

STATE OF ALASKA

Jay S. Hammond, Governor



Annual Performance Report for

INVENTORY AND CATALOGING
INTERIOR ALASKA

by

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RESEARCH PROJECT SEGMENT

State: ALASKA Name: Sport Fish Investigations
of Alaska

Project No.: F-9-8

Study No.: G-I Study Title: INVENTORY AND CATALOGING

Job No.: G-I-L Job Title: Inventory and Cataloging of
the Sport Fish and Sport Fish
Waters of Interior Alaska,
Tanana River Drainage between
Tok and Little Delta Rivers

Period Covered: July 1, 1975 to June 30, 1976

ABSTRACT

Data collected over a 15 year period regarding surveys of thirty streams and twenty-two lakes in the Tanana River drainage between Tok and Little Delta rivers are presented.

Data collected includes a physical description, chemical and biological backgrounds and fishery data when available.

Data missing or not recorded will often be available in the future as part of a continuing program aimed at updating existing information.

BACKGROUND

The area of study, the middle Tanana valley, lies in the southeastern corner of Interior Alaska (Fig. 1). It includes the major drainages and lake systems bordered by 62° 45' N Latitude on the south, 147° 00' W Longitude on the west, 64° 30' N Latitude on the north and 142° 45' W Latitude on the east. The total area included is approximately 16,900 square miles.

The watershed (Fig. 2) is limited on the south by the Alaska Range. The hills of the Fortymile River country, the Yukon-Tanana upland, lie to the north. The Tanana River watershed exits to the northwest and opens to the southeast through the Snag River and Beaver Creek drainages. The Tanana River joins the Yukon River approximately 170 miles northwest of the study area.

Vegetation varies due to subsurface and drainage types. In areas experiencing poor drainage, high water tables, or permafrost, black spruce and rolling muskeg predominate. Willow and alder edge the ponds and watercourses. In areas where adequate drainage or recent fires have occurred, birch, aspen, cottonwood and white spruce are found.

The climate is one of harsh contrast, with spring coming as early as mid-March and snowfall with subfreezing temperatures occurring as late as June. The short, three month summers are characterized by long daylight hours and temperatures occasionally exceeding 90°F. The fall extends through early November with snowfall and decreasing temperatures. During the dead of winter from mid-November to mid-March, temperatures may plummet below -70°F. Annual precipitation averages around 12 inches with most falling between June and September.

The study area is subjected to frequent windy spells due to the proximity of the Alaska Range and passes to the south.

The lakes are generally iced over by late September and breakup can occur as late as June. Seasonal and surface runoff streams flow from May through September due to periods of spring ice melt and later summer rains. The streams fed by groundwater or springs may either run with marginal ice cover, or occasionally form glaciers over the streambed.

The Tanana valley was relatively unglaciated. However, large quantities of gravel, sand and silt were discharged by nearby glacial melt. Lake formation occurred either from the damming of drainages leading from nearby hills by silt from the Tanana River, by the melting of a former ice mass buried in the subglacial soil, or by the melt of permafrost brought upon by vegetative disturbance. Yearly precipitation regulates the levels of the majority of lakes with only those near the Tanana subject to fluctuation by river regulated water tables.

The early residents were northern Athabaskan Indians. Several transient villages existed throughout the area, most near resources that made

