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STATE OF ALASKA
Keith H. Miller, Governor



ANNUAL REPORT OF PROGRESS, 1968 - 1969
FEDERAL AID IN FISH RESTORATION PROJECT F-9-1
SPORT FISH INVESTIGATIONS OF ALASKA

ALASKA DEPARTMENT OF FISH AND GAME
Wallace H. Noerenberg, Acting Commissioner

Alaska Rupert E. Andrews, Director
Division of Sport Fish

Louis S. Bandirola, Coordinator

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THE STATE OF ALASKA
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INTRODUCTION

This report of progress involves the findings and work accomplished under the State of Alaska, Federal Aid in Fish Restoration, Project F-9-1, "Sport Fish Investigations of Alaska".

The work conducted during this reporting period constitutes effort on nine separate studies which are crucial in evaluating the sport fishing resources of the State. Recreational demands have necessitated broadening our knowledge of the fishery. All 20 jobs were of continuing nature enabling the Department to keep abreast of present and future impacts on certain fish species. Specifically, the work included work on inventory and cataloging of the sport fish and sport fish waters of the State, sport fishery creel census and access. Special emphasis was given to Dolly Varden, silver salmon, anadromous fish, grayling, salmon, sheefish, pike, and char. The information gathered has provided supporting documentation for better fish management and a basis for necessary future investigations.

The subject matter contained in these reports may be inconclusive. The findings and interpretation are subject to re-evaluation as the work progresses.

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ALASKA
Alaska Resources

RESEARCH PROJECT SEGMENT

STATE: ALASKA Name: Sport Fish Investigations of Alaska.
Project No.: F-9-1 Title: Inventory and Cataloging of the Sport Fish and Sport Fish Waters in the Interior of Alaska.
Job No.: 15-A

Period Covered: July 1, 1968 to June 30, 1969.

ABSTRACT

Test netting was conducted on ten lakes stocked with rainbow trout, Salmo gairdneri, and silver salmon, Oncorhynchus kisutch, to determine age and growth, specific relationships, and success of stocking policies. Special emphasis was put on the evaluation of the Birch Lake fishery.

A preliminary survey of 11 streams and one lake adjacent to the road systems on the Seward Peninsula and of two lakes and one stream in the Tok-Canadian border area was made.

Two streams in Interior Alaska were investigated for salmon spawning populations.

Three lakes, Medicine, Quartz and Deadman, were investigated for possible chemical rehabilitation.

Beaver Creek was surveyed for angling potential in cooperation with the Bureau of Land Management and was found to contain excellent grayling, Thymallus arcticus, populations.

Harding Lake was test netted for 290 hours to assess the lake trout, Salvelinus namaycush, population. Evidence of lake trout reproduction and survival of stocked fingerlings has not been found.

Winter dissolved oxygen determinations were made on 11 lakes, five of which were new waters.

Limited creel censuses were conducted on Birch and Little Harding Lakes during the winter and on the Tanana River and Shaw Creek in the spring.

RECOMMENDATIONS

1. Inventory and cataloging of Interior Alaskan waters be continued with emphasis on newly accessible waters as present road systems are extended.

2. Preliminary surveys be conducted on waters now utilized by fly-in anglers, especially East and West Twin Lakes, and Wien Lake.
3. The annual test netting of stocked lakes be continued to provide information on population dynamics, age and growth, inter-species relationships, and stocking policies.
4. Undesirable fish be chemically removed from Quartz Lake, and the lake be restocked with rainbow trout.
5. Barriers to fish movement be built in the outlets of Little Harding and Deadman Lakes.
6. Survival and growth of silver salmon planted in Harding Lake as well as the survival, growth, and reproductive success of the lake trout plants in this lake be evaluated.

OBJECTIVES

1. To assess the environmental characteristics and fish species composition of the waters of the job area and, where practicable, obtain estimates of existing or potential angler use and sport fish harvest.
2. To investigate remote area waters; determine fish species composition, quality of angling, accessibility, and value in distributing angler effort over a wider area, to offer desired protection of individual fish stocks.
3. To evaluate present stocking policies and programs and assess fish survival, growth, and inter-species relationships.
4. To evaluate application of fishery restoration measures and availability of sport fish egg sources.
5. To evaluate the success of adult, fry, and fingerling lake trout transplants in establishing a fishery for this species in Harding Lake.
6. To assist, as required, in the investigations of public access status to the area's fishing waters.
7. To evaluate multiple water-use development projects (public and private) and their effects on the area's streams and lakes, for the proper protection of the sport fish resources.

