resource and human 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 Charley River and its immediate environment -- for example, fish and wildlife resources. However, the potential alternative of State or local action was discarded on the basis that:

- (1) 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 Charley River and its immediate environment.
- (2) There are no State or local programs to manage and protect free-flowing river areas in Alaska.

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c. Different Classifications: Strong consideration was given to the possibility of classifying portions or all of the proposed Charley Wild River as either scenic river areas or recreational river areas as defined in section 2(b) of the Wild and Scenic Rivers Act. These included the following potentials:

- (1) Classification of the Charley River downstream from the vicinity of Bonanza Creek as scenic or recreational because of the long-range possibility of constructing a highway connecting Eagle and Circle. This was discarded since it is believed that construction of such a highway crossing of the Charley River downstream from Bonanza Creek can be made in a manner compatible with the proposed designation. Further, it is doubtful that the remaining downstream segment is long enough to meet the guidelines adopted by the Secretaries of the Interior and Agriculture in 1970.
- (2) Classification of the Bonanza Creek drainage as a recreational river area because of the long-range possibility of construction of the Eagle to Circle highway. This was discarded since there are significant uncertainties as to the probable location of such a highway and even

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the desirability for construction of the highway. The area presently meets all the criteria for wild designation. Should at some future time the potential highway be deemed necessary and the location of the highway change the characteristics of Bonanza Creek from wild to scenic or recreational, this portion of the Charley River drainage could then be reclassified. Scenic or recreational classification was discarded because the proposed wild classification would retain the existing high environmental qualities until there was a definite public need to alter these values.

- (3) Classification of Crescent Creek as recreational to permit potential construction of a highway connecting Eagle to the Alaska Highway via the Salcha Creek. This was discarded because construction of such a highway through the upper Charley River basin would not be compatible with the proposed action of retaining the existing high quality environment which exhibits little evidence of man's activity.

- (4) Classification of the entire river area as scenic or recreational so that mining in the river bed and its immediate environment could take place. This was discarded since such activities are not consistent with the primary objectives of protection of the existing environment for the use and enjoyment of present and future generations.

d. Different Boundaries: Strong consideration was given to the potential of both expanded and reduced boundaries.

These included the following:

- (1) Include all tributary streams. This was discarded as many of the small tributary streams have no "outstanding remarkable" values.
- (2) Exclude Copper Creek. This was discarded as Copper Creek has significant values not duplicated elsewhere in the drainage; provides an important future connecting link to the nearby Fortymile River basin; and provides a distinctive, easily recognized southern boundary to a major Dall sheep concentration to the north.
- (3) Include Dodge Creek. This was discarded because Dodge Creek does not possess "outstandingly remarkable" values.



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- (4) Exclude Crescent Creek-Moraine Creek. This was discarded because this drainage and its excellent example of valley glaciation have distinctive values not duplicated elsewhere in the Charley River basin.
- (5) Exclude all of the Charley River upstream from from Copper Creek. This was discarded because the upper Charley River drainage has distinctive river bank forests intruding into the Alpine tundra which provides both high value for scientific study and as a future connecting link with the Fortymile and Goodpasture Rivers.
- (6) Exclude Hosford Creek. This was discarded as Hosford Creek has distinctive values not elsewhere represented in the proposal and its valley provides direct access to a major concentration of Dall sheep.
- (7) Exclude that portion of the Charley River downstream of Bonanza Creek. This was discarded because this portion of the river and its immediate environment is not duplicated elsewhere in the basin.
- (8) Exclude Flat Creek. This was discarded as Flat Creek would remain the only substantially unaltered tributary in the lower Charley River should the

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potential Eagle to Circle highway be constructed at some future time.

In summary the proposal contains representative segments of a major undisturbed, clearwater, Interior Alaska, free-flowing river.

- e. Inclusion in Another National Conservation System: There is high potential for inclusion in two other national conservation systems or for retention as public interest lands. Proposals for management of the entire 1.4 million acre Charley River basin have been made by other Federal agencies to: Create a unit of the National Forest System to be administered by the Forest Service; create a unit of the National Park System to be administered by the National Park Service; or to retain the existing administrative responsibilities of the Bureau of Land Management.

All three proposals for the entire Charley River basin recognize and emphasize: (1) controlled multiple use and development of the public land and water resources of the basin; and (2) special protection of the Charley River, its principal tributaries and their immediate environments.

Accordingly, the proposal to create a Charley Wild River as a component of the National Wild and Scenic Rivers System is being recommended as a means to provide

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both specific public and congressional guidance on the long-range management and development goals for the Charley River as distinct from the adjacent "multiple-use" areas. Primary responsibilities for administration of the Charley Wild River would rest with the land manager of the adjacent public lands; i.e., Forest Service, National Park Service, or Bureau of Land Management. All three agencies presently manage components of the National Wild and Scenic Rivers System established by the Congress in 1968.

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X. CONSULTATION AND COORDINATION IN THE DEVELOPMENT  
OF THE PROPOSAL AND IN THE PREPARATION OF THE  
DRAFT ENVIRONMENTAL STATEMENT

The proposal to establish a Charley Wild River was undertaken in close consultation and coordination with the following Federal agencies:

Department of Agriculture

Forest Service

Department of the Army

Corps of Army Engineers

Department of the Interior

Alaska Power Administration

Bureau of Sport Fisheries  
& Wildlife

Bureau of Land Management

Geological Survey

Bureau of Mines

National Park Service

Office of the President

Environmental Protection Agency

Informal preliminary comments from the above agencies on a discussion draft of the proposal are reflected in this document.

In addition, copies of the draft proposal were

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provided to:

## State of Alaska

Governor's representative on Wild & Scenic Rivers --  
5 copies for distribution to concerned State agencies

Alaska Department of Fish and Game

## Native Regional Corporations

Tanana Chiefs Conference (Doyon)

## Land Use Planning Team

Informal or preliminary comments have not been  
provided by the above.

There has been no local or public input.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF OUTDOOR RECREATION

IN REPLY REFER TO:

NORTHWEST REGION  
~~1000 SECOND AVENUE~~  
~~SEATTLE WASHINGTON 98101~~

813 D Street  
Anchorage, Alaska 99501  
Phone: 265-4850

Jan 5, 1973

Dear Wild & Scenic River Participants:

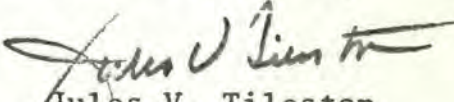
Enclosed is a discussion draft of the Charley River, Alaska Wild River report. This report is based on aerial and field reconnaissance and information obtained from study participants. In some sections information is lacking and in other sections revisions will be necessary. We request your help in supplying whatever additional information you feel is appropriate for the final report which will be assembled by April 1, 1973.

The concepts and conclusions that are put forth in this draft will be contained in the final report should there be no serious objections from the Interdepartmental Study Group for Rivers or study participants. Thus, any comments or problems you have concerning the recommendations in this draft should be promptly indicated.

We would appreciate your comments and an indication of what additional information you feel should be included prior to or at the January 16, 1973 meeting of all agencies concerned with the Alaska Wild & Scenic River Studies. This meeting is to be held at 9 a.m. in the BSF&W conference room, 813 D St., Anchorage, Alaska.

Thank you for your cooperation.

Sincerely yours,

  
Jules V. Tileston  
Alaska Task Force Leader

Enclosure



Charley River and Tributaries, 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.

January 5, 1973

Bureau of Outdoor Recreation  
Alaska Task Force

PRELIMINARY

PRELIMINARY DRAFT ---  
NOT FOR PUBLIC DISTRI-  
BUTION OR PUBLIC USE  
--- SUBJECT TO REVISION

## Foreword

This discussion draft evaluating the resources of the Charley River, Alaska, is incomplete and subject to substantial revision.

In particular, missing information on land status, State highway programs, the type of management proposed for the Yukon River between Eagle and Circle and proposed programs of Natives will require revision of this report.

Although various agencies and individuals have been consulted and library research conducted, the basic ideas in this discussion draft can not be construed as official policy of the Bureau of Outdoor Recreation, other Federal or State agencies or Natives.

In addition, to review of available data, this report reflects on-the-ground investigations of the entire Charley River downstream from Copper Creek. Conclusions and boundaries for Copper and Crescent Creeks and that part of the Charley River above Copper Creek will be confirmed or revised on the basis of on-the-ground work during early spring, 1973. To a lesser degree, additional work is required on Flat and Bullion Creeks.



Available data shows:

- The Charley River and certain tributary streams fully meet the criteria for inclusion in and would be a worthy addition to the National Wild & Scenic Rivers System.
- The river should be managed as a wild river area with difficult access and retention of the existing pristine condition of the river and its immediate environment.
- The entire Charley River basin is mineralized, but there is no record of historic production of gold, coal or other valuable mineral deposits in the basin. There are no active or patented mining claims.
- The public resources of the Charley River and their immediate environments are capable of being managed to protect both people and the environment, 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.
- There are substantial potential scientific values through study of untrammelled plant and animal communities in an environment with little evidence of man's activities
- Federal protection and management of most resources in the Charley River basin, Alaska will continue.

Accordingly, it is recommended that the Congress enact legislation to include the Charley River and its primary tributaries in the National Wild & Scenic River System as a Federally managed component.

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River Setting

The Charley River is a clear, free-flowing stream located about 200 airline miles east of Fairbanks, Alaska. The river flows northeasterly from the even-topped, rounded ridges of the Yukon-Tanana Upland and across the Tintina Valley where it joins the Yukon River. The mouth of the Charley is about midway between Eagle and Circle (Figure 1).

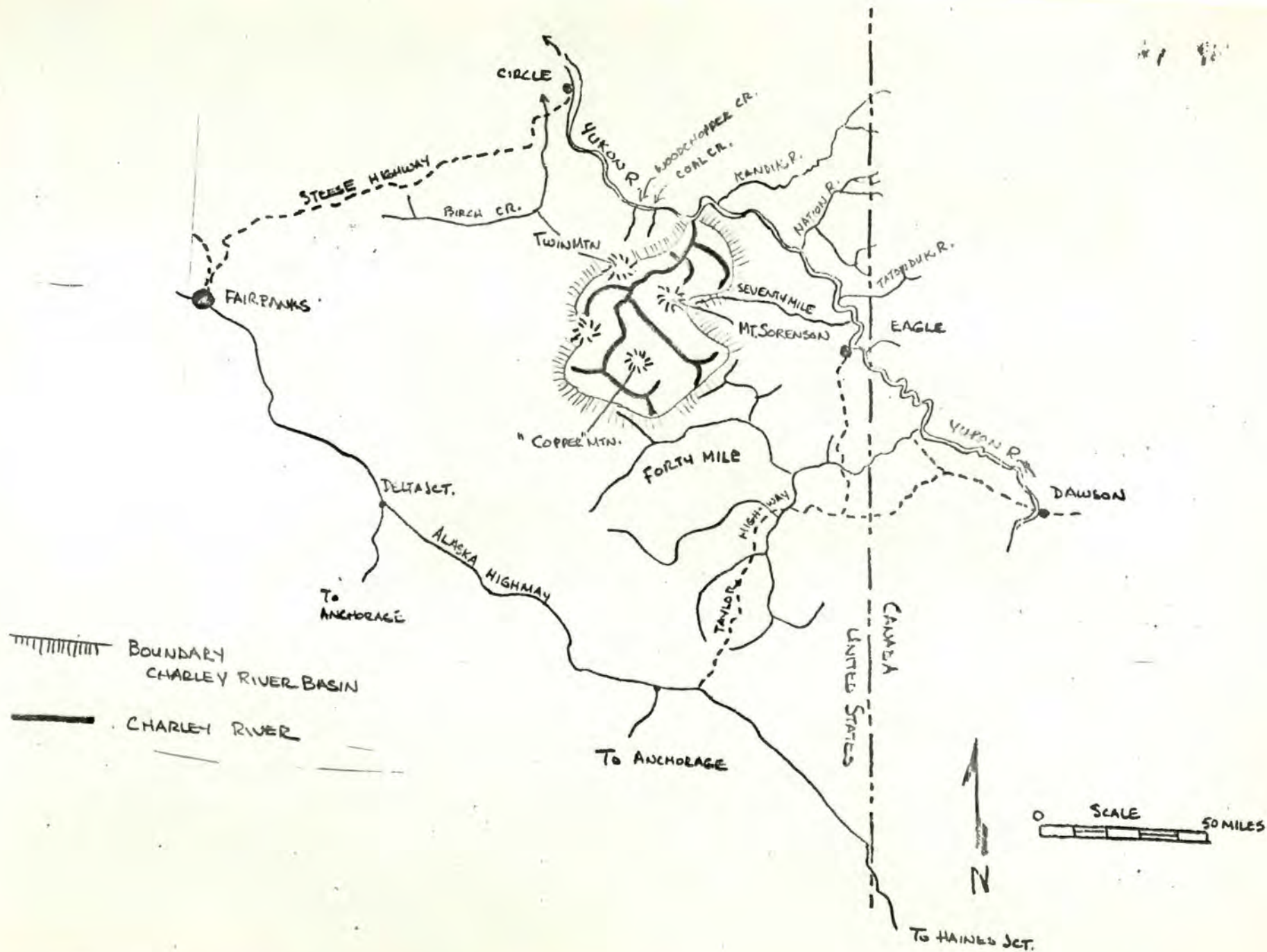
The name Charley River appears to be derived from Charlie Village, a former native settlement a few miles upstream on the Yukon at the mouth of the Kandik River.