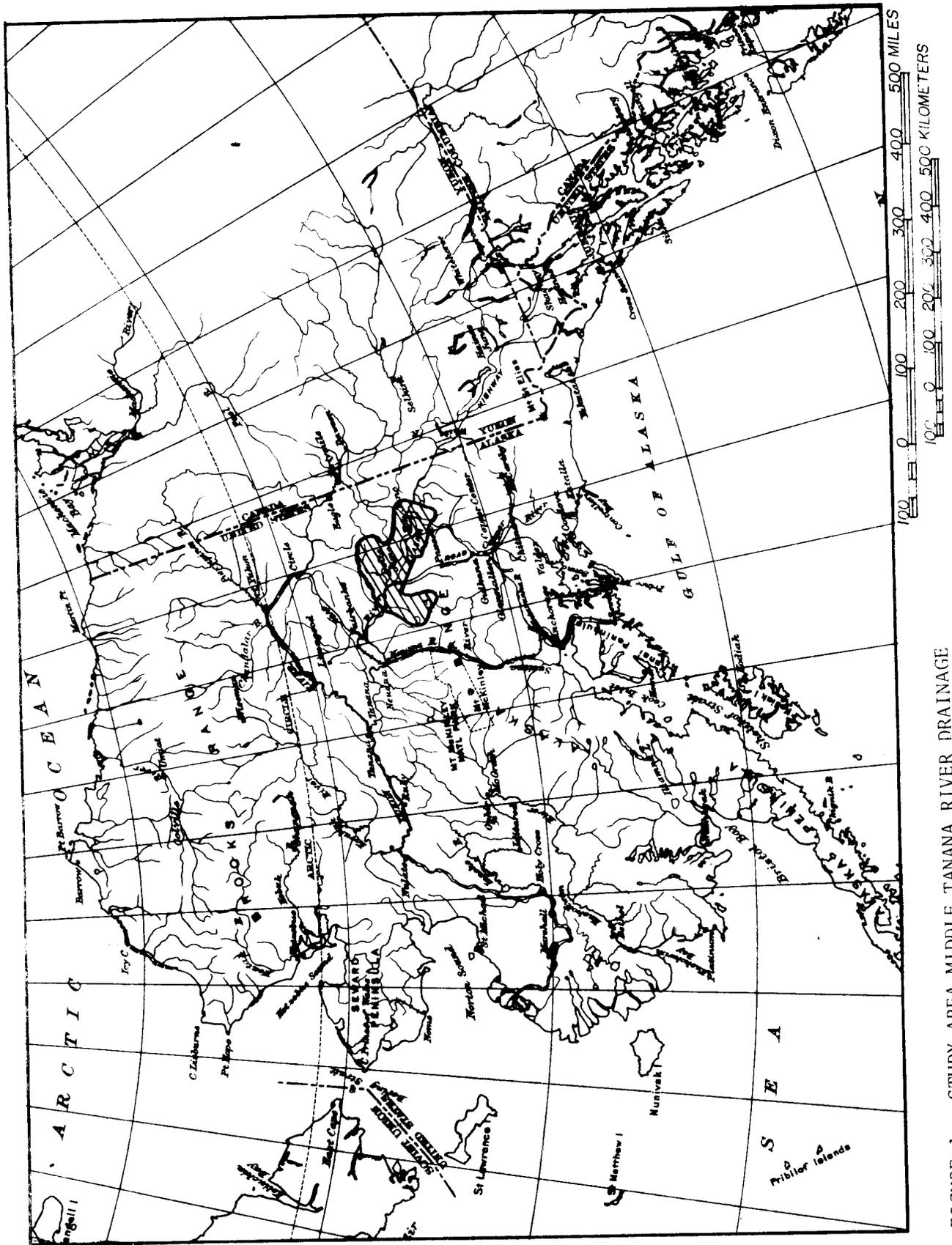


FIGURE 1: STUDY AREA MIDDLE TANANA RIVER DRAINAGE

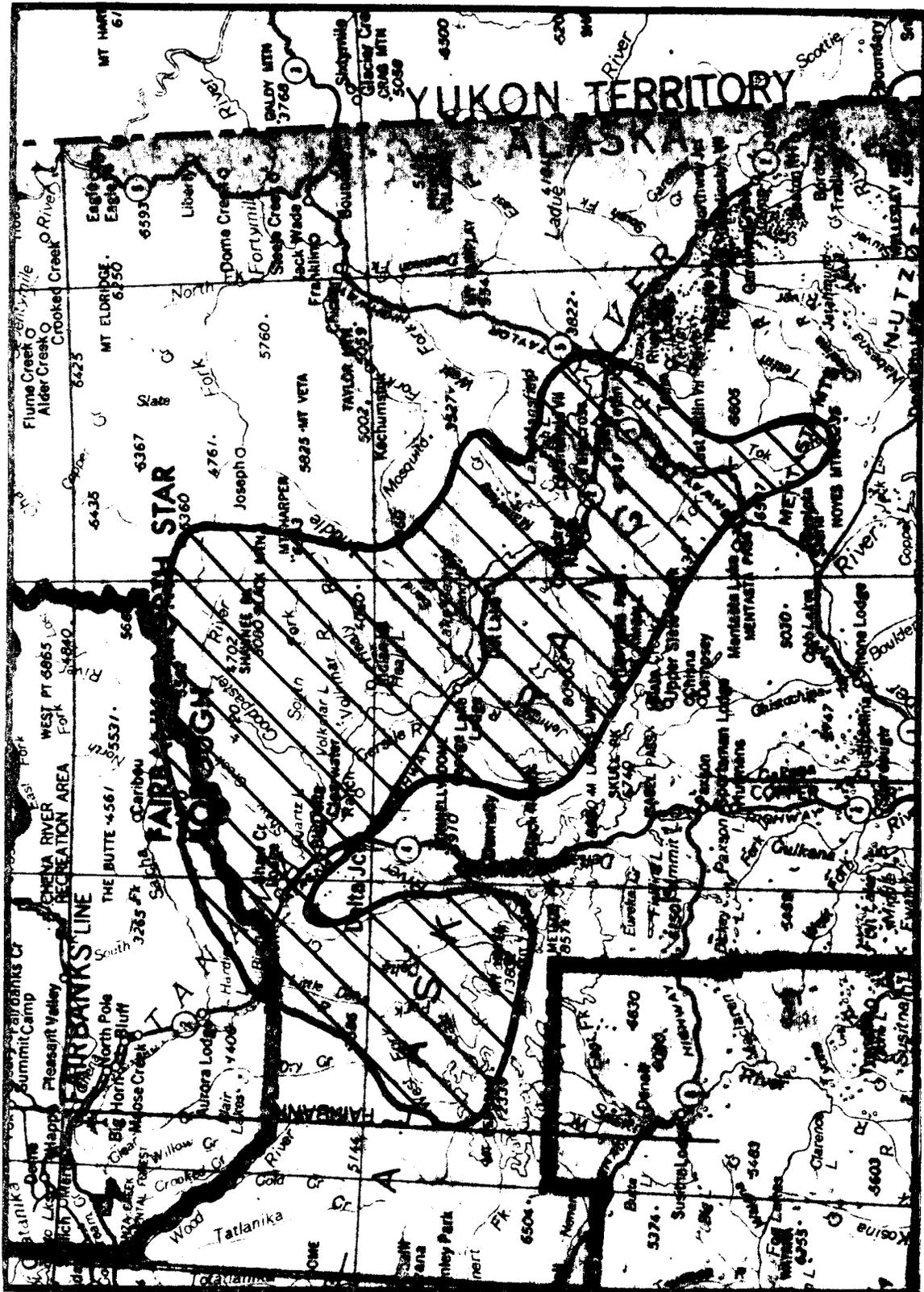


FIGURE 2: TANANA RIVER STUDY AREA

subsistence living possible. Miners, trappers, traders and survey crews came to the country in the late 1800's. These early developers as well as missionaries introduced modern culture.

Road access began in the early 1900's with the building of the trail from Valdez to Eagle and later the Richardson Highway from Valdez through Big Delta to Fairbanks. The Alaska Highway was constructed between Big Delta and Dawson Creek, B. C. over an eight month period in 1942.

The fishery resources of the area have only been superficially assessed. Fish species which have been identified from waters within the area and name abbreviations include: northern pike (NP), Esox lucius Linnaeus, Arctic grayling (GR), Thymallus arcticus (Pallas), round whitefish (RWF), Prosopium cylindraceum (Pallas), humpback whitefish (HWF), Coregonus pidschian (Gmelin), lake trout (LT), Salvelinus namaycush (Walbaum), longnose sucker (S), Catostomus catostomus (Forster), burbot (BB), Lota lota (Linnaeus), and slimy sculpin (SC), Cottus cognatus. Other species of whitefish are probably present but were not collected. Fish species introduced to closed lake systems include sheefish (SF), Stenodus leucichthys, rainbow trout (RT), Salmo gairdneri Richardson, and coho (silver) salmon (SS), Oncorhynchus kisutch (Walbaum).

To the present day, the fisheries of the Tanana Valley have remained on a low subsistence level, with whitefish being the target species. There are few, if any, cases of overexploitation by sport users. Those species most likely to experience future high use are northern pike and Arctic grayling. The following summaries have been compiled from survey data collected over the past 15 years. In most instances, some detail is lacking, especially in regard to lakes and streams remote from the highway system. These remote fisheries continue to receive little pressure. Therefore, emphasis has been and will continue to be placed on waters adjacent to the highway systems. Future plans call for rehabilitation of suitable waters and introduction of new species combined with management of those native species considered desirable.

RECOMMENDATIONS

1. To complete inventory and catalog surveys on lakes and streams in the Tanana River drainage between the Tok and Little Delta rivers.
2. To complete inventory and catalog surveys on remote area lakes and streams in the Tanana River drainage between the Alaska-Canada border and the Little Delta River.
3. To monitor fish population characteristics and angler harvest in the above waters.

OBJECTIVES

1. To review and utilize existing data on sport fish and sport fish waters of the Tanana Drainage between the Tok River and the Little Delta River to direct surveys.
2. To determine the environmental characteristics and sport fish parameters of waters in the job area.
3. To complete a report on the sport fish and sport fish waters between the Tok River and the Little Delta River.

TECHNIQUES USED

Graduated mesh monofilament gill nets 125' x 6' made from five panels with mesh sizes varying from 1/2" to 2 1/2" bar measure were used to sample the fish populations in lakes. Stream sampling was accomplished with the above nets, by alternating current shocker boat, fyke nets or the use of beach seines. The nets were usually set in pairs and for a time period as close to 24 hours as possible. The shocker boat was operated in measured downstream runs. The fyke nets were usually set for 24 hours and the beach seines used as needed. Hook and line or visual observations were also used to supplement the data when necessary.

All fish captured were measured for fork length in inches and weight in pounds, and a scale or otolith taken for age determination.

Water analyses were conducted on surface samples unless noted. Winter samples were taken with the use of a Kemmerer bottle through the ice. Water chemistry parameters measured include: dissolved oxygen (D.O.), carbon dioxide (CO₂), activity of acid or alkaline materials (pH), methyl orange alkalinity (MOA) and hardness. All but pH are expressed in parts per million (ppm). A Lowrance echo sounder was used along with a handline to determine or verify water depths.

Surface acreages were determined with a modified acreage grid from 1:63,360 scale topographic maps.

The name of the system was that popularly used by local residents. The location was defined in relation to a prominent nearby landmark or community. The position was given for the mouth of the stream or the geographic center of the lake. Stream length was for the main river channel only. The width given was an average of several readings taken in the section studied. Generally, gravel types listed were defined as: sand and silt (<0.13 in), fine (1/8-2"), coarse (2-10") and boulders (>10 in).