TECHNIQUES USED

Graduated mesh monofilament gill nets, 125 by 6 foot with five mesh sizes ranging from 1/2 to 2 1/2 inches square measure, were used to sample fish populations of stocked lakes and waters with undetermined fish populations. Test angling was used on some streams to sample grayling populations.

Small scales were mounted between glass slides; larger scales were pressed on cellulose acetate. Both were read using a Bausch and Lomb microprojector.

Lakes and streams were physically surveyed, and pertinent data was recorded on cards now on file in the Fairbanks office.

FINDINGS

Fish Stocking Evaluations

Ten lakes stocked with rainbow trout and/or silver salmon were test gill netted during the months of May and June. Nets were set for periods ranging from 15 to 24 hours. The results are shown in Table 1.

Birch Lake:

This 803 surface-acre lake was rehabilitated using rotenone in July, 1966 (Roguski, 1966). After detoxification in the same year, 195,000 rainbow trout fingerlings (183 per pound) were planted. In the late summer of 1967, Birch Lake was stocked with 352,800 rainbow trout fingerlings (500 per pound).

The lake became ice free May 19, 1968, and two test gill nets were set in the lake. These nets caught 27 rainbow trout when fished on May 21 and 22. Fourteen of these fish were males in spawning condition. No ripe females were taken.

Although this early test netting showed a ratio of 70 percent 1966 stocked fish to 30 percent 1967 stocked fish, the mid-summer test netting data and the fall creel census data was calculated to be 34 percent 1966 stocked fish and 66 percent 1967 stocked fish.

The stocking rate per surface acre was 243 in 1966 and 440 in 1967. With the fish exhibiting good growth, 348,400 rainbow trout fingerlings (434 per acre) were stocked in August and September of 1968.

Rainbow trout of the 1966 plant taken during July, 1968, had a length range of 235 to 375 mm with a mean length of 295 mm. Fish from the 1967 stocking had a length range of 138 to 225 mm with a mean of 196 mm.

The stomach contents of 30 rainbow trout taken by anglers on the day Birch Lake was opened to fishing (September 21) were examined as they were cleaned by the fishermen. Zooplankton (Diaptomus) was the principle food item. Of particular interest was the absence of any rainbow fingerlings in the stomach contents, although a plant of 42,000 fingerlings had been made the previous day in the general area where the fish were caught. The stomachs of winter-caught fish were either empty or contained a few insect larva (Tricoptera and Odonata).

During the late summer of 1967, vandals removed three of the screens in the outlet weir of Birch Lake and destroyed them (Roguski, 1968). It was not determined at the time if the lake had become reinfested with rough fish. In early July, 1968, one northern pike, Esox lucius (fork length, 485 mm) was taken in a test net.

One internal parasite was observed in several of the rainbow trout from Birch Lake. This was later identified by Ken Neiland, Parasitologist for the Department of Fish and Game, as the tapeworm, Cyathocephalus truncatus.

TABLE 1 - Test Netting of Stocked Lakes 1968, Interior Alaska.