The Charley River basin has a drainage area of 1,713 square miles, or about 1.1 million acres. The Charley River itself is 88 miles long while the principal tributaries Copper, Crescent, Flat and Bonanza Creeks add 27, 28, 9 and 5 miles respectively. The entire basin is in the United States.

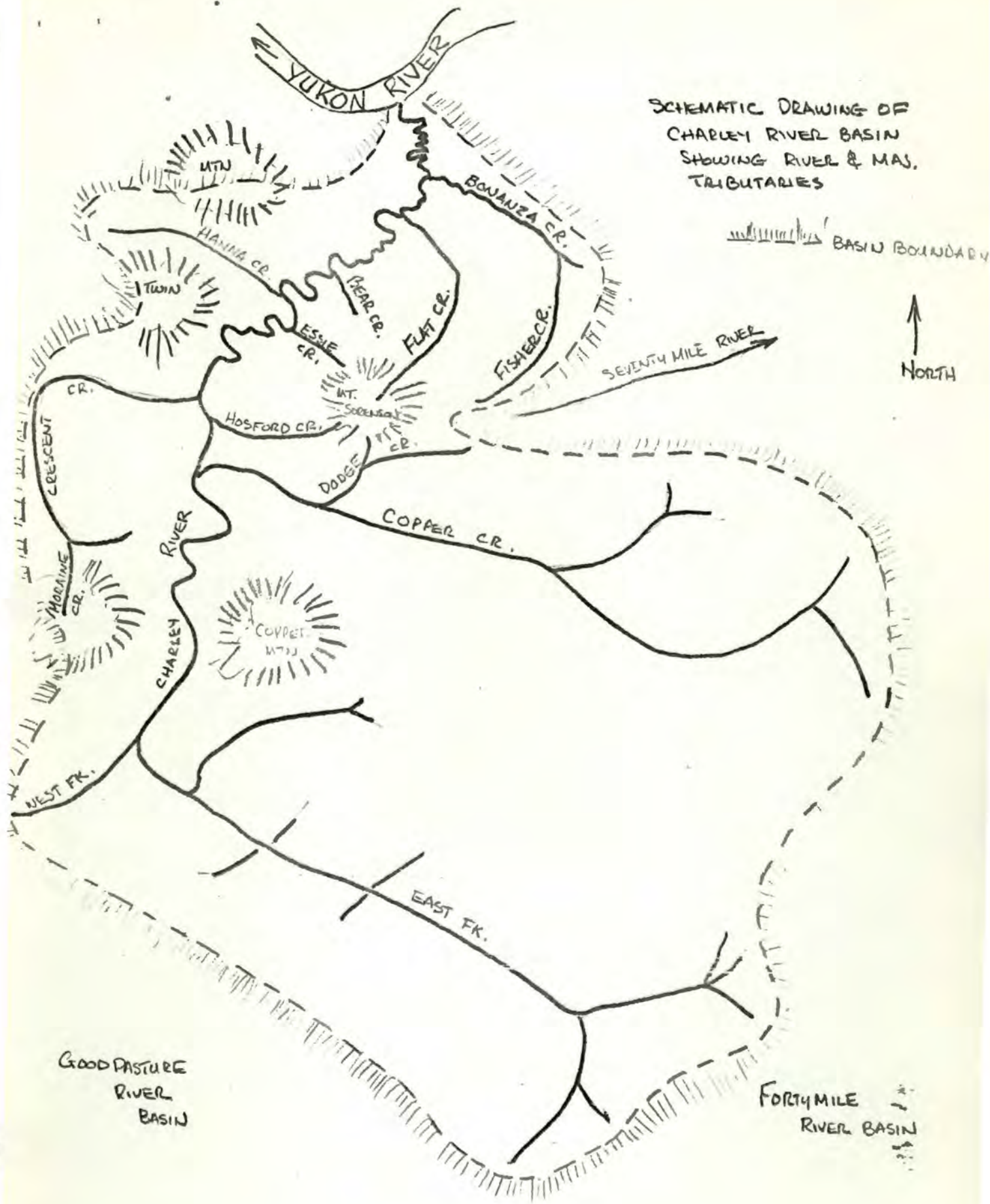
Except for localized areas of alpine glaciation, the basin is unglaciated. Moraine Creek, a tributary to Crescent Creek flows through a U-shaped glaciated valley and has a moranic deposit at its lower end.

The upper <sup>two-thirds of the</sup> basin formed by the Charley River is carved into a great batholith of granitic structure.





SCHEMATIC DRAWING OF  
CHARLEY RIVER BASIN  
SHOWING RIVER & MAJ.  
TRIBUTARIES





Drainages in the upper basin tend to follow structure lines in the underlying granitic rocks. The lower basin flows across the Tintina fault (?) into the Tintina Valley where it joins the Yukon River. This ~~lower~~ <sup>one-third</sup> (Northern) part of the basin is characterized by low rounded ridges and open valleys. The underlying rock structures are highly deformed, easily eroded sedimentary rocks.

Elevations range from an 6,434 foot high unnamed mountain located north of Crescent Creek and west of the Charley River in T. 1 S., R. 20 E. to 6,367 foot "Copper" Mountain which separates Copper Creek from the upper, east branch of the Charley River. Mount Sorenson (5,611') and Twin Mountain (5,784') flank the upstream side of the Tintina fault(?) where the river is sharply constricted in a steep-walled canyon before entering the valley of the Yukon River.

The Charley River is geologically a youthful stream dashing down its length to join the more placid Yukon River. Three categories of streams are found in the basin:

- (1) small, shallow, occasionally braided streams flowing through broad valleys bordered by rounded

tundra covered hills with an attractive stream bank forest (headwaters to a point about ten miles upstream from Copper Creek, Copper Creek in its entirety and the upper two-thirds of Cresent Creek);

(2) larger, deeper streams with depth to 10 feet and widths of 25 yards entrenched in steep walled valleys alternating between attractive tree communities <sup>and</sup> ~~to~~ colorful bare rocks: (ten miles above Copper Creek to the vicinity of Flat Creek and the lower one-third of Cresent Creek): and

(3) larger, deeper streams with depths of 15 feet and widths of 30 yards surrounded by muskeg (Flat Creek to Yukon River).

The Charley cascades from its headwaters with an elevation of some 4,000 feet to an elevation of 698 feet at the Yukon. Excluding small streams that trickle down the steeper valley slopes, average gradient is about 31 feet per mile. Although the river has an open meandered and an occassional braided section course, in the upper and middle portion these appear to ~~be related~~ to the geologic structure of the underlying rocks rather than a symptom of old age. Stream gradient is relatively even with no



falls or cascades. The area between the headwaters and Bear Creek has a higher gradient than the remainder. Once past Bear Creek, the river again becomes meandering and the current slows.

Current is very swift--so swift that the stream bed is composed of large rounded boulders and cobbles in the 12-14 inch diameter class. Sand bars are absent until the vicinity of Bear Creek on the north side of Mt. Sorenson.

Climate is typical of interior Alaska in that winters are long and severe with short days while summers are pleasant and long days prevail. Mean low temperature is in January with  $-17^{\circ}$  F. Extended periods of intense cold with temperatures dropping to  $-50$  and  $60^{\circ}$  F. are common. Summer temperatures climb to  $+80^{\circ}$  F. each year and occasionally reach into the  $+90^{\circ}$  F. range. The mean temperature in July is  $+60^{\circ}$  F. Although summer daytime temperatures are almost always above  $70^{\circ}$  F., there is rapid cooling as the sun passes its daily zenith. Therefore, diurnal temperature variations can be extreme with freezing temperatures during each month. In a typical year, there are 53 days when temperatures reach or exceed  $+70^{\circ}$  F.; 255 days with  $32^{\circ}$  F. or less; and 125 days with temperatures at or below  $0^{\circ}$  F.

Annual precipitation is about 11 inches of which about 30% is snow. Average snowfall is about 45 inches. Snow can occur about 4,000' elevation during each month. Thunderstorms are common during June and July. Ice begins to form in the upper valleys of the Charley in October and by December the river is clothed in solid ice. Breakup is rapid and occurs in May.

Permafrost is present throughout most of the Charley River basin, although in this part of Alaska it is discontinuous. In fine grained materials permafrost is found at a depth of 2 or 3 feet while it is generally about 10 feet deep in coarse grained materials. Ice lenses 5 to 6 feet which are exposed in stream banks of the Charley River in the vicinity of Bonanza Creek.

#### Stream flow

There are no stream flow gauging stations in the Charley River Basin. However, seasonal flows are assumed to be typical of other non-glacial streams flowing northward to the Upper Yukon River. Stream velocity is swift averaging at least 6 m.p.h. Maximum stream volumes are observed in May and early June and are associated with spring breakup



and snow melt. Because of the youthful nature of the Charley River drainage, and permafrost which restricts percolation, rain storms can cause a stream rise of several feet in elevation. Rain induced stream volumes are assumed to be relatively short, lasting only a few days after the rain has stopped. Flows become reduced throughout the summer with lowest flows occurring during late August and September. Limited observations indicate there are sufficient water flows to permit canoeing or use of other small hand propelled watercraft for recreational purposes during the late summer for the lower portions of Copper and Crescent Creeks and downstream from the confluence of the two upper forks of the Charley River in T. 3 S., R 20 E. (this will be field checked during Spring, 1973).

#### Water Quality

Data on water quality is lacking. It is assumed that overall water quality is excellent. The Charley River and its upper tributaries are exceptionally clear and is one of the clearest <sup>Alaskan</sup> mountain streams ever encountered. Individual rocks and leaves may be easily seen to a depth of 15 feet. The clarity of the water is such that from the air, gravel bars which appear

to be covered with only a few inches of water often proved to have depth in excess of four feet. Downstream from the confluence of Bonanza Creek water quality is affected by the adjacent muskeg areas. Here, waters take on a brownish cast from flowing through soils with high organic content. (*tannic acid?*)

There are no permanent habitations and people seldom visit the area so there appears to be no human posed health hazards at this time.

Water temperature is cool--probably too cool for swimming. Low water temperatures, however, are reported to be conducive to the prolongation of the life of pathogenic bacteria. Accordingly, indiscriminate disposal of wastes as people use increases in the Charley River basin can cause serious water quality and health problems.