Table 1. Figure (Map) showing locations of surveyed waters.

Names (Streams)	Figure	Names (Streams)	Figure
Kiana Creek	3	Clearwater #3	3
Canyon Creek	3	Banner Creek	3
Richardson Clearwater	3	Clearwater #2	3
Tenderfoot Creek	3	Shaw Creek	3
Clearwater #4	3	Clearwater #5	3
Clearwater #1	3	Delta Clearwater River	3
Sawmill Creek	4,5	Gerstle River	4,5
Little Gerstle River	5	Johnson River	5
Dry Creek	5	Sears Creek	5
Berry Creek	5	Billy Creek	5,6
Chief Creek	5,6	Bear Creek	5,6
Robertson River	5,6	Sheep Creek	6
Yerrick Creek	6	Clearwater Creek	6
Tok Overflow	6	Little Tok river	6,7
Tok River	6	Trail Creek	7
(Lakes)		(Lakes)	
Quartz Lake	3	Rainbow Lake	3
Lost Lake	3	Clearwater Lake	3
Volkmar Lake	4	Donna Lake	5
Craig Lake	5	Lisa Lake	5
Twelve-Mile Lake	5	George Lake	5
Moosehead Lake	5	Long Lake	5
Monte Lake	5	Dot Lake	5
Jan Lake	6	Robertson #2 Lake	6
Forrest Lake	5	"T" Lake	6
Moon Lake	6	Moosefield Lake	6
Mineral Lake	7	Little Donna Lake	5

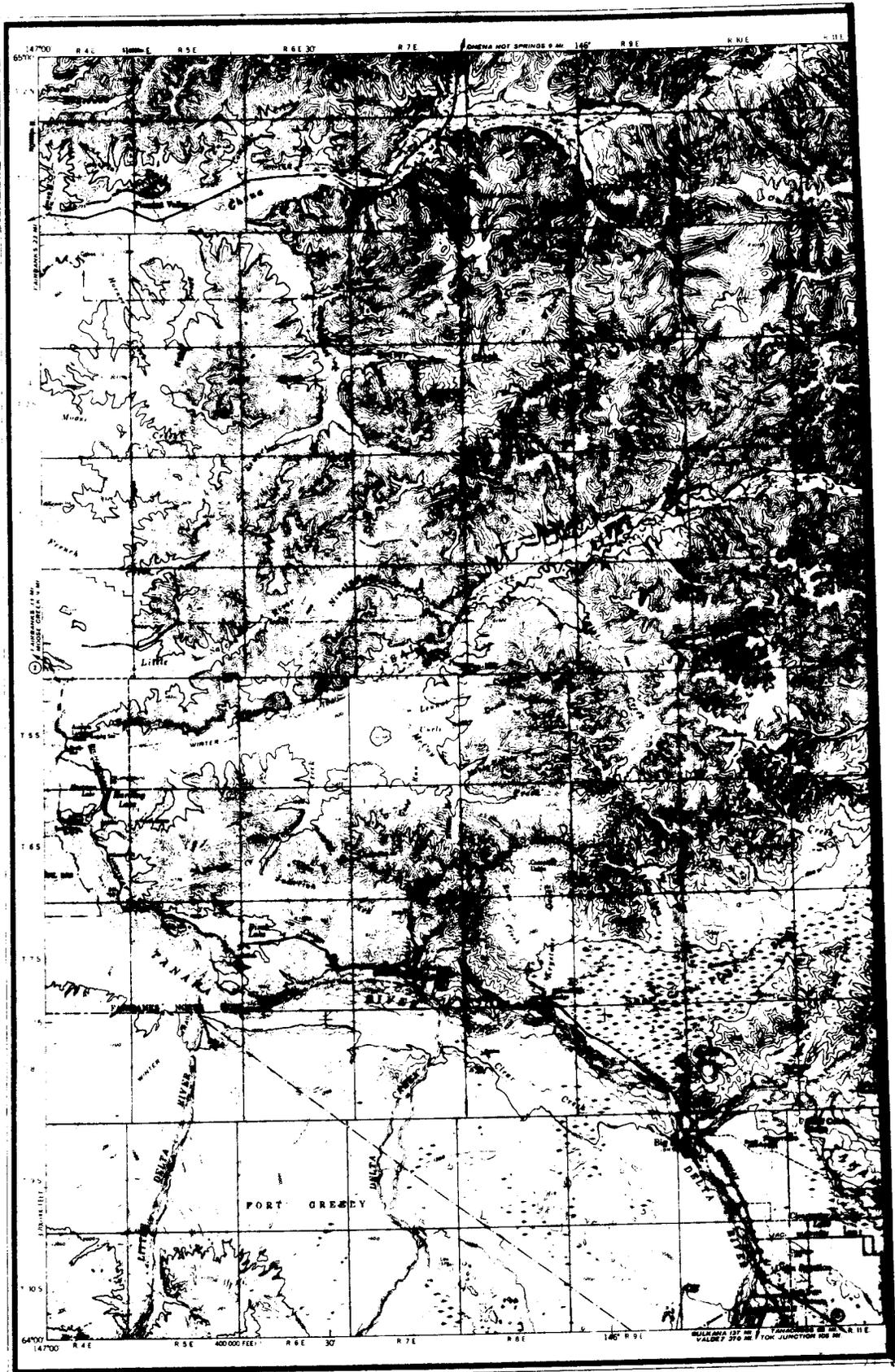
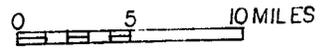