| Name | Date | Number | Species | Length Range (mm) | Mean Length (mm) | Frequency* | Percent Composition |
|--------------|---------|-----------------------------|---------|----------------------|---------------------|------------|------------------------|
| Birch | 5/21/68 | 21 | Rb | 128-345 | 260 | 0.95 | 100.00 |
| | 5/22/68 | 8 | Rb | 204-311 | 280 | 0.35 | 100.00 |
| | 6/27/68 | 8 | Rb | 115-330 | 202 | 0.47 | 100.00 |
| | 7/2/68 | 31 | Rb | 147-375 | 243 | 0.57 | 96.88 |
| | 7/3/68 | 1 | NP | 485 | 485 | -- | 3.12 |
| | 7/3/68 | 25 | Rb | 138-363 | 232 | 0.36 | 100.00 |
| Bolio | 6/14/68 | 52 | SS | 165-270 | 195 | 3.35 | 100.00 |
| Craig | 6/20/68 | 3 | SS | 230-253 | 245 | 0.13 | 100.00 |
| Donna | 6/18/68 | 31 | Rb | 290-595 | 368 | 1.35 | 100.00 |
| Little Donna | 6/18/68 | 6 | Rb | 394-480 | 437 | 0.32 | 100.00 |
| Jan | 6/5/68 | 49 | Rb | 243-390 | 287 | 2.23 | 89.00 |
| | | 6 | SS | 258-261 | 260 | 0.27 | 11.00 |
| Lisa | 6/20/68 | 1 | Rb | 395 | 395 | 0.06 | 11.11 |
| | | 8 | SS | 260-335 | 315 | 0.50 | 88.89 |
| Lost | 6/27/68 | 6 | SS | 105-165 | 120 | 0.28 | 40.00 |
| | | 1 | NP | 301 | 301 | 0.05 | 6.67 |
| | | 1 | Ch | --- | --- | 0.05 | 6.67 |
| | | 7 | Su | --- | --- | 0.33 | 46.66 |
| Mark | 6/14/68 | 2 | Rb | 237-295 | 266 | 0.12 | 66.67 |
| | | 1 | SS | 235 | 235 | 0.06 | 33.33 |
| Mark | 6/25/68 | 2 | Rb | 445-470 | 458 | 0.09 | 100.00 |
| Rapids | 6/24/68 | No fish taken (24 hour set) | | | | | |

*Number of fish per hour in 125' variable mesh gill net.

Ch = Chub, NP = Northern Pike, Rb = Rainbow Trout, SS = Silver Salmon, Su = Sucker.

Bolio Lake:

This popular lake on Fort Greely reservation has been stocked with rainbow trout since 1953. The first silver salmon were planted in 1961 and have become the dominant species. The rainbow trout taken in test nets have decreased in number every year, although stocking was continued, and the last plant made in 1965. In both 1967 and 1968, no rainbow trout were taken in test nets set for 18 hours and 16 hours, respectively.

Scale samples obtained from 53 silver salmon taken in the 1968 test netting revealed that 87 percent of the catch was from the 1966 plant and 13 percent from the 1965 plant.

Donna Lake:

Donna Lake near Delta Junction has been stocked exclusively with rainbow trout since 1962. The 1968 test netting with one net set for 23 hours produced 31 fish. Three-year classes were represented in this catch: 1963, 36 percent; 1964, 54 percent; and 1965, 10 percent. Donna Lake was restocked in 1968 with 10,000 rainbow trout fingerlings.

Little Donna Lake:

Little Donna Lake, located one-half mile from Donna Lake, was test netted for 19 hours using one variable mesh test net. Six rainbows were taken, all of them representing the original 1963 plant. Ten thousand rainbow trout fingerlings were planted in September, 1968.

Jan Lake:

Jan Lake has a good rainbow population. Forty-nine fish were caught in 22 hours of test netting, with the plants made in 1963 (7,000) and 1964 (2,600) being the dominant age groups. The six silver salmon taken in Jan Lake were from the 1965 plant and showed evidence of sexual maturity. Jan was restocked in 1968 with 8,000 silver salmon fingerlings.

Lisa Lake:

Lisa Lake produced the largest silver salmon (335 mm in fork length) of any managed lakes in the Interior. The eight silver salmon taken in 16 hours of test netting were all sexually mature. Since the silver salmon population has reached maturity, the lake was restocked with 10,000 silver salmon fingerlings in July, 1968.

The rainbow population is low. The one fish taken during the test netting was planted in 1963. The last stocking of this species was in 1966.

Craig Lake:

The Craig Lake sampling nets captured three silver salmon and no rainbow trout during a 24-hour period. The silver salmon were becoming sexually mature and represented the 1965 stocking. A large number of small chubs (*Hybopsis* sp.) was noted near the shore in this lake. There has been no previous report of their presence. The 1968 stocking was 10,000 rainbow trout fingerlings.

Mark Lake:

Nets set in Mark Lake for a total of 37 hours caught only four rainbow trout and one silver salmon. Two of the trout were from the original 1964 stocking, and one each from the 1965 and 1966 plant. The one silver salmon was from the 1965 plant.