#### Vegetation

The vegetation of the Charley river basin is especially noteworthy. Subarctic in character, timberline occurs at an elevation of about 3,500 feet. Above that is Alpine Tundra and bare rock. Tree communities are composed of mixed and pure stands of white spruce, black spruce, balsam poplar, black cottonwood, tamarack, birch and aspen. Shrubs range from willows to blueberries and low-bush

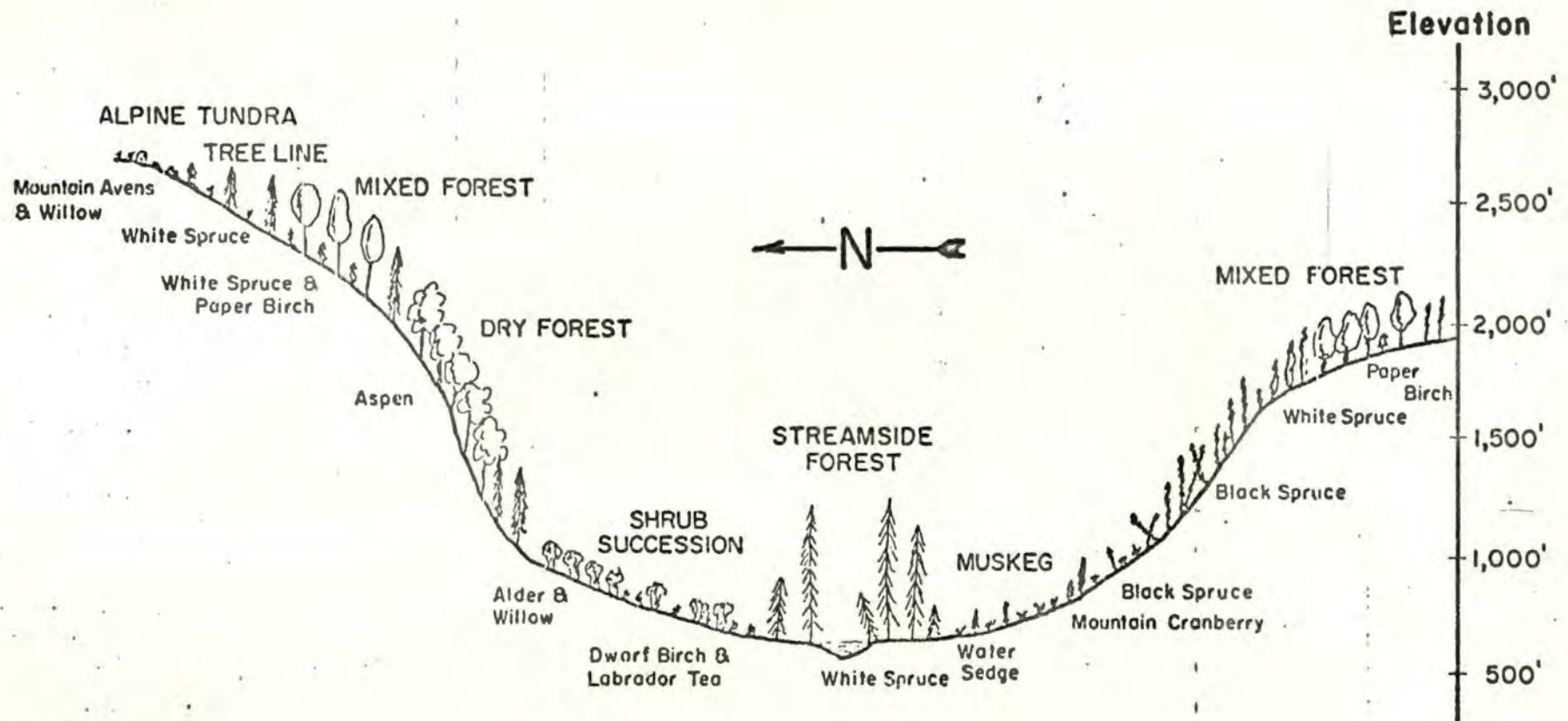


cranberries. Blueberries are locally abundant, ripen during the last week of July and are found in edible quantities for some six weeks thereafter. Low bush cranberries ripen in late August. Figure 2 shows the typical distribution of vegetation in stream valleys of the Charley River basin. Wild flowers are prolithic.

In a report entitled A Proposal for an Ecological Reserve System for the Taiga & Tundra of Alaska (Jan 14, 1972) the Institute of Northern Forestry USDA identified the Charley River basin as an area possessing valuable plant communtities which should be protected for scientific purposes. Plant associations recommended for study were: Alpine Tundra, Flood Plain White Spruce and Successional Stands of Balsam Poplar & Black Cottonwood, Upland Forests of Spruce, Aspen, Birch, and Black Spruce-Tamarack. These were recommended for protection on the basis of being representative of the Yukon-Tanana Uplands area of interior Alaska. Study and scientific manipulation of these plant communities could lead to better understanding of how to better develop the many natural resources of the subarctic.

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FIG. 2 DIAGRAM OF VEGETATION TYPES ALONG A TOPOGRAPHIC GRADIENT IN THE CHARLEY RIVER, ALASKA



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Timber is considered to be of a non-commercial nature.

Soils are shallow. Because of the steep slopes of the immediate valley of the Charley River, soils are locally unstable and subject to slumpage.

Wildfire, together with slope and exposure, is a dominant factor shaping location and extent of plant communities throughout the basin. Stream bank vegetation and to a lesser extent the valley floors are less altered by fire because of high moisture content of the valley floor. Evidence of old fires are noted by the incidence of slumping and slides as the soil and trees slip into the river.

Burns of several thousand acres are not uncommon. These are primarily associated with early summer thunderstorms.

#### Land Use

There are no known intensive uses of land or water resources in the Charley River basin.

There are no permanent <sup>RESIDENCY</sup> residences and scant evidence of past occupation except for the more accessible portions closest to the Yukon River. Even there man's impact is slight. Three (?) cabins exist: at the mouth, at Bonanza Creek and one is

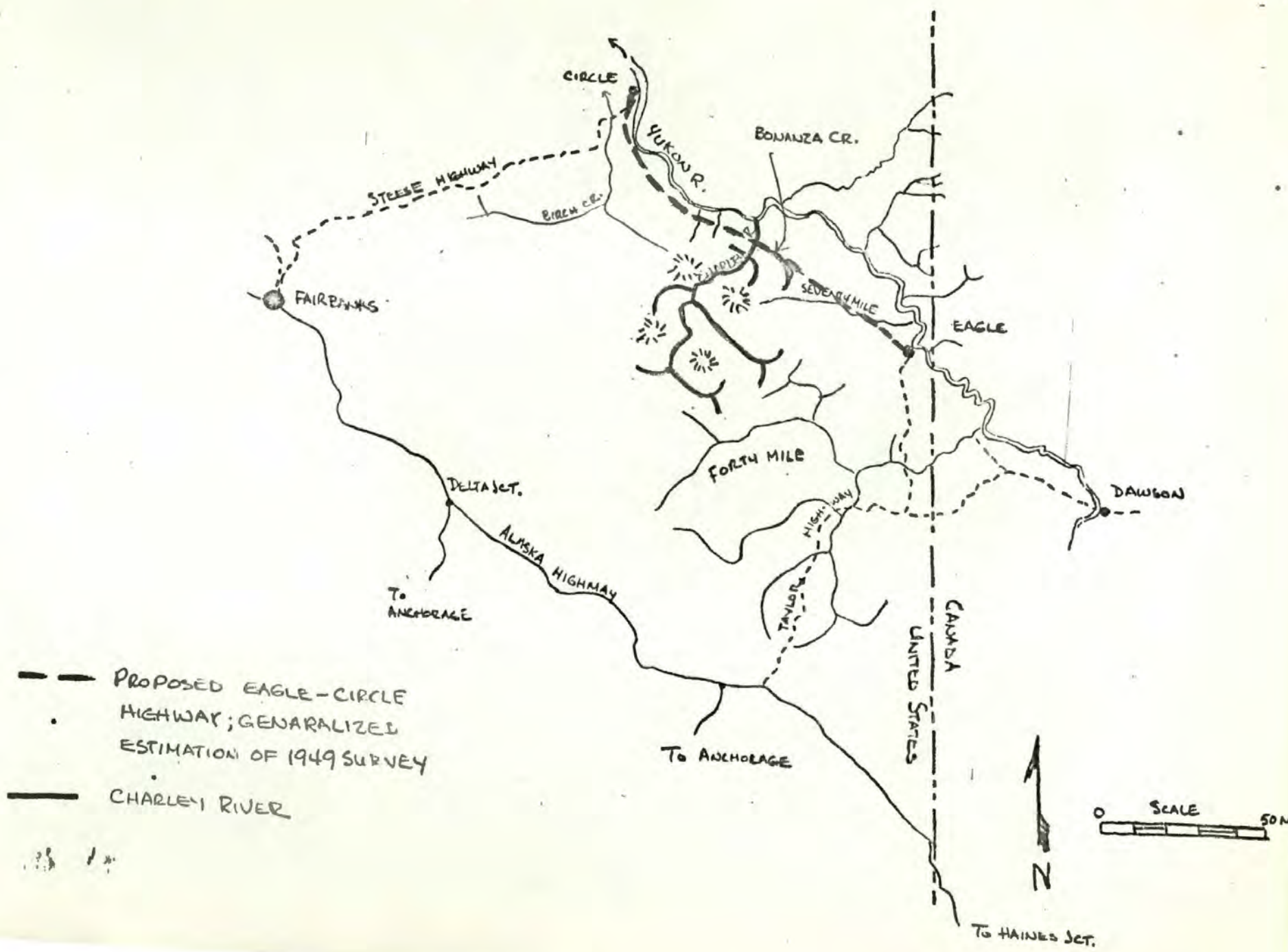
reported near Crescent Creek. Ruins are noted on the 1956 USGS quadrangle maps (1:63,360 scale) in the tributary areas of Copper Creek and on Hasford Creeks. Early geological maps prepared by Prindle and others prior to 1910 and reports by Mealie and others as late as 1937<sup>1/</sup> show no trails, telegraph lines, mining operations or cabins in the Charley River basin. A few cabin ruins are also along the Charley downstream from Copper Creek. Whether these and the ruins reflect past mining explorations, trapping or summer camps is not known. It is believed, however, that ruins are associated with trapping.

RECREATION  
Present recreations use is very light being limited to two or three hunting parties annually in the middle and upper areas and slightly more on the lower river area. The three(?) existing cabins are used as base camps for hunting expeditions(?).

TRANSPORTATION  
There are no existing surface or air transportation routes in the river basin.

A primitive airstrip has reportedly been constructed without authorization on public lands along the lower portion of the Copper Creek. This effort is apparently related to a sheep-hunting guide operation. There are no ~~known~~ other airstrips.





A potential road crossing has been identified in a long range State highway plans to build a highway along the Yukon to connect Eagle and Circle. The status of this proposal is not know (data to be provided by the State).

Although the lower Charley River in the vicinity of the Yukon was undoubtedly crossed by overland winter routes, evidence of any major route is absent.

#### Mining

Information on the status of active and patented mining claims throughout Alaska is being assembled by the University of Alaska, Fairbanks, under contract with the Bureau of Mines (USDI). A similar effort to locate and plot all mining claims regardless of status is underway by the Bureau of Mines. Base data for these studies are minerals information compiled from state minerals records. These studies are important as past mining activities provide valuable indications of prospective values for future development of public minerals. In a broad way, historic production data is indicative of the value of potential mineral value and gold can be considered a good indicator of mineralized area.

Data assembled on active and patented mining claims shows there are none in the entire Charley River basin. (Data on past activities are not yet



available).

Although record of mining activities in the Charley River basin are absent (?) there is no question that the river basin is in a mineralized zone.

Studies summarized by Foster and Yount (1972)<sup>1/</sup> using geochemical analysis of rock and water samples throughout the upper two-thirds of the Charley River basin and adjacent areas to the south and east show presence of tin, copper, silver, gold, nickle, lead, molybdenum, zinc and other metals. However, when considering the known gold production and intensive early development of the adjacent Seventymile and Fortymile River basins and Fourth of July Creek (Nation) to the east and southeast and similar mining operations on Coal and Woodchopper Creeks 15 to 20 miles to the west, combined with the absence of gold production in the Charley River it appears unlikely that public metallic mineral deposits within the Charley River basin are in sufficient quantity to warrent economic development.

#### Wildlife

Wildlife resources of the Charley River basin are substantial. Game trails are abundant. The Steese-Fortymile caribou herd frequents the entire drainage at one time or another. A unique, small

band of Dall Sheep live on the canyon slopes and timbered ridges of the upper and middle Charley River. Black and grizzly bears, wolf, small game and fur bearers are found throughout. Moose are common.

Fisheries include sheefish at the mouth, king and chum salmon in the lower 8 to 12 miles and grayling and round whitefish throughout. Sport fishing is rated as only fair.