FIGURE 3: LOCATION MAP OF MIDDLE TANANA RIVER STUDY AREA



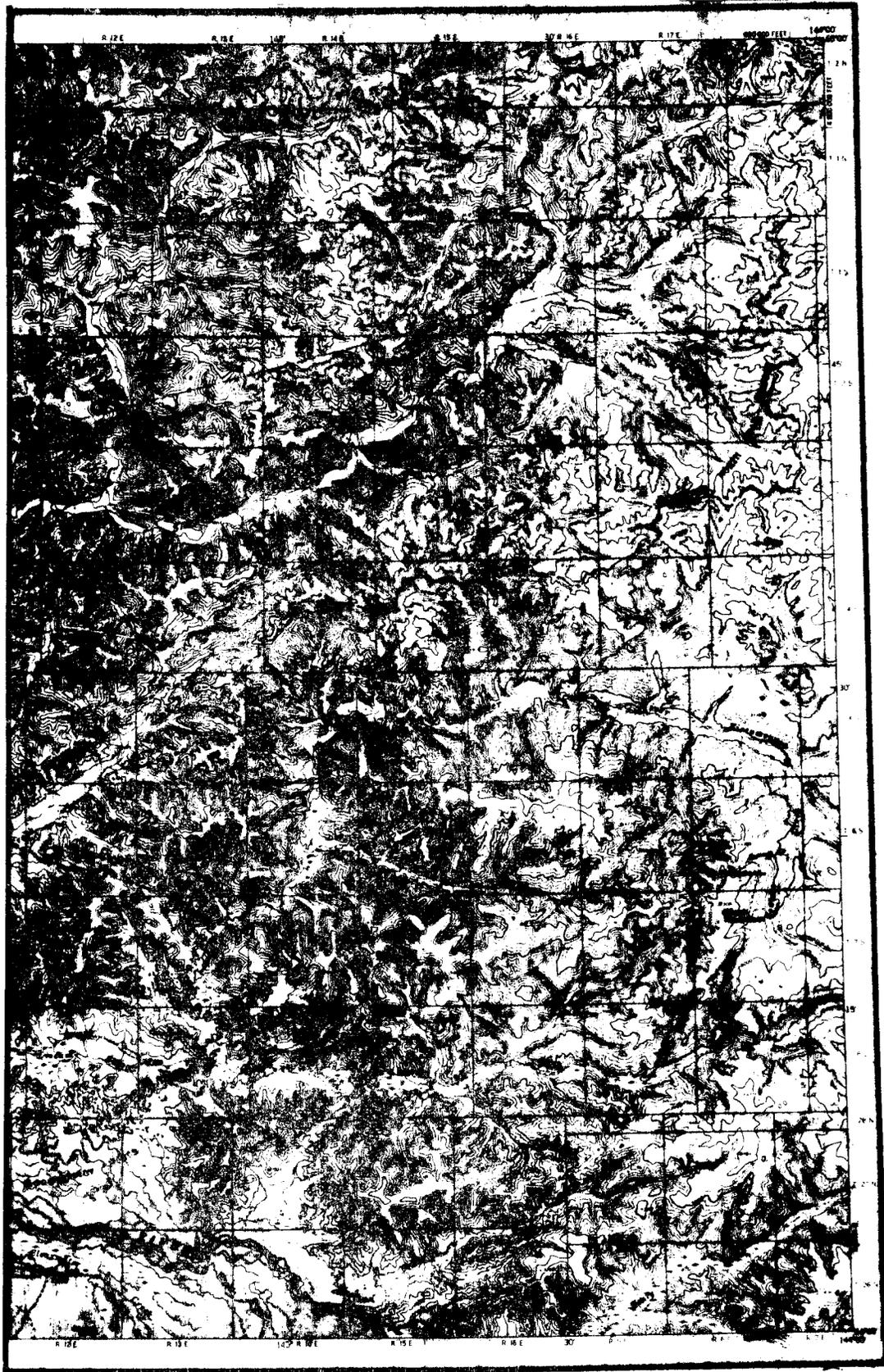


FIGURE 4: LOCATION MAP OF MIDDLE TANANA RIVER STUDY AREA



FIGURE 5: LOCATION MAP OF MIDDLE TANANA RIVER STUDY AREA

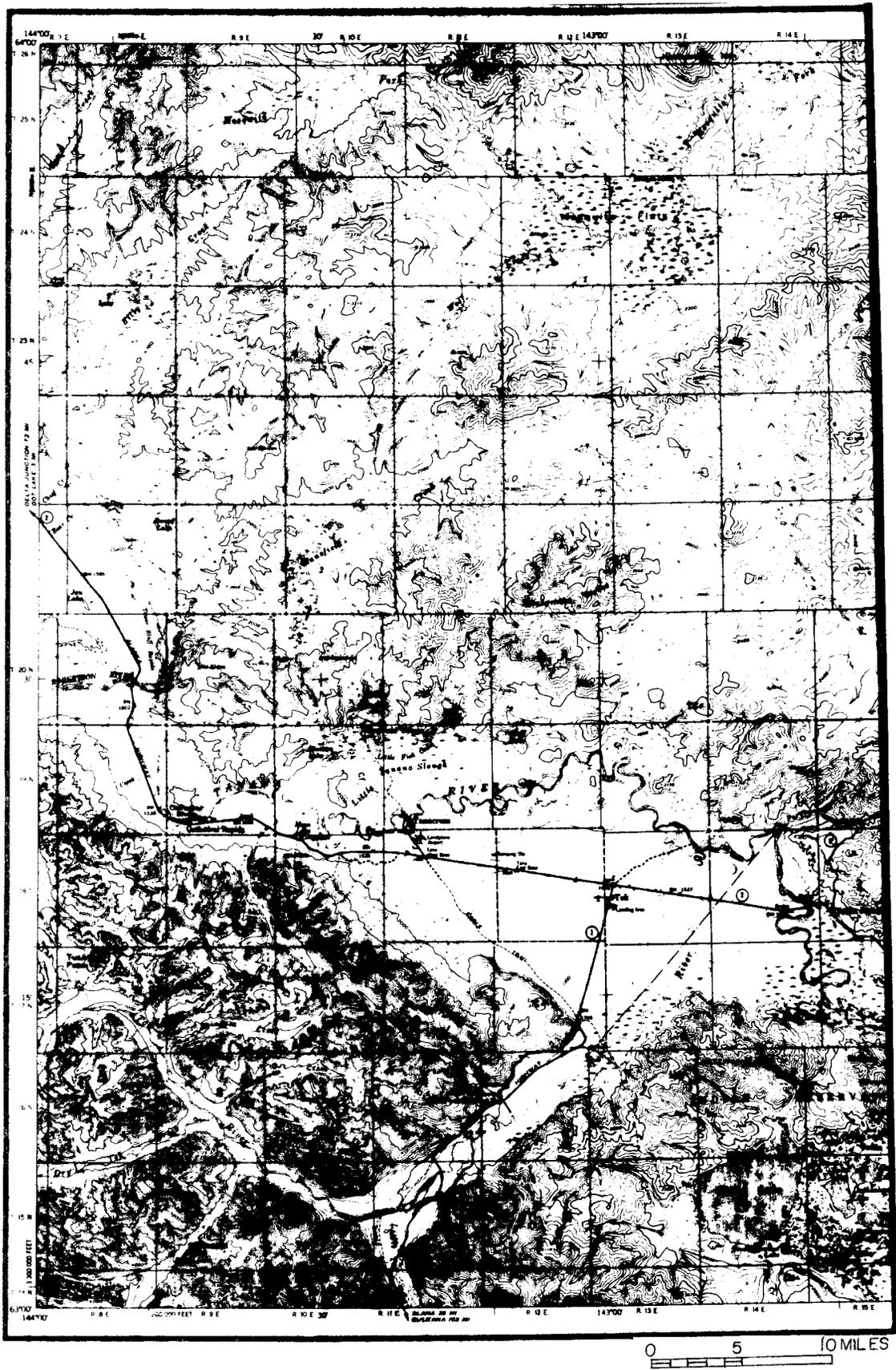


FIGURE 6: LOCATION MAP OF MIDDLE TANANA RIVER STUDY AREA



FIGURE 7: LOCATION MAP OF MIDDLE TANANA RIVER STUDY AREA

Remarks:

Banner Creek drains the hills to the north of the Alaska Highway and flows southwesterly into the Tanana River. Flows are seasonal and average 1-2 cfs. The water has a slight humic stain due to the groundwater source. The bottom is a gravel, sand combination with some mossy aquatic vegetation. Small pools are present in the lower sections. The bank cover is comprised of willow and alder with bordering bog habitat. The creek bed was used by early gold miners for placer mining and evidence of past disturbance still exists. A vehicle trail adjoins the stream for a couple of miles. Fish species present are probably grayling and whitefish although no known fishery exists.

Name of Stream: Richardson Clearwater River System: Tanana
(Clear Creek) (Clausen Creek)
Position: 64° 14' N 146° 16' W Tributary to: Tanana River
Location: Approximately one-half mile upstream from Delta Creek on the
south bank of the Tanana River
Length: (mi) 20 *Width:* (ft) 60
Water Chemistry:
Date: 8/2/74
Temperature (°F): 45
DO (ppm): 11.5
CO₂ (ppm): 20
pH: 8.5
MOA (ppm): 128
Hardness (ppm): 171

Fish Sampling Summary:

Fish species present include grayling, round whitefish and silver salmon.