Mark Lake receives considerable angling pressure from the military personnel of Fort Greely. It is popular for both winter and summer fishing, and was planted with 4,000 rainbow trout fingerlings in 1968.

Rapids Lake:

No fish were taken in a 24-hour set of a gill net in Rapids Lake, which was stocked with 2,000 rainbow fingerlings in September, 1968.

Lost Lake:

Lost Lake has a few silver salmon, six of which were taken in 19 hours of test netting. Northern pike, chubs and suckers, Catostomus catostomus, are also present in the lake. No further stocking of this lake is recommended until a suitable barrier is constructed in the outlet and the lake is rehabilitated.

Creel Census

Birch Lake

Birch Lake was opened to fishing on September 21, 1968. An estimated 550 anglers caught approximately 2,000 fish during the first two days. Ninety-two anglers were interviewed. They caught 341 rainbows in 84 hours of fishing time for a catch per man-hour of 4.06. Three weeks after the opening, Birch Lake was frozen over and fishing was halted until the ice cover became thick enough to support fishermen.

Creel census of the winter fishery was initiated in November and continued through March. Data was obtained on weekends and holidays. With extreme cold weather in December and January, data was collected on only two Sundays in each of these months. All other months are represented by four days of creel census data. Anglers were interviewed between 1 and 4 p.m. Data is shown in Table 2.

TABLE 2 - Results of the Birch Lake Creel Census, Winter, 1968-69.

| Month | Anglers | Hours Fished | Number of Fish | Rainbow Trout per Man Hour |
|----------|---------|--------------|----------------|----------------------------|
| November | 53 | 120 | 32 | 0.370 |
| December | 11 | 23 | 8 | 0.347 |
| January | 22 | 67 | 5 | 0.073 |
| February | 40 | 105 | 3 | 0.042 |
| March | 35 | 59 | 6 | 0.100 |

Grayling Creel Census:

An early spring grayling fishery develops on the Tanana River at the Richardson Highway bridge near Big Delta. Fishing pressure is also heavy at the mouth of Shaw Creek for a short time as the grayling concentrate there prior to migrating up Shaw Creek. Creel census data were obtained at both locations and is shown in Tables 3 and 4.

TABLE 3 - Creel Census Data from the Spring Grayling Fishery, Tanana River Bridge (Big Delta), 1968.

| <u>Date</u> | <u>Anglers</u> | <u>Hours Fished</u> | <u>Fish Caught</u> | <u>Grayling Per Man Hour</u> |
|-------------|----------------|---------------------|--------------------|------------------------------|
| 4/6/68 | 20 | 54 | 27 | 0.50 |
| 4/7/68 | 3 | 3 | 0 | 0.00 |
| 4/17/68 | 3 | 8 | 8 | 1.00 |
| 4/18/68 | 2 | 8 | 0 | 0.00 |
| 4/20/68 | 12 | 62 | 34 | 0.55 |
| 4/21/68 | 11 | 21 | 5 | 0.24 |
| 4/22/68 | 2 | 3 | 0 | 0.00 |
| 4/29/68 | 2 | 1 | 0 | 0.00 |
| 4/30/68 | <u>1</u> | <u>1</u> | <u>0</u> | <u>0.00</u> |
| TOTAL | 56 | 161 | 74 | 0.45 |

TABLE 4 - Creel Census Data from the Spring Grayling Fishery, Mouth of Shaw Creek, 1968.

| <u>Date</u> | <u>Anglers</u> | <u>Hours Fished</u> | <u>Fish Caught</u> | <u>Grayling Per Man Hour</u> |
|-------------|----------------|---------------------|--------------------|------------------------------|
| 4/19/68 | 5 | 17 | 34 | 2.00 |
| 4/20/68 | 11 | 79 | 72 | 0.91 |
| 4/21/68 | 12 | 16 | 23 | 1.44 |
| 4/22/68 | 5 | 8 | 8 | 1.00 |
| 4/23/68 | <u>24</u> | <u>54</u> | <u>50</u> | <u>0.93</u> |
| TOTAL | 57 | 174 | 187 | 1.07 |

Little Harding Lake developed heavy fishing pressure during February and March, 1969. At this time the 26,500 silver salmon fingerlings planted in 1967 had reached a length range of 178 to 216 mm with a mean of 193 mm. Creel census data is shown in Table 5. Little Harding Lake was restocked in July, 1968 with 20,000 fingerlings.