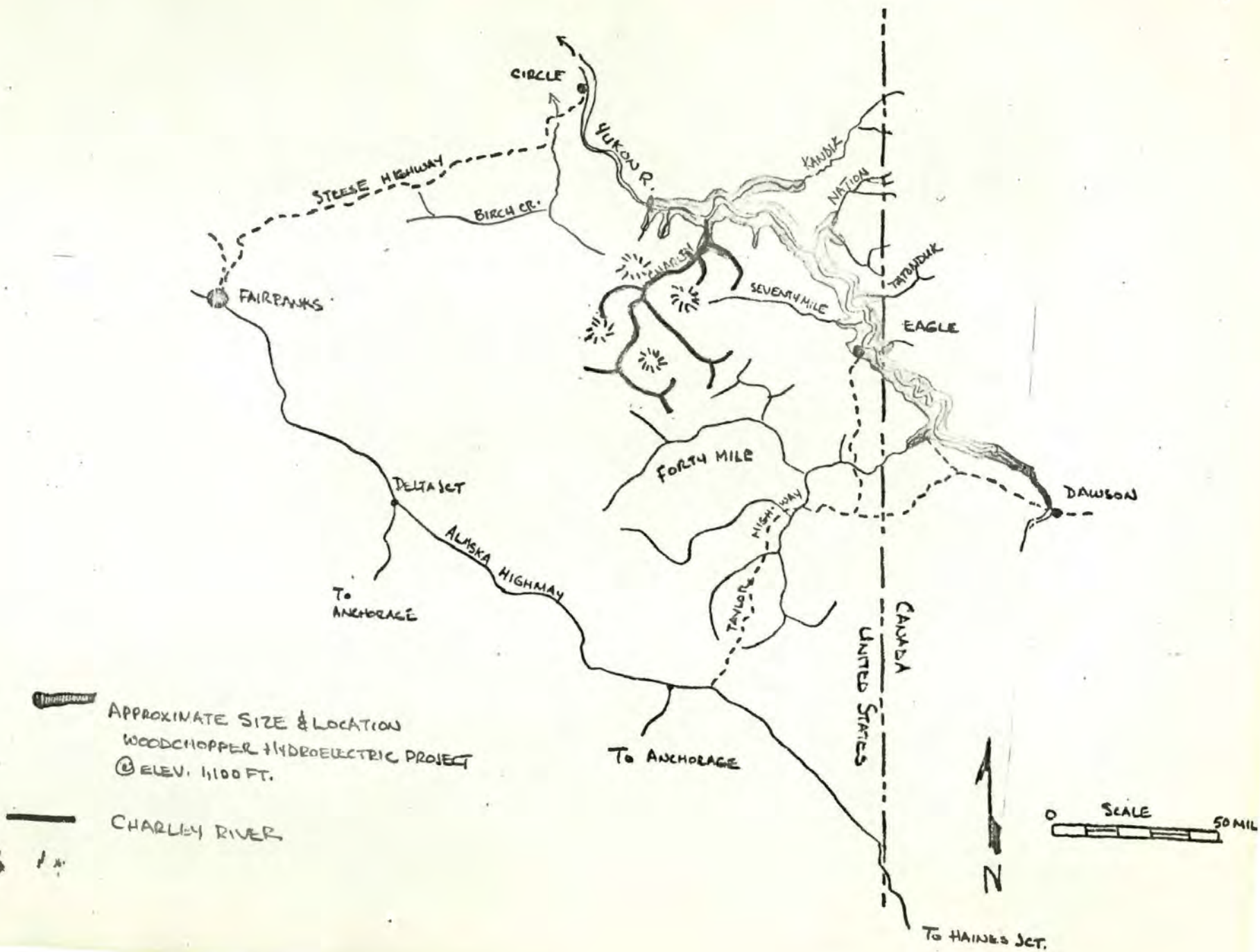
There are no known subsistence hunting or fishing activities in the basin. There may be some incidental or infrequent subsistence operations closer to the mouth of the Charley River.

#### Water Uses

There are no known adjudicated water uses in the Charley River basin. A potential hydroelectric project (Woodchopper) located on the Yukon River downstream from the Charley River would flood the lower 20-25 miles of the Charley River at project elevation of 1,100 feet (Figure \_\_\_\_).

The Woodchopper reservoir also would inundate the Yukon River to the vicinity of Dawson, Yukon Territory, Canada--a distance of almost 200 miles. The proposed reservoir would store 92 million acre-feet of water at a pool elevation of 1,100 feet, have a shoreline of 800 miles and a surface area of about 562 square miles. Estimated firm power potential





is 2,160,000 kilowatts at 75 percent annual load factor with firm energy production of 14.2 billion kilowatt hours.

The Alaska Power Administration indicates that Woodchopper is one of five most important hydroelectric potentials in Alaska on the basis of size and cost (excluding fish, wildlife or environmental considerations). The project is considered to have statewide, national and international significance. A significant portion of the proposed project is in Canada. Accordingly, international negotiations would be required to develop the maximum potential of the Woodchopper project. The extent to which such a program is compatible with Canadian plans for the Yukon River is unknown.

#### Future Land Uses

Future land uses which could significantly alter the existing very high-quality environment of the Charley River are: transportation, mining and hydroelectric power.

The distinctive feature of the Charley River basin is the lack of man's influence on plant and animal communities. These together with their environments are fragile and any substantial increase in use or



visitation could seriously effect these relationships. For example, improved access could quickly cause over-hunting of a unique band of Dall sheep whose habits and range are not well understood while roads in the shallow soils and permafrost could adversely effect existing high water quality and the exceptionally clear character of the water.

Surface transportation except by boat upstream from the Yukon River is nonexistent. There is only one primitive, unauthorized airstrip. The Eagle to Circle road included in the long range highway program of the State or extension of potential roads in the Fortymile River basin into the headwaters of the Charley River could, even with the best of engineering standards, destroy the high values of the Charley River basin.

In 1949, a potential route was located along the south side of the Yukon River. That route would require a highway crossing of the Charley River in the vicinity of Bonanza Creek. It is doubtful that the 1949 route will meet present engineering or environmental standards. However, should the route become a reality, it is believed that a crossing of the Charley between Bonanza Creek and the Yukon River could be made compatible with the high quality



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environment offered by the Charley river, provided no roads were constructed from that highway into the headwaters of the Charley River.

Mining, especially operations requiring overland mechanized access, would have the same environmental impacts noted above for highways. Mining operations in the river or its immediate environment would destroy the existing untouched nature of the Charley River.

Hydroelectric power generation as proposed in the Woodchopper project would destroy considerable big game habitat as well as invade the area occupied by the band of Charley River Dall sheep.

Land Ownership

There are no lands in private ownership in the Charley River basin.

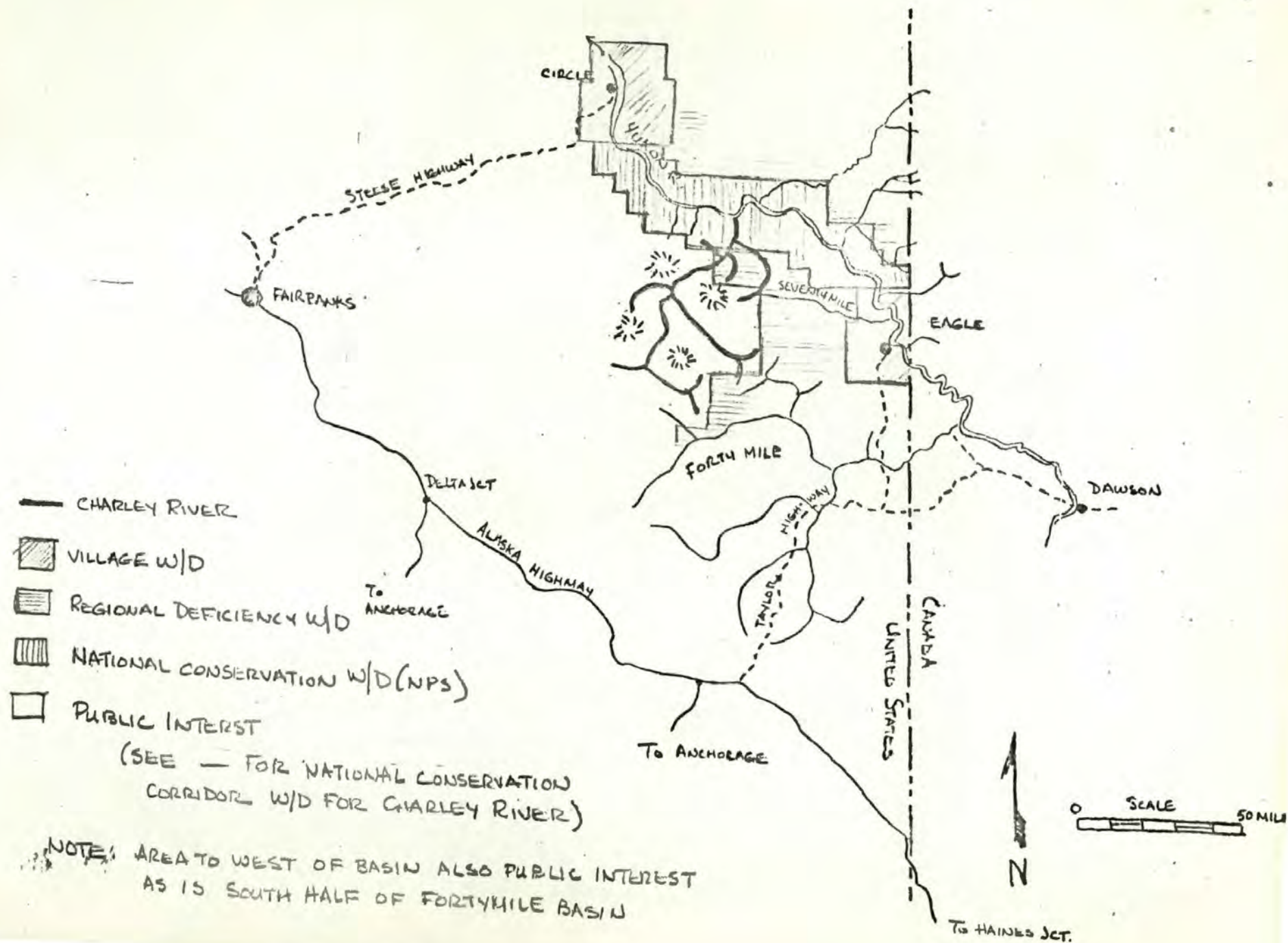
The initial land classification proposed by the Secretary of the Interior in March, 1972 under the provisions of section 17 (d)(2) ANCSA placed the entire basin in the reserved <sup>national</sup> conservation status. On September 16, 1972 the initial classification was modified by reclassifying except for "all lands which are wholly or in part within one mile of the mean high water mark of the river's bank and all islands and islets within . . ." as "public interest" under section 17 (d) (1) ANCSA. The river corridor retained its original 17 (d)(2) status.



On October 11, 1972, Mr. John C. Sackett, President of the Tanana Chiefs Conference requested an adjustment in the land status of the lower Charley River basin. Specifically it was requested that certain lands classified on September 16, 1972 as "public interest" lands be converted to Regional Deficiency needs. This request, subject to retention of the prior 17 (d)(2) classification for the Charley River and tributaries (Figure \_\_\_\_\_) was approved and published in the Federal Register on Dec 14, 1972 (Appendix \_\_\_\_\_). The substance of the approved Oct 11, 1972 request of the Tanana Chiefs Conference was to make available for Native selection mineralized areas of the Charley River Basin.

Application of an individual Native allotment under the provisions of ANCSA has been filed at the mouth of the Charley River. There are no other known applications for transfer of public lands into private ownership.

There are no power site withdrawals for the potential Woodchopper hydroelectric power project affecting the Charley River. (Land status to be supplied by BLM.)





Since the Tanana Chiefs Conference specifically requested the conversion of certain lands in the lower Charley River basin to regional Native deficiency needs, it is assumed that there is high probability that much, if not all of the lands so designated will be selected and thereby go into private ownership.

On Jan 12, 1972, the State of Alaska also filed application for some of the land in the Charley River basin.

#### Recreational Access

The Charley River is inaccessible except by air or by boat. Access by boat is limited by the shallow, rocky nature of the Charley River. The closest point where auto access is possible is Eagle--some 55 miles distance. A potential mining road into the headwater areas of the North Fork Fortymile River would reduce this to about 20 miles.

#### Water rights and ownership of the stream bed

Water rights and ownership of the river bed are unknown. Whether any substantial portion of the Charley drainage is considered navigable under State law is unknown. (To be supplied by the State).

Recreation

Alaska means the last frontier to many, a area where one is expected to rise to the challenge of a harsh environment and wrest wealth, health or simply peace of mind. The resources of the Charley River basin epitomize this opportunity.

A pristine setting in the remote, untrammelled area, the Charley River is off the beaten path and generally not even with in sound of the myriad small aircraft that provide the primary means of transportation throughout the Alaskan bush. Wildlife populations are excellent and often viewed. The small band of Charley River sheep is especially noteworthy as they may be observed at very close range from the water's edge. Sparkling, free-flowing, mountain streams invite exploration. The rolling, everchanging topography offers first cliffs then sweeping vistas of mountains, tundra and forest; the constant twisting of the canyon encased middle sections command attention; while water dashing through boulder strewn rock gardens and surging against cliffs excite and entice the white-water boating enthusiast. Geologic outcrops and plant communities demand interpretation.