Remarks:

The river draws upon spring areas and surface runoff as its source. Flows occur year-round with some ice formation during cold spells. The water is transparent and velocity averages 4 fps in fast sections. Access is through riverboat or floatplane. The bottom type varies from fine to coarse gravel and abundant aquatic vegetation can be found in upper sections. Bank cover consists of mixed willow, alder, spruce and occasional birch. Numerous shallow pools are present. Several cabins line the banks of Clear Creek and residents place high use on the grayling populations. Past progress reports have discussed these and other management implications. Constant future monitoring is recommended.

Name of Stream: Clearwater #2 River System: Tanana
Position: 64° 14' N 146° 14' W Tributary to: Tanana River
Location: One mile upstream from mouth of Richardson Clearwater Creek on
the south bank of the Tanana River
Length: (mi) 4 *Width:* (ft) 12

Water Chemistry:

Date: 8/1/74
Temperature (°F): 50
DO (ppm): 11.5
CO₂ (ppm): 13
pH: 7.5
MOA (ppm): 145
Hardness (ppm): 154

Fish Sampling Summary:

Slimy sculpin are present as probably are chum salmon in the fall.

Remarks:

Clearwater Creek depends on ground water seepage for its source and the water is colored light brown. Bottom type is silt covered coarse gravel. Few pools are present. Bank cover is willow and black spruce muskeg. The stream probably receives little fishing pressure at this time.

Name of Stream: Tenderfoot Creek
Position: 64° 16' N 146° 12' W
Location: Mile 1445 Alaska Highway
Length: (mi) 5
Water Chemistry:

River System: Tanana
Tributary to: Tanana River
Width: (ft) 5

Date: 8/3/75
Temperature (°F): 44
DO (ppm): 8
CO₂ (ppm): 20
pH: 7.0
MOA (ppm): 68
Hardness (ppm): 102

Fish Sampling Summary: No data available.

Remarks:

Tenderfoot Creek drains a valley through which the Alaska Highway runs and flows southeasterly to the Tanana River. Flows are seasonal with springs and ground runoff supplying the bulk. The water is humic stained and the bottom is comprised of fine gravel. Willows line the stream banks as do several small bogs. Early miners used the stream bed area for gold mining. Few fish are present during the summer although the creek could support a small population. Chum salmon are reported to spawn in the lower section just above the Tanana River.

Name of Stream: Shaw Creek
Position: 64° 16' N 146° 07' W
Location: Mile 287 Richardson Highway
Length: (mi) 40

River System: Tanana
Tributary to: Tanana River
Width: (ft) 20

Water Chemistry:

Date: 7/29/75
 Temperature (°F): 48
 DO (ppm): 8
 CO₂ (ppm): 10
 pH: 7.0
 MOA (ppm): 51
 Hardness (ppm): 51

Fish Sampling Summary:

Date	No.	Species	Length (in)		Frequency	% Comp.
			Range	Mean		
4/17/74-4/20/74	187	GR	7.0-16.0	11.5	Angler Caught	

Remarks:

The Shaw Creek drainage lies north of the Richardson Highway west of the junction of the Tanana and Delta rivers. It flows southwesterly and empties into the Tanana River near Mile 287. The water is humic stained and draws its source from summer runoff and bog habitat. The bottom is sandy with small gravel in the lower section; large boulders characterize the upper feeder streams. Pools are numerous as are fallen logs and jams to boat traffic. Bank cover is alder and willow with adjacent bog type habitat. Fish species include good populations of spawning and resident grayling, as well as burbot, northern pike and various whitefish. There is a high use fishery on upmigrating pre-spawning grayling in April and a moderate use summer and fall fishery of these same species, all of which should be monitored closely. Potential stream damage and pollution may occur from pipeline and recreational use in the near future.

Name of Stream: Clearwater #4
 Position: 64° 14' N 146° 06' W

River System: Tanana
 Tributary to: Slough on
 south bank
 of Tanana
 River

Location: Six miles up the Tanana from the Richardson Clearwater River.
 Length: (mi) 3 Width: (ft) 8

Water Chemistry:

Date: 8/3/74
 Temperature (°F): 49
 DO (ppm): 13
 CO₂ (ppm): 15
 pH: 8.5
 MOA (ppm): 153
 Hardness (ppm): 188

Fish Sampling Summary:

Lake chubs, suckers, slimy sculpins and silver salmon are present.

alkalinity are recorded. Population estimates taken in 1973 indicated 2,267 grayling and 13,611 round whitefish to be present. Over 5,000 silver salmon spawn in this system. Anglers harvest between 400 and 500 grayling annually in this popular fishery. No doubt future impact will involve increased recreational usage and fishery exploitation and should be fully monitored.

Name of Stream: Sawmill Creek
Position 64° 03' N 145° 21' W

River System: Tanana
Tributary to: Delta Clearwater River

Location: Mile 1406 Alaska Highway

Length: (mi) 30

Width: (ft) 12

Water Chemistry:

Date: 7/31/75
Temperature (°F): 56
DO (ppm): 8
CO₂ (ppm): 10
pH: 6.5
MOA (ppm): 34
Hardness: 17

Fish Sampling Summary: No data available.

Remarks:

Sawmill Creek drains the north face of the Granite Mountains and flows northwesterly during periods of spring melt or summer runoff. The flows are strictly seasonal and the creek dries up during periods of summer drought. No direct water channel connects this stream with the Clearwater River. The creek does feed the Clearwater River through groundwater, however. Bank cover is willow and alder with a bottom composed of sand and large gravel. Fish probably do not inhabit this stream due to its seasonal flows.

Name of Stream: Gerstle River
Position: 64° 03' N 145° 08' W
Location: Mile 1392.7 Alaska Highway
Length: (mi) 40

River System: Tanana
Tributary to: Tanana River

Width: (ft) 40

Water Chemistry:

Date: 7/31/75
Temperature (°F): 50
DO (ppm): 10
CO₂ (ppm): 10
pH: 7.5
MOA (ppm): 68
Hardness (ppm): 102

Fish Sampling Summary: No data available.

Remarks:

The Gerstle River starts at the Gerstle Glacier on the north face of the Alaska Range and flows northerly to the Tanana River, 25 miles southeast of Delta Junction. The water flows are glacial in nature and depend on summer runoff and springs to a small degree. The color is influenced by the glacial origin and is quite turbid. The bottom type is a gravel and glacial silt combination with little aquatic vegetation. Bank cover is spruce and aspen in the lower section changing to willow and alder in the foothills. Present fishery use is nonexistent. A nearby logging operation provides the only commercial development.

Name of Stream: Little Gerstle River
Position: 63° 48' N 144° 46' W
Location: Mile 1388.4 Alaska Highway
Length: (mi): 24
Water Chemistry:

Date: 7/31/75
Temperature (°F): 48
DO (ppm): 10
CO₂ (ppm): 10
pH: 8.0
MOA (ppm): 85
Hardness (ppm): 102

River System: Tanana
Tributary to: Tanana River
Width: (ft) 25

Fish Sampling Summary:

No specific data. Arctic grayling have been observed throughout the system and char are probably present.

Remarks:

The Little Gerstle River originates in a valley between Mt. Hajdukovich and Independent Ridge and flows northeasterly into the Tanana River. Flows are seasonal and dependent upon snow melt and runoff for high water periods. Spring areas supply water to the upper reaches of the river and provide rearing habitat for the fish present. The water takes on a green turbidity during glacial melt. The bottom consists of gravel and sand with little vegetation or aquatic plants. Pools are found frequently in the upper sections. Bank cover consists of willows, alder and aspen. An existing foot or all terrain vehicle trail follows the stream to its upper end and to private cabins. Grayling are present during the majority of the year in pools or spring areas but are not fished to any extent. Future use increases could occur as well as problems from all terrain vehicle traffic near the stream.