Existing recreations use is very limited in the Charley River basin. It is estimated that two or three motor boats (2-4 people each) may progress as far upstream as Copper Creek and one or two aircraft landings for sheep hunting activities is the extent of use above Bonanza Creek. Below Bonanza Creek use associated with moose hunting and some fishing is only slightly higher because of its proximity to the Yukon River.

These very same attractions are diminished with use of the river and its immediate environment. As the river area and the entire basin now reflects little of man's activities, any substantial increase will proportionately decrease the existing high quality recreation opportunities. There are no public recreation facilities in the Charley River basin.

Table 1 shows projected outdoor recreation demand for the Interior Region, Alaska (Alaska Statewide Comprehensive Outdoor Recreation Plan). The Interior Region includes that portion of the State between the Brooks and Alaska Ranges and includes all of the Charley River basin.

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demand for the Interior Region, Alaska (Alaska  
Statewide Comprehensive Outdoor Recreation Plan).  
The Interior Region includes that portion of the  
State between the Brooks and Alaska Ranges and includes  
~~all of the Charley River basin.]~~

With road or other means of easy access to  
the Charley River headwater areas the estimates of  
recreation use would be low, but so would the quality  
of the experience.

From a canoeing-kayaking standpoint the Charley  
River is unexcelled in its challenge and interest.  
The ratio of pools to riffels is outstanding with only  
a few short pools to riffels until the lower river  
area is reached. There, the pools are longer and deeper.  
At low water levels the route through the numerous  
rock gardens must be chosen carefully. Manuvering  
in swift current is mandatory. Water classification  
using the International Difficulty Rating is Class II/III.  
Skill level is Intermediate/Advanced (See appendix \_\_\_\_).  
Sweepers are generally absent.



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Table 1: Projected Outdoor Recreation Demand 1/

## Interior Region, Alaska

Activity <sup>2/</sup>	1975	1980	2010	Charlie R. Potential <sup>3/</sup>
Hiking	3,600	3,800	6,200	5%
Picnicking	14,700	17,200	29,200	none
Developed camping	7,200	9,100	23,200	none
Undeveloped camping	2,800	3,500	6,800	10%
Beach Swimming	3,600	4,300	7,400	none
Sightseeing	12,400	15,400	37,600	none
Driving for Pleasure	15,100	17,800	32,000	none
Motorboating	3,950	4,800	8,800	none
Canoeing	2,200	2,400	3,200	25%
Alpine Skiing	2,700	3,500	6,100	none
Cross-country Skiing	100	200	300	none
Snowmobiling	1,500	1,600	2,400	none
Flying for Pleasure	1,000	1,100	1,700	none
Totals	70,750	84,700	164,900	

1/ design load in participation days2/ hunting and fishing are discussed separately3/ Assumes the Charley River is added to the National Wild and Scenic Rivers system.

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BOR/MTF



Ratings are made on the basis of a loaded, open canoe. Use of a kayak or closed canoe, or a canoe without camping gear would reduce the overall ratings. It is important to remember, however, that ratings are a function of equipment x skill x water level. Therefore the above ratings are based upon what are assumed to be typical summer conditions. Reduced water flows as a result of an unusually dry water year would render many of the upstream areas impassible to water craft without considerable dragging. At the same time, increased water volumes might smooth out one rapid while creating new, more dangerous rapids elsewhere. High water is especially dangerous since the current often swings directly against steep, undercut rock cliffs where an unwary voyager could be seriously injured or, at best, the probability of losing all gear is high.

Camping opportunities are abundant with many potential campsites with plentiful firewood and good water all in a pristine setting.

Hunting opportunities are good and of high quality. The Charley River band of Dall sheep could be set aside by the State of Alaska as a walk-in area for trophy hunting of sheep in a manner similar to the nearby Glacier Mountain area. In a nutshell, the



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Charley River can be managed by the State as a quality sheep hunting area. Greater hunter harvest of the Steese/Fortymile caribou herd probably would not be consistent with the primary objective of maintaining a healthy herd which is in balance with its existing environment. Moose hunting is fair to good *and could be increased.*

Endangered species of wildlife found in the Charley drainage are the bald eagle and peregrine falcon. The bald eagle is known to nest along the river and its believed that the peregrine falcon also nests in the basin.

Trapping is assumed to take place on a limited basis

From the standpoint of recreation experience in the Charley River basin it is reasonable to expect to observe much evidence of, or actually see, wildlife including wolves, moose, caribou, black and grizzly bears, numerous small game and fur animals, including beaver and a wide variety of bird-life especially water-fowl and possibly several rare and endangered species. The number and variety of wildlife observed would depend upon the time of year and the part of the drainage area visited.

Special geologic features include significant opportunities for geologic study and rock-hounding.

Rock formations, soil-vegetation relationships and mountain building processes associated with the Tintina fault (?) and its impact on surface drainage afford many opportunities for study and interpretation.

### Scientific

The resources of the Charley offer great opportunities for scientific study. Because of its existing undisturbed condition, outdoor laboratories would be able to closely study and follow ~~the~~ changes which result when fragile subarctic soils are mechanically altered. Similarly the impact of man in the pursuit of recreation could be measured in terms of the impact of the environment on man, and man on the environment. Such data would be useful in determining the ~~proper~~ recreation capacity <sup>of the resource</sup> when the objective was to provide a high quality experience stressing solitude.

Scientific study of the relationships between the various plant communities of the basin, especially the alpine tundra, flood plain white spruce and successional stands of balsam poplar and black cottonwood, upland forests of spruce, aspen and birch, and black spruce-tamarack as recommended by the Northern Institute of Forestry would provide valuable information



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on how to best manage the resources in the adjacent Fortymile and Seventymile River basins where substantial alteration of the original environment has taken place.

Close study of the Charley River band of Dall sheep and other wildlife population in the basin *could provide* data <sup>on</sup> how to better manage wildlife so that populations are in balance with their critical habitat.

Qualifications for Inclusion in the  
National Wild & Scenic Rivers System

A careful review of the Charley River together with its principal tributaries and their immediate environments indicates 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 Charley River and its major tributaries.
- There is no substantial evidence of man's activities in the basin and the streams are especially pleasing to the eye.
- The Charley River and its principal tributaries and their immediate untrammelled environments possess an outstandingly remarkable combination of scenic, recreational geologic, fish and wildlife, historic, cultural and other similar values.



- There are significant opportunities for scientific study which would provide needed data on the impact of the subarctic environment on man and man on the subarctic environment.
- There are no substantial mineral values both existing and potential in the river bed or immediate environments which can be developed in a manner compatible with the above noted values.
- The Charley 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.

Accordingly, it is believed the Charley River and its principal tributaries and their immediate environments would be a worthy addition to the National Wild & Scenic Rivers System by Act of Congress. A plan outlining a recommended program to preserve the free-flowing condition and protect the streams and related environments for the benefit and enjoyment of present and future generations is discussed in the next part of this report.

Recommended Program for the Proposed  
Charley Wild River, Alaska

At this time direct public involvement in the development of the concepts presented herein has been limited.

The Bureau of Land Management, beginning in 1963, began assembling information on the basin which ultimately led to the proposed "Fortymile Unit" in 1970. The "Fortymile Unit" encompassed some 12,450,000 acres in east central Alaska and included all of the Charley River basin discussed in this report. In 1969 a draft proposal for classification of the much larger unit was prepared and in 1970 a series of public meetings were held to obtain public comment. The preliminary plan was also sent to the Alaskan Congressional delegation, the House and Senate Committees on Interior and Insular Affairs, the Governor of Alaska, and the Public Land Law Review Commission. On May 9, 1970, the proposed classification was published in the Federal Register, Vol 35, No. 91, p. 7311-12. Final action was suspended with enactment of ANCSA.

Material in the official files of the Fairbanks District Office, Bureau of Land Management, relating to the proposed classification were carefully reviewed.



These documents, combined with field investigations during 1972, are the basis for the concepts of protection, development, and management of the river corridor.

These will be further checked during the early spring 1973. Field work in the Charley River drainage above Copper Creek, Copper and Crescent and Bonanza Creeks may cause additional revisions.

#### Administration

There are two potential Federal land managers for the proposed Fortymile Wild & Scenic River: The U.S. Forest Service, should lands adjacent to the river be designated a unit of the national forest system as proposed by that agency in July, 1972; and the Bureau of Land Management, which is responsible for existing management of the land is also the agency responsible for suppression of wildfire. Since it is probably that portions of the lower Charley River basin may be selected by the Tanana Chief Conference as Native regional deficiency lands under the provisions of ANCSA, that corporation may desire to actively participate in the management and protection of the high public values found in the stream valleys.

Another potential Federal land manager is the National Park Service. That agency is evaluating the

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resources of the Yukon River between Eagle and Circle as a unit of the National Park System. The boundaries established in the official 17 (d)(2) national conservation withdrawal include the lower 8 to 10 miles of the Charley River and the lower one-half of Bonanza Creek.

Similarly, <sup>protection and study of</sup> the outstanding scientific values would involve the active participation of the University of Alaska and Northern Institute of Forestry.

The Forest Service has no plans to manage the Charley River.

Plans for management of the Charley River as a unit of the National Park System will be provided by NPS at a later date.

The following plan presents the general concepts of boundaries, classification and development of the public resources of the Charley River if added to the National Wild & Scenic Rivers System by Congress with the Bureau of Land Management continuing its existing management responsibilities including wildfire suppression throughout the basin. These will be modified and strengthened as new data are developed and will be revised further should the Tanana Chiefs



Conference ultimately select Native deficiency lands in the basin and desire to also participate in the management and development of the outdoor recreation opportunities of the stream valleys.

#### Classification

One of the three classifications prescribed in the Wild and Scenic Rivers Act by the Congress is proposed in the Charley Wild River:

- Wild river area - 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 are the nestiges of primitive America.

Hunting, fishing and tripping would continue to be managed by the State of Alaska.

#### Boundaries

Two types of lateral boundaries are proposed:

(1) Where substantial public use is expected or where the immediate environment will require special management a ridge-to-ridge line of sight is recommended. Criteria for selecting these boundaries are shown in Figure \_\_\_\_ . In almost all cases the lateral boundary would be within one mile of stream bank (the actual

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boundaries will not be plotted until after the concepts presented herein are adopted).

(2) Where public use will be light, where primarily use will be for ingress and egress to the Charley River basin and adjacent areas, a 200' strip on either side of the stream is recommended.

Figure \_\_\_\_\_ shows the relative locations of areas proposed as wild river areas and Figure F\_\_\_\_ shows areas recommended for the 200' stream bank zone. Table 3 provides the detailed description for each of the segments involved.

#### Management objectives

Primary objectives of the recommended protection, development and management plans are: protect and interpret to the public areas of special scientific and geological significance; provide a high quality outdoor recreation experience in a primitive setting; and protect selected areas for scientific study.

#### Residency

Permanent residency within the river corridor is an incompatible use of the public resources. All existing structures (the three(?) cabins) are located on public lands. The cabin near the mouth of the Charley River may be included in a native allotment claim. (To be checked).



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Every attempt should be made to acquire public ownership of nonconfirming residences, to the extent that there is an established pattern of occupancy of such residences, life-time estate should be granted the existing owner.

## Recreation, Fish and Wildlife

The primary objective of the proposed recreation management and development program for the Charley Wild River, is to provide a high quality experience in a primitive or natural setting.

Emphasis will be to manage and protect those aspects of the outdoor recreation experience which ~~emphasize~~ <sup>accentuate</sup> individual communication with nature.

Accordingly, it will be necessary to keep recreation use at a level which does not lower the overall quality of isolation and solitude. Careful check of user reactions and the interactions of the recreationist on natural plant and animal communities will be made to establish bench-mark data needed to determine the proper level of use. Habitat manipulation will not be encouraged as a means to increase natural animal or plant communities. Rather these will be used to determine when man's activities are becoming too pronounced. Recreational developments would be primitive and scattered.

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All public use will be developed on the basis of resource uses being planned for lands outside the river corridor. Hunting, fish and trapping would continue to be managed by the State. All activities would give strong consideration to the possible increase or spread of wildfire both with the river corridor and on adjacent lands. Special attention will be required to reduce litter and pollution which will tend to increase as recreational use increases. This aspect will be very important to protect water supplies for cooking and drinking purposes.

Care would be taken to identify and protect critical habitat of rare and endangered species. For example, nest trees of bald eagles and cliff nests of bald eagles and pregrine falcons would be protected from adverse uses including appropriate restrictions on recreational uses which might disturb nesting.

## Transportation

Highway programs requested of the State have not been received. However, based upon available information it appears that new highway access can be constructed without undue impairment of the existing environment of the lower Charley River drainage.



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If deemed necessary and feasible, the construction of a road between Eagle and Circle which would cross the Charley River in the vicinity of Bonanza Creek could be compatible. This should not, however, be construed as implied endorsement of the Eagle to Circle 1949 route. In fact, it is believed that from a recreation standpoint it might be better to locate such a road on the north side of the Yukon River and reserve transportation routes on the south side for foot, horse or compatible motorized trail use.

It is proposed that access to the upper basin be restricted to trail use and by aircraft. To facilitate air access it is recommended that one or two appropriate sites be selected in the headwater areas of the Charley River basin for construction of an airfield capable of accommodating the safe landing of small aircraft transporting hunters, boaters or other resource users into the upper basin. Aircraft landings other than a designated transportation nodes should be prohibited.

Selection of the Eagle to Circle crossing of the Charley River and the airfields discussed above should, in addition to engineering-safety-maintenance goals consider the following:

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1. Air and water pollution probabilities;
2. Noise pollution, especially in nearby roadless areas;
3. Long term effect on population distribution within the basin and impacts on existing land or water uses;
4. Location of historic structures or sites;
5. Effects on plant communities having high scientific value; and
6. Effects on resident wildlife populations and migration routes

Use of ATV's within the river corridor is not appropriate because of the fragile subarctic environment.

Use of motorboats above Bear Creek does not appear appropriate and ~~perhaps~~ should be restricted above Flat Creek if it adversely increases hunting pressure on the band of Charley River Dall sheep. Motorized boat use in connection with moose hunting in the lower Charley River readily accessible from the Yukon River is compatible.

#### Mining

Mining within the bed of the Charley River and its tributaries and their immediate environments has been determined to be an incompatible use of public resources.



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Accordingly, it is proposed that public minerals within the river corridor be withdrawn from location and entry under the U.S. mining laws and mineral leasing laws.

To protect valid rights, the following steps are proposed:

For any person who prior to March \_\_\_\_, 1972 initiated a valid mining claim or location within the Charley River corridor under the general mining laws and recorded notice of said location with the appropriate State or local office 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 on enactment of Federal legislation designating the Charley River and its tributaries as a component of the National Wild River System and may, if all requirements of the general mining laws are complied with, proceed to patent. At the end of the proposed period all claims not patented would be voided and the minerals withdrawn from location & entry.

Substantial modification of the existing environment within wild river areas by valid mining development would proceed on the basis of guidelines developed for mining.

The Wild & Scenic Rivers Act directs the Secretary of the Interior, where he is responsible for the management of Federally managed components of the National Wild & Scenic Rivers System to issue regulations for the conduct of mining activities which among other things " . . . provide safeguards against pollution of the river involved and unnecessary impairment of the scenery within the component in question."

Accordingly, it is recommended that the following regulations be adopted where valid mining claims or locations exist within the Charley River Corridor:

- All mining activities are preceeded by an appropriate permit from the Environmental Protection Agency indicating that existing water quality would not be adversely affected by the proposed mining operation.
- Notice of all valid claims and assesment work also be filed with the Bureau of Land Management, District Office, Fairbanks, Alaska.
- Prospecting or mining with draglines, dredging or heavy mechanical equipment such as bulldozers, and transportation of mining equipment



by mechanized means by undertaken only after the preparation and review of an Environmental Impact Statement and the issuance of a permit by the Bureau of Land Management.

Issuance of such a permit would take into account the extent of impairment of the scenery. Transportation of equipment by motorized means would consider such this as the necessity for constructing new or significantly altering existing overland access routes to the river, the possibility of movement of heavy equipment to and from the claim during winter months and the feasibility of using aircraft.

- To the extent practicable mined materials will be returned to their original place by backfilling into the excavation.

When the mining operation has concluded or a phase completed, the surface should be given a reasonable amount of sloping of tailing piles to conform to the topography and a covering of overburden replaced.

- To the maximum extent possible, a screening of natural vegetation shall be retained between the mining operation and the riverbank.

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Scientific

Special recognition of the opportunity for scientific study in a natural, outdoor laboratory is recommended. In cooperation with the University of Alaska, Fairbanks, the Northern Institute of Forestry and other scientists selected areas within the river corridor and adjacent areas should be identified and protected as scientific preserves. This should include undisturbed representative samples of: Alpine Tundra; Flood Plain White Spruce and Successional Stands of Balsam Poplar and Black Cottonwood; Upland Forest of Aspen, Spruce and Birch; and Black Spruce-Tamarack.

Since much of the Charley River basin now reflects little of man's activities, it is further recommended that bench-mark data be developed for all areas proposed for development within the entire basin prior to the development. By this means scientific measurement of change can be used to provide better management and development plans for public and private resources in other subarctic areas of Alaska.

The Charley River band of Dall Sheep should be studied.



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The following chart describes in more detail the application of the above concepts to the proposed Charley Wild River, Alaska.

## WILD RIVER AREA

Overall: Provide a high quality outdoor recreation experience

Maintain and protect free-flowing character

Maintain existing water quality

Maintain scenic integrity and primitive character with minimum evidence of man's activity

Maintain, protect and interpret special geologic, scenic, historic and scientific values

Lands: Except for minerals which may be patented on existing valid claims, transfer of lands to private or quasi-public agencies would be prohibited

Purchase, on an opportunity basis, lands or improvements

Recreation facility development would be primitive and limited to designated nodes

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Transportation and Utilities:

Paralleling roads within the <sup>river</sup> corridors  
[~~of the rivers, rivers designated as~~  
~~wild river areas~~] would be discouraged  
Provision for a road crossing of the Charley  
River between the confluence of Bonanza  
Creek and the confluence with the  
Yukon River can be made

Any need for substantial construction  
of a road into the headwater areas of  
the Charley River basin would result  
in reclassification of river segment  
River corridor will be closed to all ATV use  
Access to and from valid mining claims in  
the river corridor <sup>on those</sup> subsequently patented  
will be considered on a case-by-case  
basis. Primary consideration will  
be given to selecting the route and  
means of transportation which will  
minimize impacts on the existing  
environment of the river corridor  
Hiking and horseback trails may be developed  
as need arises



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Travel by motorized boats is not appropriate  
above Bear Creek

Aircraft landing will be at designated  
areas

One or two selected airstrips will be  
constructed to permit air access to  
the upper basin

Utility corridors (phone, electrical, gas,  
etc.) should be planned to follow  
transportation corridors

Minerals: Wild river areas will be closed to location  
and entry under the U.S. mining laws  
and the mineral leasing laws

Existing valid claims will be protected  
for a period of 5 years

Mining operations will be subject to re-  
gulation by the Secretary of the Interior  
to provide safeguards against pol-  
lution and unnecessary impairment  
of the scenery

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Timber: There will be no sales and no free-use permits

Grazing: There will be no commercial grazing of livestock  
in the river corridor

Grazing of livestock used for recreational  
purposes will be limited if adverse  
environmental impact occur

Watershed and Soils:

Stabalization of natural erosion or clearing  
of snags, sweepers, or log jams will not  
occur

Cooperate with appropriate Federal and State  
agencies and private land owners to reduce  
man caused siltation and water pollution  
on adjacent lands.

Wildlife and Fisheries:

Hunting, fishing and trapping will continue  
under State administration

Manipulation of wildlife or fish habitat will  
be discouraged

Recreational use will be limited if serious  
depletion of fish and wildlife occurs. For  
example, a reduced bag limit for fish or  
minimum size limits would be recommended to  
maintain a natural fishery as an alternative



to put-and-take stocking of hatchery fish  
Introduction of non-native species of fish and  
wildlife will be discouraged

Recreation:

A high quality outdoor recreation experience  
stresssing individual communication with  
nature in primitive setting will be  
provided

Facilities will be located at designated nodes,  
will be of primitive character, i.e., generally  
only fireplace grill and sanitation.

Special management to restrict litter and  
pollution will be required. Cans, bottles  
and other non-burnable food and drink  
containers will be prohibited if a "bring-  
out-what-you-take" program proves inadequate.  
Appropriate sanitation facilities will be  
constructed as necessary at designated nodes.

Informational signing will be discouraged  
except at designated nodes or at special  
sites. Information on hazards,  
recreation opportunities, or related information  
will be provided only at entrance points.

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A bench-mark system to measure visitor impact on the existing environment will be established. When adverse impacts, such as a significant reduction of key index plant, or fish, recreational use will be limited

Scientific: Identify and protect representative

samples of undisturbed plant communities

Establish a measurement system to scientifically measure change before development takes place

Determine the range and habitat requirements of the Charley River band of Dall sheep

Protection:

Restrict uses which significantly increase the threat of wildfire

Develop plans for prevention of suppression of wildfires including strong, coordinated initial attack in the river corridor and adjacent lands. No mechanical construction of fire lanes within the river corridor will be permitted

A positive program to protect historically important sites and artifacts will be implemented



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A positive program to protect critical habitat for rare and endangered species of wildlife would be implemented. These will include restriction of public recreation use in the close proximity of bald eagle nesting sites and bluffs used as nesting areas by the peregrine falcon.

A stream gauging system to inform public of safe water conditions for small watercraft will be developed.

Recreation Development Plan

Implementation of a final plan would depend upon: (1) favorable action by the Congress to include the Charley River and its principal tributaries in the National Wild and Scenic Rivers System; (2) the designated Federal manager; (3) the degree to which Natives and the State wish to participate; (4) ownership of adjacent lands; and, (5) selection of areas for scientific study.

Accordingly, a generalized plan remains to be developed.

Estimates of costs and manpower for implementation of the recreation development plan also must be developed.

Administration

The overall administration of the proposed Charley Wild River, Alaska will be assigned by the Congress taking into account the recommendations of the various Federal departments,

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the Governor of Alaska and the Joint Federal-State Land Use Planning Commission.

Potential administrative arrangements include the U.S. Forest Service, National Park Service, Bureau of Land Management and the Environmental Protection Agency.

The State of Alaska will continue to manage hunting, fishing and trapping resources of the Charley River basin. The matter of ownership of the stream beds in the Charley River under the State definition of navigability is yet to be determined.

The U.S. Forest Service fully concurs with the recommendation that the Charley River possesses those qualities and is a good potential for inclusion in the National Wild and Scenic Rivers System. Although that agency has recommended establishment of a Fortymile National Forest which would include the Charley River basin, there are no plans which can be related to the river corridor, even in conceptual form.

The National Park Service is studying the historic and natural resources of the Yukon River between Eagle and Circle. The Charley River upstream to the vicinity of Bonanza Creek is also included within the national conservation withdrawal for the Yukon River study. Plans for managements of the Charley River under multiple-use objectives as part of the Yukon River area will be incorporated when received.



The Bureau of Land Management is, and has been, the manager of lands in the Charley River basin. That agency would be manager of the adjacent "public interest" lands adjoining the river corridor and would continue to be responsible for wildfire suppression. The management and development concepts for the recommended Charley Wild River reflect those programs.

The Environmental Protection Agency will be responsible for water pollution enforcement with or without a wild river program. This responsibility is reflected in the proposed plan for protecting and maintaining the special and virtually undisturbed environments of the Charley River basin.

Concepts presented in this report will be refined by the agency designated by the Congress as new data becomes available and land and resource programs for adjacent areas become more certain.

Because of the high scientific values which can provide data and the high need to coordinate Federal, State, Native and private use of the resources of the Charley River basin, it is recommended that a Federal manager be designated for the proposed Charley Wild River, Alaska.

Should a national forest be established by the Congress the Forest Service would be the recommended Federal managing agency. In such an event, it is further recommended that



the Congress also establish the Charley River and its principal tributaries as discussed in this report as a unit of the National Wild & Scenic Rivers System and that the Forest Service subscribe to the notes concepts of classification, management and development.

Should the entire basin be designated as a unit of the National Park Service with provisions for compatible multiple uses such as hunting, the National Park Service would be the recommended Federal land manager.

The Bureau of Land Management is responsible for the entire basin and would continue to be the manager of at least the upper two-thirds of the basin, should the "public interest" status be returned; has and will continue to be the agency responsible for wildfire suppression; and, is a prominent choice for continued management of the Charley Wild River. Should the Yukon River being studied by the National Park Service also be included as a unit of the national park system, a coordinated management program will be necessary for the entire Charley River basin.

The Federal land manager should coordinate activities with prime consideration to scientific values. A successful program for the basin will require active cooperation of the State of Alaska, Natives and the Environmental Protection Agency.