Name of Stream: Johnson River
Position: 63° 43' N 144° 37' W
Location: Mile 1380.5 Alaska Highway
Length: (mi) 25

River System: Tanana
Tributary to: Tanana River
Width: (ft) 55 in low water

Water Chemistry:

Date: 7/31/75
Temperature (°F): 43
DO (ppm): 9
CO₂ (ppm): 10
pH: 8.0
MOA (ppm): 85
Hardness (ppm): 119

Fish Sampling Summary:

Fish species present probably include grayling, char and chubs as well as burbot and pike in some lower stream areas.

Remarks:

The Johnson River drains the Johnson Glacier south of the Alaska Highway and flows northerly into the Tanana River crossing the Alaska Highway at Mile 1380.5. Numerous clear summer runoff and spring-fed streams feed into it along its length. Bottom composition varies from large boulders to fine glacial silt. The water is silty and turbid throughout its length except for numerous clear feeder streams. Bank cover consists of some bordering spruce, willow, birch and aspen with open areas on the flood plain. Levels vary considerably with the degree of glacial melt and summer runoff. No fishery exists in the river at this time due to its glacial nature.

Name of Stream: Dry Creek
Position: 63° 42' N 144° 34' W
Location: Mile Alaska Highway
Length: (mi) 15
Water Chemistry:

River System: Tanana
Tributary to: Johnson Slough
Width: (ft) 12

Date: 7/31/75
Temperature (°F): 47
DO (ppm): 9
CO₂ (ppm): 5
pH: 7.0
MOA (ppm): 34
Hardness (ppm): 34

Fish Sampling Summary:

Grayling 10-14" reported present in lower sections, some present above bridge during high runoff periods in spring and when trapped in pools during low water.

Remarks:

Dry Creek drains the north face of Macomb Plateau and flows northerly into Johnson Slough and then into the Tanana River. The water is clear in the upper sections and takes on a slight humic stain as it picks up surface runoff. Numerous sandy pools are present during low water periods. High water occurs during spring melt and raises the creek a few feet. Bottom

Remarks:

Berry Creek originates in the glaciers behind Macomb Plateau and is fed by springs and summer runoff. It flows northerly and empties into Johnson Slough. The water is slightly humic stained and flows vary seasonally, with little winter flow. Access is through undeveloped trails near the bridge at Mile 1371.4. Bank cover consists of the willow-alder complex with occasional hardwoods. There are a few larger pools 4-5' deep present every 100 yards. Aquatic vegetation is scant. There is a light grayling fishery during the spring and summer above and below the bridge. Char are reported in the upper sections. No intensive management is recommended.

Name of Stream: Sam Creek (Sand Creek by Native groups) *River System:* Tanana
Position: 63° 42' N 144° 19' W *Tributary to:* Tanana River
Location: Mile 1368 Alaska Highway *Width:* (ft) 20
Length: (mi) 5
Water Chemistry:

No specific water chemistry data available. Varies depending on whether water source is local springs or flooding from nearby Tanana.

Fish Sampling Summary:

Date	Species	Length (in)	
		Range	Mean
4/01/63	GR	7.0-16.0	12.0
	RWF	9.0-15.0	14.0
	LNS	9.0-15.0	10.0

Remarks:

Sam Creek crosses the Alaska Highway at Mile 1368, flows westerly and parallels the road for the majority of its length, then dumps into the Tanana River north of the highway. The primary water source is springs along its entire route. During high summer flood levels in the Tanana River, silty water backs up Sam Creek and floods the upper stretches with groundwater. Depths vary but average 3' or less. Bottom composition is mainly sand and detritus and pools are infrequent. Bank cover is absent with only a few willows present in the mouth area. Grayling probably spawn in the upper section during the spring and are present during the entire open water period. Round whitefish and suckers are also found during the summer. The present fishery is moderate during the spring and bears monitoring due to the spawning grayling present. Local Natives use the stream as a boat launch site to get to the Tanana River and nearby Sand Lake.

Remarks:

Chief Creek originates in the runoff streams draining Knob Ridge and is fed by an occasional spring. Flows are seasonal and the water humic stained. Access is gained through trails originating at the highway crossing. Bottom composition is mud and sand and few pools are present. Bank cover is willow and alder with occasional aspen and birch. Vegetation is scant with a few streamside grasses. Grayling are reportedly caught in the spring but the fishery is presently light. No intensive management is required.

Name of Stream: Bear Creek
Position: 63° 39' N 143° 57' W
Location: Mile 1357.3 Alaska Highway
Length: (mi) 21
Water Chemistry:

River System: Tanana
Tributary to: Tanana River
Width: (ft) 20

Date: 7/30/75
Temperature (°F): 50
DO (ppm): 10
CO₂ (ppm): 10
pH: 7.5
MOA (ppm): 51
Hardness (ppm): 51

Fish Sampling Summary:

Date	Species	Length (in)		Weight (lb)
		Range	Mean	Mean
6/13/63	GR	8.0-17.0	12.0	0.8

Remarks:

This stream originates in Fish Lake south of the Alaska Highway and flows northwesterly to the Tanana River. Depths average 4" and the bottom is sand, detritus, and gravel. The water is humic stained and turbid during high water periods caused by summer runoff. Winter flows are minimal. Bank cover is close alder and willow. Aquatic vegetation is scant. Grayling are seasonally available during spring and fall but few are caught. No intensive management is recommended at this time.

Name of Stream: Robertson River
Position: 63° 30' N 143° 47' W
Location: Mile 1348 Alaska Highway
Length: (mi) 33

River System: Tanana
Tributary to: Tanana River
Width: (ft) 45

Water Chemistry:

Date: 7/30/75
Temperature (°F): 50
DO (ppm): 10
CO₂ (ppm): 10
pH: 8.5
MOA (ppm): 85
Hardness (ppm): 136

Fish Sampling Summary:

No data available.

Remarks:

Probably used by grayling and other species as a migration route to and from adjacent feeder streams.

The Robertson River is a large, glacial fed stream that drains the north face of the Alaska Range near Mt. Kimball and flows northeasterly into the Tanana River. A west fork and the main river join after 17 miles each and form a single stream. Flows are dependent mainly on glacial melt and runoff and are the heaviest during the spring melt. Springs and feeder streams contribute year-round flow. The bottom type and surrounding habitat is glacial in nature and the water is quite turbid during high periods. Numerous lakes border the northwest bank of the river and contain lake trout and Arctic grayling. Some exchange between some of these lakes and the river may occur in rainy periods. The main river is not used for fishery recreation at this time.

Name of Stream: Sheep Creek
Position: 63° 26' N 143° 48' W
Location: Mile 1342.2 Alaska Highway
Length: (mi) 7
Water Chemistry:

River System: Tanana
Tributary to: Tanana River
Width: (ft) 15

No data available.

Fish Sampling Summary:

No data available.

Remarks:

Probably few if any fish ascend this stream due to its seasonal flow nature.

Sheep Creek drains the north face of the Alaska Range and flows northeasterly into the Tanana River. Its flows are dependent on snow melt and rain runoff and only has water flowing during the spring melt or after heavy rains. No summer fishery occurs in this stream and management is not required at this time.

Name of Stream: Yerrick Creek
Position: 63° 24' N 143° 33' W
Location: Mile 1334.4 Alaska Highway
Length: (mi) 10

River System: Tanana
Tributary to: Tanana River
Width: (ft) 22

Water Chemistry:

Date: 7/30/75
Temperature (°F): 50
DO (ppm): 8
CO₂ (ppm): 10
pH: 7.5
MOA (ppm): 51
Hardness (ppm): 68

Fish Sampling Summary:

No data available.