Economic Effects if the Charley River and its Principal  
Tributaries are Included in the National Wild & Scenic  
River System

Reasonably foreseeable and existing uses that would be enhanced

A high quality outdoor recreation experience would be possible with implementation of the recommended program. Recreation use however, will be slight in numbers but can contribute to the local economy by the purchase of equipment and supplies, guiding services and provisions of transportation to and from the Charley River basin.

By the year 2000 it is anticipated that annual recreation use would not exceed 1800 participation days exclusive of hunting and fishing. By primary activity these are:

Canoeing-----	800
Undeveloped camping-----	680
Hiking-----	<u>310</u>
	1790

It is estimated that the above use is approaching-- or possibly exceeding--the capability of the resource when the primary objective to retain its present untrammelled condition.

Hunting for moose could probably be increased, but hunting of the Charley River band of Dall sheep and the Steese-Fortymile Caribou is considered not to be in balance



with critical habitat needs of these animals. Fishing should experience only modest increase and would be in direct proportion to the increase of anticipated activities such as canoeing noted above.

One primary enhancement of people through designation of the recommended Charley River is expected to be in the development of scientific data. This has no measurable economic benefit as such but scientific data obtained in the Charley River basin could lead to better development of the public resources in the Alaskan subarctic.

Air transportation into the upper basin would be improved.

Reasonably foreseeable or existing uses that would be foreclosed or curtailed

Mining of public minerals within the river corridor with the exception of existing valid rights would be foreclosed. It is questionable that there are any economic effects since there has been no historic production of gold or other metallic minerals within the entire river basin.

Construction of surface transportation into the river basin would be curtailed. Motorboat use above Bear Creek would be prohibited. Present motorboat use above Bear Creek does not exceed three or four boats a year.



T. 9 S., Rs. 15 and 18 W., that portion north of the Elum Indian Reservation.  
 T. 6 S., Rs. 34 through 38 W.  
 T. 6 S., Rs. 39 and 40 W. (fractional).  
 T. 7 S., Rs. 20 and 21 W., 26 through 29 W., and 31 through 37 W.  
 T. 7 S., Rs. 38 and 39 W. (fractional).  
 T. 8 S., Rs. 20 and 21 W., 26 through 29 W., and 31 through 38 W.  
 T. 9 S., R. 31 W.  
 T. 10 S., R. 31 W.  
 T. 11 S., Rs. 27 through 31 W. (fractional).  
 T. 12 S., R. 31 W. (fractional).  
 T. 21 S., Rs. 10 and 11 W.  
 T. 21 S., R. 12 W. (fractional).  
 T. 22 S., R. 11 W.  
 T. 22 S., Rs. 12 and 13 W. (fractional).  
 T. 23 S., R. 12 W.  
 T. 23 S., Rs. 13 through 15 W. (fractional).  
 T. 24 S., Rs. 13 through 15 W.  
 T. 26 S., Rs. 19 and 20 W.  
 T. 27 S., Rs. 19 and 20 W.  
 T. 28 S., Rs. 19 and 20 W.  
 T. 21 N., R. 11 E.  
 T. 22 N., Rs. 11 and 12 E.  
 T. 23 N., Rs. 7 through 11 E., and 12 E. ( $S\frac{1}{2}$ ).  
 T. 24 N., Rs. 8 through 10 E., and 11 E. ( $W\frac{1}{2}$ ).  
 T. 25 N., R. 9 E. ( $E\frac{1}{2}$ ), and R. 10 E.  
 T. 6 S., Rs. 2 and 3 E.  
 T. 6 S., Rs. 12 through 18 E., and 29 E.  
 T. 7 S., Rs. 12 through 14 E., and 29 E.  
 T. 8 S., Rs. 12 through 14 E., 23 and 23 E.  
 T. 9 S., Rs. 13 and 14 E.  
 T. 10 S., Rs. 13 and 14 E.  
 T. 12 S., Rs. 8 through 10 E.  
 T. 13 S., Rs. 7 through 10 and 22 through 29 E.

T. 13 S., R. 30 E. (fractional).  
 T. 14 S., Rs. 22 through 29 E.  
 T. 14 S., R. 30 E. (fractional).  
 T. 15 S., Rs. 22 through 22 E.  
 T. 15 S., R. 30 E. (fractional).  
 T. 20 S., Rs. 28 through 30 E.  
 T. 21 S., Rs. 27 through 30 E.  
 T. 22 S., R. 26 E.  
 T. 23 S., R. 26 E.  
 T. 24 S., R. 26 E.  
 T. 23 S., Rs. 25 through 27 E.  
 T. 26 S., Rs. 25 through 27 E.  
 T. 27 S., Rs. 25 through 27 E.  
 T. 28 S., Rs. 17 through 19, and 27 E.  
 T. 29 S., R. 27 E. (fractional).

## COPPER RIVER MERIDIAN

## PROTRACTED DESCRIPTIONS

T. 11 N., Rs. 16 through 23 E.  
 T. 12 N., Rs. 22 and 23 E.  
 T. 13 N., R. 22 E.  
 T. 13 N., R. 23 E. (fractional).  
 T. 14 N., Rs. 21 and 22 E.  
 T. 14 N., R. 23 E. (fractional).  
 T. 25 N., R. 14 E.  
 T. 23 N., Rs. 11 through 13 E.  
 T. 27 N., Rs. 11 through 13 E.  
 T. 23 N., Rs. 5 through 22 E. (fractional).  
 T. 3 N., Rs. 4 through 7 W.  
 T. 9 N., Rs. 3 through 8 W.  
 T. 10 N., Rs. 3 through 8 W.  
 T. 11 N., Rs. 3 through 8 W.  
 T. 14 N., R. 8 W. (fractional).  
 T. 7 S., Rs. 17 and 18 E.  
 T. 8 S., Rs. 16 through 18 E.  
 T. 2 S., R. 37 E. (fractional) east of Tongass National Forest and south of Mt. Jette.  
 T. 22 S., R. 38 E. (fractional).  
 T. 23 S., R. 37 E. east of Tongass National Forest.  
 T. 23 S., Rs. 38 and 39 E. (fractional).  
 T. 24 S., R. 37 E. east of Tongass National Forest.  
 T. 24 S., Rs. 38 and 39 E. (fractional).  
 T. 25 S., Rs. 38 E., east of Tongass National Forest.  
 T. 25 S., R. 39 E.  
 T. 35 S., Rs. 40 and 41 E. (fractional).

T. 26 S., R. 38 E., east of Tongass National Forest.  
 T. 26 S., Rs. 39 through 43 E.  
 T. 27 S., R. 38 E., east of Tongass National Forest.  
 T. 27 S., Rs. 39 through 41 E.  
 T. 27 S., Rs. 42 and 43 E. (fractional).  
 T. 28 S., Rs. 37 through 41 E.  
 T. 28 S., R. 42 E.  
 T. 28 S., Rs. 43 and 44 E. (fractional).  
 T. 29 S., Rs. 42 and 43 E.  
 T. 29 S., Rs. 38 through 41 E., north of Tongass National Forest.  
 T. 29 S., Rs. 44 and 45 E. (fractional).  
 T. 30 S., Rs. 39 through 41 E., north of Tongass National Forest.  
 T. 30 S., Rs. 42 and 43 E. (fractional).  
 T. 30 S., R. 44 E.  
 T. 30 S., Rs. 45 and 46 (fractional).  
 T. 31 S., R. 42 E., east of Tongass National Forest.  
 T. 31 S., Rs. 43 and 44 E.  
 T. 31 S., Rs. 45 and 46 E. (fractional).  
 T. 31 S., R. 47 E. (fractional).  
 T. 32 S., R. 42 E., east of Tongass National Forest.  
 T. 32 S., Rs. 43 through 46 E.  
 T. 32 S., R. 47 E. (fractional).  
 T. 33 S., R. 43 E., east of Tongass National Forest.  
 T. 33 S., Rs. 43 through 46 E.  
 T. 33 S., R. 47 E. (fractional).  
 T. 34 S., Rs. 44 through 47 E.  
 T. 34 S., R. 48 E. (fractional).  
 T. 35 S., Rs. 45 through 47 E., north of Glacier Bay.

## FAIRBANKS MERIDIAN

## PROTRACTED DESCRIPTIONS

T. 1 N., Rs. 18 through 25 E.  
 T. 2 N., Rs. 18 through 25 E.  
 T. 3 N., Rs. 19 through 25 E.  
 T. 4 N., Rs. 20 through 25 E.  
 T. 8 N., R. 13 E.  
 T. 1 N., Rs. 18 through 26 W.  
 T. 1 N., R. 27 W. (fractional).  
 T. 2 N., R. 18 W.  
 T. 3 N., R. 18 W.  
 T. 4 N., R. 18 W.  
 T. 25 N., R. 25 W. (fractional).  
 T. 26 N., Rs. 15 and 16 W.  
 T. 26 N., R. 25 W. (fractional).  
 T. 27 N., Rs. 15 and 16 W.  
 T. 28 N., Rs. 14 through 16 W.  
 T. 29 N., Rs. 13 through 15 W.  
 T. 30 N., Rs. 14 through 16 W.  
 T. 31 N., R. 14 through 16 W.  
 T. 32 N., Rs. 14 through 17 W.  
 T. 1 S., Rs. 13 through 26 W.  
 T. 1 S., R. 27 W. (fractional).  
 T. 2 S., Rs. 14 through 17 W.  
 T. 3 S., Rs. 14 through 17 W.  
 T. 4 S., Rs. 14 through 17 W.  
 T. 5 S., Rs. 13 through 17, and 27 W.  
 T. 6 S., Rs. 15 through 17, and 27 W.  
 T. 7 S., Rs. 13, 14, 16, 17, and 27 W.  
 T. 8 S., Rs. 11 through 14 W., 17 and 27 W.  
 T. 9 S., Rs. 10 through 15 W.  
 T. 10 S., Rs. 9 through 14 W.  
 T. 11 S., R. 17 W. ( $W\frac{1}{2}$ ).  
 T. 11 S., Rs. 18 through 20 W.  
 T. 12 S., Rs. 18 through 21 W.  
 T. 13 S., Rs. 19 through 22 and 27 W.  
 T. 14 S., R. 23 W. (fractional).  
 T. 14 S., Rs. 22 and 23 W.  
 T. 14 S., R. 27 W.  
 T. 14 S., R. 23 W. (fractional).  
 T. 15 S., Rs. 23 through 27 W.  
 T. 15 S., R. 23 W. (fractional).  
 T. 16 S., Rs. 25 through 27 W.  
 T. 17 S., Rs. 26 and 27 W.  
 T. 18 S., Rs. 26 and 27 W.  
 T. 19 S., R. 10 W.  
 T. 19 S., R. 11 W.

secs. 11 through 14, 21 through 28, and 33 through 35

T. 19 S., Rs. 26 through 23 W.  
 T. 20 S., R. 11 W.  
 T. 20 S., R. 12 W.  
 secs. 11 through 16, 21 through 29, and 31 through 38  
 T. 20 S., Rs. 26 through 28 W.  
 T. 21 S., R. 12 W.  
 T. 21 S., R. 13 W. ( $E\frac{1}{2}$ ).  
 T. 21 S., Rs. 26 through 23 W.  
 T. 22 S., R. 13 W. ( $E\frac{1}{2}$ ).  
 T. 1 S., Rs. 15 through 17 E., that portion south of the Military Reservation.  
 T. 1 S., Rs. 18 through 20 E.  
 T. 2 S., Rs. 18 through 25 E.  
 T. 3 S., Rs. 18 through 23 E.  
 T. 4 S., Rs. 18 through 23 E.  
 T. 5 S., R. 23 E.