Remarks:

Northern pike, whitefish, chubs and longnose suckers are probably present in sections immediately above Tanana River.

Yerrick Creek is a typical rapid runoff stream draining the north face of the Alaska Range. Its main water source is snow melt and summer runoff with largest flows in early summer. The bottom type is large rocks and boulders with little vegetation. Bank type is alder and willow. No fishing pressure occurs due to the lack of suitable habitat, yet fish probably use the lower section as a migratory route between the Tanana River and Moon Lake, into which a small tributary drains. No intensive management is required.

Name of Stream: Clearwater Creek
Position: 63° 09' N 143° 12' W
Location: Mile 109.6 Slana-Tok Highway
Length: (mi) 18
Water Chemistry:

River System: Tanana
Tributary to: Tok River
Width: (ft) 20

No data available.

Fish Sampling Summary:

Grayling are probably present in lower mile of stream but no specific data are available.

Remarks:

Clearwater Creek crosses the Slana-Tok cutoff at Mile 109.6 and joins the Tok River approximately two miles downstream. The flows are strictly seasonal with heavy spring flooding comprising the largest flow. Water levels vary greatly as do flows due to the runoff source. There is a public campsite just upstream from the highway bridge. Bottom type is mainly large gravel-boulder composition due to heavy runoff periods.

Little bottom vegetation is present. Bank cover is a willow-cottonwood composition. Levels reach a low period in mid-summer and winter. There are reports of fish presence, probably grayling, in the lower section just above the Tok River junction. No present fishery exists.

Name of Stream: Tok Overflow
Position: 63° 08' N 143° 14' W
Location: Mile 103.4 Glenn Highway
Length: (mi) 8
Water Chemistry:

River System: Tanana
Tributary to: Tok River
Width: (ft) 10-30

Date: 7/10/75
Temperature (°F): 42
DO (ppm): 9
CO₂ (ppm): 15
pH: 8.0
MOA (ppm): 119
Hardness (ppm): 204

Fish Sampling Summary: No data available.

Remarks:

The Tok Overflow drains the east face of the Alaska Range west of the Glenn Highway and flows northeast to the Tok River. Water flows last generally year-round and depend heavily on springs as a source. Some summer runoff occurs and contributes to the flows. The water is crystal clear and flows an average 2 cfs. Occasional spring flooding occurs in the lower sections from the nearby Tok River. Bottom composition consists of fine to medium gravel with scant aquatic vegetation. Bank cover is close willows and alder with occasional cottonwoods. Fish species present include excellent populations of grayling with a few round whitefish and char. Rearing grayling are present and spring spawning may occur. Angler use is moderate for the area and the effort should be monitored.

Name of Stream: Tok River
Position: 63° 22' N 142° 50' W
Location: Mile 1309.3 Alaska Highway
Length: (mi) 60
Water Chemistry:

River System: Tanana
Tributary to: Tanana River
Width: (ft) 75

Date: 7/10/75
Temperature (°F): 54
DO (ppm): 7
CO₂ (ppm): 15
pH: 8.5
MOA (ppm): 119
Hardness (ppm): 153

Fish Sampling Summary: No data available.

Remarks:

The Tok River begins in the Alaska Range southwest of Tok Junction and flows northeasterly to the Tanana River. Levels vary considerably

depending on snow melt and runoff and the lower sections dry up completely during late winter. Flow rarely exceeds 3 cfs in summer and the water is silt laden. The bottom consists of fine glacial silt and small to medium gravel. Aquatic vegetation is scant. Bank cover consists of willow, alder and cottonwood with open gravel bars in the upper, mountainous sections. Known fish species include burbot, grayling, round whitefish and northern pike. The clearer tributaries to the main river, i.e. the Tok Overflow and Little Tok River, harbor good spring and summer populations of Arctic grayling. Its proximity to the Glenn Highway and small logging operations call for a fairly close monitoring in the future.

Name of Stream: Little Tok River
Position: 63° 05' N 143° 22' W
Location: Mile 89 Glenn Highway
Length: (mi) 32
Water Chemistry:

River System: Tanana
Tributary to: Tok River
Width: (ft) 50

No data available.

Fish Sampling Summary: No data available.

Remarks:

The Little Tok River drains a glacial terminus in the Mentasta Mountains and flows northerly to the Tok River. Water turbidity varies yearly but remains moderate throughout the summer. Flows occur on a year-round basis due to spring sources. Bottom types consist of fine gravel and silt in the lower sections with large gravel and boulders present in the upper mountainous stretches. Bank cover is broken alder, willow and cottonwood, with open valleys and gravel bars present in upper sections. Known fish species include Arctic grayling which ascend the sections above the Mineral Lake outlet in summer and may inhabit the lower sections just above the Tok River during winter. Present fishery use is light during years of high turbidity and can rise to heavy use when spring conditions permit grayling fishing due to clearer water conditions.

Name of Stream: Trail Creek
Position: 62° 59' N 143° 20' W

River System: Tanana
Tributary to: Little Tok
River

Location: Crosses old Glenn Highway cutoff two miles up from Mineral Lake turnoff and 25 miles south of Tok.

Length: (mi) 12

Width: (ft) 10

Water Chemistry:

Date: 7/10/75
Temperature (°F): 53
DO (ppm): 9
CO₂ (ppm): 15
pH: 8.0
MOA (ppm): 85
Hardness (ppm): 119

Fish Sampling Summary: No data available.

Remarks:

Trail Creek drains the hills to the northeast of Mentasta Lake and flows westerly into the Little Tok River. Depths vary from 8" to 3' and vary with spring ice melt and summer runoff. Springs and runoff are the major water sources. The bottom is coarse gravel up to 6". Pools occur frequently. The water is clear and stream vegetation scant. Bank cover consists of willows and alder with open gravel bars. No fish were observed in the section surveyed but grayling probably inhabit the section just above the Little Tok River.

Lakes

The following lakes are arranged in order of their relative distance from the western edge of the study area.

<i>Name of Lake:</i>	Quartz Lake	<i>River System:</i>	Tanana
<i>Position:</i>	63° 13' N 145° 49' W	<i>Elevation (ft):</i>	951
<i>Location:</i>	Twelve miles NNW of Delta Junction		
<i>Surface Area (acres):</i>	1,504	<i>Maximum depth (ft):</i>	42
<i>Water Chemistry:</i>			
<i>Date:</i>	8/8/73	4/3/75	5/29/75
<i>Temperature (°F):</i>	64	ND	49
<i>DO (ppm):</i>	9.0	2.6	10.9
<i>pH:</i>	9.0	8.0	8.1
<i>MOA (ppm):</i>	222.0	340.0	218.0
<i>Hardness (ppm):</i>	222.0	323.0	200.0
<i>Depth (ft):</i>	ND	6	(ppm)
		carbon total organic	26
		conductivity	400
		nitrogen (ppm) organic	2.8

Fish Sampling Summary:

Date	No.	Species	Length (in)		Weight (lb)		Frequency	%Comp.
			Range	Mean	Range	Mean		
11/14/74	32	RT	10.8-18.5	14.2	0.60-2.68	1.45	0.76	0.97
	1	SS		17.8		2.34	0.02	0.03

Remarks:

Quartz Lake lies in a bowl surrounded by hills on the southeast edge of Shaw Creek Flats north of the Tanana River. Spruce, birch and aspen cover the hilly portions with alder, willow and grasses edging the open shore. The lake was rehabilitated in 1970 in the largest project of its kind undertaken in Alaska to that date. Stunted northern pike and least cisco were present to that time. Annual restocking of rainbow trout has occurred with more than 1,650,000 fish placed in the lake. Quartz Lake

Name of Lake: Volkmar Lake *River System:* Tanana
Position: 64° 07' N 145° 11' W *Elevation (ft):* 1,070
Location: Twenty miles east of Big Delta, north of the Tanana River.
Surface Area (acres): 890 *Maximum depth (ft):* 42
Water Chemistry:

<i>Date:</i>	3/29/71	9/19/72
<i>Depth (ft):</i>	6	ND
<i>Temperature (°F):</i>	ND	48
<i>DO (ppm):</i>	8.0	8.0
<i>pH:</i>	ND	7.5
<i>MOA (ppm):</i>	ND	85.5
<i>Hardness (ppm):</i>	ND	102.6

Fish Sampling Summary:

<i>Date</i>	<i>No.</i>	<i>Species</i>	<i>Length (in)</i>		<i>Weight (lb)</i>		<i>Frequency</i>	<i>% Comp.</i>
			<i>Range</i>	<i>Mean</i>	<i>Range</i>	<i>Mean</i>		
9/20/72	20	NP	10.6-38.8	25.2	0.30-15.00	5.2	0.43	0.34
	36	HWF	4.2-16.6	12.1	0.28-2.38	1.28	0.84	0.61
	3	LCI	4.2- 6.4	5.1	0.07	0.05

Remarks:

Volkmar Lake lies in a bowl surrounded by hills on three sides just north of the Tanana River. Access is either through floatplane or by snowmachine or plane in winter. The water is clear and the bottom composition is muck and detritus with limited areas of sand and gravel along the beaches. There are two minor inlets (0.1 cfs each) and one outlet draining into a swamp area at approximately 2 cfs. Present use is moderate with several completed cabins present plus numerous filed on open entry sites. Native fish species include northern pike, hump-back whitefish and least cisco. Present pressure levels are moderate but will increase and the populations of fish should be monitored.

Name of Lake: Healy Lake *River System:* Tanana
Position: 63° 49' N 144° 44'W *Elevation (ft):* 1,125
Location: North of the Tanana River 29 miles east of Delta Junction
Surface Area (acres): 3,800 *Maximum depth (ft):* 11
Water Chemistry:

<i>Date:</i>	8/23/72
<i>Temperature (°F):</i>	65
<i>DO (ppm):</i>	9.0
<i>pH:</i>	7.7
<i>MOA (ppm):</i>	70
<i>Hardness (ppm):</i>	50

Fish Sampling Summary:

Date	No.	Species	Length (in)		Frequency	% Comp.
			Range	Mean		
8/23/72	65	NP	6.6-29.5	12.9	0.84	20.9
	59	HWF	11.2-18.9	15.6	0.77	19.0
	1	GR	...	10.2	0.01	0.03
	186	LCI	4.1-11.9	...	2.42	59.8

Remarks:

Healy Lake is a shallow, silty-bottom body of water lying north of the Tanana River. The water can be quite turbid due to wave action and backup from the Tanana River through the single outlet stream. An extensive inlet system (Healey River) flows in from the northeast. The inlet provides good fishing for grayling and the outlet for burbot. Present sport use is still light. Access is by boat up the Tanana or by float plane. Local residents harvest over 2,500 lbs of whitefish annually for commercial sale.

Name of Lake: Donna Lake
Position: 63° 46' N 144° 54' W
Location: Mile 1391 Alaska Highway; 2.5 miles southwest of the highway
Surface Area (acres): 58
River System: Tanana
Elevation (ft): 1,660
Maximum depth (ft): 30

Water Chemistry:

Date:	3/21/73	6/9/75
Depth (ft):	5	surface
Temperature (°F):	33	58
DO (ppm):	9.0	ND
CO ₂ (ppm):	ND	ND
pH:	6.8	ND
MOA (ppm):	51.3	26
Hardness (ppm):	68.4	29
Carbon total organic (ppm):		18
Nitrogen total organic (ppm):		0.49
Conductance:		62

Fish Sampling Summary:

Date	No.	Species	Length (in)		Weight (lb)		Frequency	% Comp.
			Range	Mean	Range	Mean		
12/12/73	8	RT	4.0-17.0	13.0	.03-2.4	1.3	0.19	100

Remarks:

Donna Lake was barren prior to stocking with rainbow trout in 1962. Since that time, fish growth has been good and the lake has provided substantial recreation. The lake is typical of those in this area with mixed alder, spruce, and cottonwood surrounding it. There are no major inlets and outlets. Littoral area occupies 61% of the lake. Bottom type is mud and detritus with sedges and water lilies near the shore. Recent netting has shown the lake to be producing lower trout catches despite constant restocking.

Fish Sampling Summary:

Northern pike up to 10 lbs. reported. Whitefish and grayling possibly present.

Remarks:

"T" Lake is remote accessible only by airplane. The water is clear and bottom type is fine gravel and sand with some aquatic vegetation near the outlet. A small inlet enters the west shore and a single outlet flowing 2 cfs drains the northeastern corner into Billy Creek. Generally, the shoreline is open grasses and willow with birch, aspen and spruce on the hills that surround the lake. Fishing pressure and hunter usage has been light in the past, and due to the inaccessibility, should remain so for some time.

Name of Lake: Moon Lake
Position: 63° 23' N 143° 23' W
Location: Between the Alaska Highway and the Tanana River at Mile 1332 of the Alaska Highway
Surface Area (acres): 20
Water Chemistry:
Date: 5/5/71 12/7/71
DO (ppm): 0.0 3.2

River System: Tanana
Elevation (ft): 1,600
Maximum depth (ft): 6

Fish Sampling Summary:

Date	No.	Species	Length (in)	
			Range	Mean
7/11/75	50	LNS	4.0-13.0	8.4
	20	NP	3.5-13.5	5.5
	7	LC	4.0- 5.0	4.5

Remarks:

Moon Lake lies near the highway west of Tok and a state campground on the lake insures summer recreation. The water is humic stained and the bottom is mud covered with a dense layer of vegetation. Yerrick Creek flows into Moon Lake during rainy periods from the west but the remainder of the time the water source is either surface runoff or backup from the Tanana River. The lake is an old oxbow and water is present in the old stream channel adjacent to the Tanana River. The lake's main use is water recreation by the Tok residents. Approximately 75,500 grayling fry were stocked in 1975 in an attempt to establish a fishery.

Fish Sampling Summary:

Date	No.	Species	Length (in)		Frequency	% Comp.
			Range	Mean		
7/15/71	3	GR	11.2-13.5	12.2	0.04	7.3
	9	NP	10.2-17.9	15.5	0.13	22.0
	29	HWF	11.1-19.7	13.7	0.04	70.7

Remarks:

This lake lies south of the Glenn Highway and supports good populations of several fish species. The inlet, Mentasta Creek, also supports the above three species. The lake is shallow and aquatic vegetation covers the mud bottom. The lake lies in a valley and sparse spruce, cottonwood and alder surround it. Angling pressure is directed towards spawning grayling in the outlet stream in early May. Spawning begins around May 20 or at 39°F. Age V-IX grayling are present and harvested heavily during years when the outlet water isn't turbid. During the summer the ponds adjoining Mineral Lake provide good grayling fishing as does the outlet stream again in the fall. Heavy pressure has been placed on this lake and future monitoring should continue.

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