## SEWARD MERIDIAN

## PROTRACTED DESCRIPTIONS

T. 1 N., Rs. 26 through 29 W.  
 T. 1 N., Rs. 67 through 70 W.  
 T. 2 N., Rs. 25 through 28 W.  
 T. 2 N., Rs. 57 through 70 W.  
 T. 3 N., Rs. 23 through 30 W.  
 T. 3 N., Rs. 67 through 70 W.  
 T. 4 N., Rs. 30 and 31 W.  
 T. 4 N., Rs. 67 and 68 W.  
 T. 5 N., Rs. 68 through 68 W.  
 T. 6 N., Rs. 68 through 68 W.  
 T. 7 N., R. 68 W.  
 T. 13 N., Rs. 53 and 54 W.  
 T. 21 N., Rs. 32 and 37 W.  
 T. 22 N., Rs. 32 and 37 W.  
 T. 23 N., Rs. 32, and 37 through 39 W.  
 T. 24 N., Rs. 32, and 37 through 39 W.  
 T. 25 N., Rs. 38 through 38 W.  
 T. 26 N., Rs. 38 through 38 W.  
 T. 27 N., Rs. 38 through 38 W.  
 T. 28 N., R. 34 W. ( $N\frac{1}{2}$ ).  
 T. 28 N., Rs. 35 through 37 W.  
 T. 31 N., Rs. 36 through 38 W.  
 T. 34 N., Rs. 50 and 51 W. (fractional).  
 T. 1 S., Rs. 26 through 33 W.  
 T. 1 S., Rs. 68 through 71 W.  
 T. 2 S., Rs. 68 through 71 W.  
 T. 3 S., Rs. 68 through 71 W.  
 T. 7 S., R. 49 W.  
 T. 10 S., Rs. 28 and 29 W. (fractional).  
 T. 10 S., R. 30 W.  
 T. 11 S., R. 29 W. (fractional).  
 T. 11 S., Rs. 30 through 33 W.  
 T. 12 S., Rs. 31 and 32 W.  
 T. 29 S., Rs. 47 and 43 W. (fractional).  
 T. 41 S., Rs. 50 and 51 W. (fractional).  
 T. 43 S., Rs. 51 and 53 W. (fractional).  
 T. 44 S., Rs. 63 and 64 W.  
 T. 45 S., Rs. 54, and 64 through 65 W.  
 T. 46 S., Rs. 54 through 57 W.  
 T. 47 S., R. 68 W.  
 T. 48 S., Rs. 68 and 69 W.  
 T. 49 S., R. 69 W.  
 T. 50 S., R. 70 W.  
 T. 50 S., Rs. 69, 71, and 72 W. (fractional).

## UMAT MERIDIAN

## PROTRACTED DESCRIPTIONS

T. 1 S., Rs. 46 and 47 W. (fractional).  
 T. 2 S., R. 46 W.  
 T. 2 S., Rs. 47 and 43 W. (fractional).

2. The specified portions of the following designated townships are withdrawn by Public Land Order No. 5179 of March 9, 1972, as amended, and will remain withdrawn. The lands in this paragraph are, therefore, excepted from the addition to Public Land Order No. 5181 by paragraph 1 of this order:

All lands within the protracted survey section which are wholly or in part within one mile of the mean high water mark of the river's banks and all islands and islets within the following named rivers and their named tributaries as they traverse the following described lands:



**Charley River**

**COPPER RIVER MERIDIAN**

**TRACTED DESCRIPTIONS**

T. 1 N., R. 1 E.  
T. 2 N., Rs. 1 and 2 E.  
T. 3 N., Rs. 1, 2, and 3 E.  
T. 4 N., Rs. 3, 24, and 25 E.  
T. 5 N., R. 1 E.  
T. 6 N., R. 1 E.  
T. 1 S., R. 1 E.  
T. 2 S., R. 1 E.  
T. 3 S., Rs. 19, 20, 21, and 23 E.  
T. 4 S., Rs. 19, 20, 21, 22, and 23 E.  
T. 5 S., R. 1 E.

**Copper Creek (tributary)**

T. 1 N., R. 1 E.  
T. 1 S., Rs. 22, 23, 24, and 25 E.  
T. 2 S., Rs. 22 and 23 E.

**Godde Creek (tributary)**

T. 1 N., R. 1 E.  
T. 1 S., Rs. 21 and 23 E.

**Hosford Creek (tributary)**

T. 1 N., Rs. 21 and 22 E.

**Crescent Creek (tributary)**

T. 1 N., R. 1 E.  
T. 2 N., Rs. 13, 20, and 21 E.

**Bonanza Creek (tributary)**

T. 4 N., R. 23 E.

**Gulkana River (including West Fork)**

**COPPER RIVER MERIDIAN**

**TRACTED DESCRIPTIONS**

**Main Stem**

T. 10 N., R. 2 W.  
T. 11 N., R. 2 W.

**West Fork**

T. 3 N., Rs. 6 and 7 W.  
T. 9 N., Rs. 3, 4, 5, 6, and 7 W.  
T. 10 N., Rs. 3, 4, 5, 6, and 7 W.

**Chitina River**

**COPPER RIVER MERIDIAN**

**TRACTED DESCRIPTION**

T. 8 S., Rs. 13, 17, and 18 E.

**Ambler River**

**KATIE RIVER MERIDIAN**

**TRACTED DESCRIPTIONS**

T. 23 N., R. 9 E.  
T. 24 N., R. 9 E.  
T. 25 N., R. 9 E. (34)  
T. 25 N., R. 10 E.

3. Subject to valid existing rights, all of the lands described in paragraph 1 of this order, less those excepted in paragraph 2, are added to Public Land Order No. 5120, as amended by Public Land Order No. 5133, and immediately become subject to all of the terms and conditions of that order, including the withdrawal of the lands from selection by the State of Alaska under the Alaska Statehood Act, 72 Stat. 333, and from location and entry under the mining laws (except for locations for metalliferous minerals), 30 U.S.C. Ch. 2, and from leasing under the Mineral Leasing Act of February 25, 1920, as amended, sections 181-237 (1970). Any use or disposition permitted by this order but forbidden by earlier withdrawals or classifications remain forbidden. Any use or disposition forbidden by this order but permitted by an earlier withdrawal or classification is

forbidden. With the exceptions noted in paragraph 2, any of the lands described in this order are deleted from those listed in paragraph 1 of Public Land Order No. 5173, as amended by Public Land Order No. 5192.

The purpose of this order is to supplement Public Land Order No. 5160, as amended by Public Land Order No. 5193, by reserving additional lands for study to determine the proper classification of the lands and to ascertain the public values in the lands that need protection, as provided for by section 17(d)(1) of the Act.

4. While the lands described in this order remain withdrawn, the lands shall be subject to administration by the Secretary of the Interior under applicable laws and regulations and his authority to make contracts, and to grant leases, permits, rights-of-way, or easements shall not be impaired by this withdrawal. New applications for leases under the Mineral Leasing Act of February 25, 1920, supra, will be rejected until this order is modified or the lands are appropriately classified to permit mineral leasing.

5. It is hereby determined that the promulgation of this public land order is not a major Federal action significantly affecting the quality of the human environment and that no detailed statement pursuant to section 102(2)(C) of the National Environmental Policy Act of 1969, 42 U.S.C. section 4332(2)(C), is required.

ROGER C. B. MORTON,  
Secretary of the Interior.

SEPTEMBER 12, 1972.

[FR Doc. 72-13722 Filed 9-15-72; 9:42 am]

[Public Land Order 5252]

**ALASKA**

**Amendment of Public Land Orders No. 5173, No. 5176, and No. 5178 as Amended**

By virtue of the authority vested in the Secretary of the Interior by section 11(a)(3) of the Alaska Native Claims Settlement Act of December 18, 1971, 85 Stat. 688, 696 hereinafter referred to as the "Act", and pursuant to Executive Order No. 10355 of May 25, 1962 (17 F.R. 4631), it is ordered as follows:

1. Public Land Order No. 5173 of March 9, 1972, as amended by Public Land Order No. 5191 of March 17, 1972, and No. 5213 of May 30, 1972, withdrawing lands for selection under section 12 of the Act by the Regional Corporation for the approximate area covered by the operations of the Tanana Chiefs Conference, is hereby amended to make the following described lands available for selection by the State of Alaska under the Alaska Statehood Act, 72 Stat. 333, after December 18, 1975.

**FERRANES MERIDIAN**  
**TRACTED DESCRIPTIONS**

T. 4 N., Rs. 12 and 33 E.  
T. 5 N., Rs. 31 and 32 E.  
T. 6 N., Rs. 29 through 32 E.  
T. 7 N., Rs. 29 through 32 E.

T. 8 N., Rs. 31 through 32 E.  
T. 9 N., Rs. 20 through 32 E.  
T. 10 N., Rs. 31 through 32 E.  
T. 11 N., Rs. 21 through 32 E.  
T. 12 N., Rs. 21 through 32 E.  
T. 13 N., Rs. 24 through 32 E.  
T. 14 N., Rs. 24 through 32 E.  
T. 15 N., Rs. 27 through 32 E.  
T. 16 N., Rs. 27 through 32 E.  
T. 17 N., Rs. 27 through 31 E.  
T. 18 N., Rs. 27 through 31 E.  
T. 19 N., Rs. 27 through 31 E.  
T. 20 N., Rs. 27 through 31 E.  
T. 21 N., Rs. 27 through 31 E.  
T. 22 N., Rs. 27 through 31 E.  
T. 23 N., Rs. 27 through 31 E.  
T. 24 N., Rs. 27 through 31 E.  
T. 25 N., Rs. 28, 29, and 30 E.  
T. 26 N., Rs. 28, 29, and 30 E.  
T. 27 N., Rs. 29 and 30 E.  
T. 28 N., Rs. 29 and 30 E.

The areas described aggregate approximately 3,432,960 acres.

2. Public Land Order No. 5176 of March 9, 1972, as amended by Public Land Order No. 5191 of March 17, 1972, withdrawing lands for selection under section 12 of the Act by the Regional Corporation for the approximate area covered by the operations of the Chugach Native Association, is hereby amended to make the following described lands available for selection by the State of Alaska under the Alaska Statehood Act, supra, after December 18, 1975:

**COPPER RIVER MERIDIAN**  
**TRACTED DESCRIPTIONS**

T. 7 S., Rs. 6 through 11 W.  
T. 8 S., Rs. 4, 8 through 11 W. (north of Chugach National Forest).  
T. 9 S., R. 2 W.  
T. 10 S., Rs. 2, 3, and 4 W.  
T. 10 S., R. 5 W. (east of Chugach National Forest).  
T. 11 S., Rs. 2 and 3 W.  
T. 11 S., Rs. 4 and 5 W. (east of Chugach National Forest).  
T. 12 S., R. 1 W.  
T. 12 S., Rs. 2 and 3 W. (east of Chugach National Forest).  
T. 13 S., R. 1 W. (east of Chugach National Forest).  
T. 13 S., R. 2 W. (east of Chugach National Forest).  
T. 13 S., R. 1 E. (east of Chugach National Forest).  
T. 14 S., R. 1 E. (east of Chugach National Forest).

The areas described aggregate approximately 622,030 acres.

3. Public Land Order No. 5178 of March 9, 1972, as amended by Public Land Order No. 5214 of May 30, 1972, withdrawing lands for selection under section 12 of the Act by the Regional Corporation for the approximate area covered by the operations of the Copper River Association, is hereby amended to make the following described lands available for selection by the State of Alaska under the Alaska Statehood Act, supra, after December 18, 1975:

**COPPER RIVER MERIDIAN**  
**TRACTED DESCRIPTIONS**

T. 1 N., Rs. 3 through 11 W.  
T. 2 N., Rs. 3, 4, 10, and 11 W.  
T. 1 S., Rs. 3 through 11 W.  
T. 2 S., Rs. 1 through 11 W.  
T. 3 S., Rs. 1 through 11 W.  
T. 4 S., Rs. 1 through 11 W.  
T. 5 S., Rs. 1 through 11 W.



## SMOOTH 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.*

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.

## COLD WATER PROTECTION:

Cold weather trips can be a rare delight with proper knowledge and precautions; without them, a frigid dunking can prove fatal. Specialists in physiology have determined the following "safe" immersion times for the unprotected human body:

Water temperature —	
At 40° or lower	LESS than 10 minutes
40° — 50°	5 to 20 minutes
50° — 60°	15 to 40 minutes
Above 60°	1 hour or more

Beyond these limits, even a well-conditioned athlete will soon lose all ability to cling to a boat or line, and must depend completely upon others for his rescue.

If such a rescue should be necessary, the victim should immediately be stripped of his wet clothing and "sandwiched" between two dry companions who have also disrobed, the three then being bound together with any available blankets or clothing. This massive application of warmth to a great part of the victim's body is the only protection against the phenomenon known as "after cooling," when the constricted outer blood vessels relax in the first relief from frigid water and permit supercooled blood to flow back to the heart, sometimes causing it to fail. Other rescuers should meanwhile prepare a fire for warmth and hot beverages, but because of timing, this step is secondary.

Proper dress can eliminate the need for emergency measures. Wool clothing is preferred to other fabrics since it provides some insulation even when wet. A complete change of dry clothing in a waterproof pack must be carried in the boat.

The best protection is provided by a wet suit. Wet suits are available in various styles (vests, short or long sleeves, full suits, etc.) and thickness. The style and thickness should be determined by the degree of protection desired. Some paddlers like to wear a wool sweater under the wet suit.

The paddler's head should also be protected by a wool hat, wet suit, or insulated crash helmet.