TABLE 5 - Little Harding Lake, Winter Creel Census, 1969.

| <u>Period</u> | <u>Anglers</u> | <u>Hours</u> | <u>No. Fish</u> | <u>Silver Salmon Per Man Hour</u> |
|-------------------|----------------|--------------|-----------------|-----------------------------------|
| January (2 days) | 9 | 20 | 14 | 0.70 |
| February (4 days) | 5 | 5 | 19 | 3.80 |
| March (4 days) | <u>63</u> | <u>74</u> | <u>200</u> | <u>2.70</u> |
| TOTAL | 77 | 99 | 233 | 2.35 |

Waters Investigated for Possible Rehabilitation

Medicine Lake:

This 1,000-acre lake is located about three miles from Circle Hot Springs. Soundings were taken at approximately 100-foot intervals, both on the north-south and east-west axes of the lake. The maximum depth found was six feet. An abundance of vegetation, submergent and emergent, is present. A dense algal bloom also exists during the summer. The outlet on the north shore drains into Crooked Creek and thence to the Yukon River by way of Birch Creek. Three small inlets drain from the hills to the south and east. One inlet from the north is a sluggish stream with a beaver dam about 1/4 mile from the lake.

Two test nets set for 22 hours caught 25 northern pike and 99 broad whitefish (Coregonus nasus). The pike had a length range of 229 to 635 mm and a mean length of 427 mm.

This lake appears to be an important spawning and rearing area for northern pike. Many small pike were observed in the shallows on the north and west shores.

This lake is not recommended for rehabilitation.

Deadman Lake:

This 340-acre lake near the Alaska Highway at Mile 1249 was rehabilitated in 1954 and stocked with rainbow trout. No trout have been found in this lake for several years, and stunted northern pike comprise the entire fish population. A sample gill net set for 16 hours caught 28 northern pike with a length range of 292 to 508 mm and a mean length of 394 mm.

A barrier to fish movements should be built in the outlet of this lake before it is rehabilitated again.

Quartz Lake:

This lake should be considered for rehabilitation. It has 1,504 surface acres and a volume of 18,525 acre-feet. The absence of inlets and outlets on the lake reduces the probability of reinfestation with undesirable species. The present fish population consists of small northern pike and whitefish.

Harding Lake - Lake Trout Investigations:

Harding Lake was stocked with 252 adult lake trout, Salvelinus namaycush, in 1963 and again with 235 in 1965. Also in 1965, 88,000 eyed lake trout eggs were placed in the lake of which 75,000 were estimated to have successfully hatched (Heckart and Roguski, 1966). In 1967, 31,200 lake trout fingerlings were planted (Roguski, 1967).

Harding Lake was test netted for a total of 290 net hours during September, 1968, using 125-foot variable mesh gill nets. Nets were set close to the bottom in waters ranging from eight to 40 feet. In addition, a minnow trap (3'x1'x1') made of 1/4 inch hardware cloth was placed in 45 feet of water. Four lake trout were taken in the nets. They had a length range of 533 to 686 mm with a mean length of 633 mm. Scales taken from these fish indicated the year of transplant by wider spacing of the circuli. Three of the lake trout were from the 1963 plant and one was from the 1965 plant.

Also taken in the nets were 20 northern pike, 119 cisco, Coregonus sardinella, and two burbot, Lota lota. No fish were taken in the minnow trap.

The eyed eggs planted in the lake in 1966 and the fingerlings in 1967 are believed to be still too small to be taken in a gill net. Van Wyhe and Peck (1968), in their study of Paxson and Summit Lakes showed that lake trout in age class II averaged 122 mm in Paxson Lake and 102 mm in Summit Lake. Age III lake trout averaged 180 mm in Paxson and 155 mm in Summit Lake. The plant of eyed lake trout eggs in 1966 and the lake trout fingerlings in 1967 in Harding Lake should average between 102 and 180 mm if the lake trout grow at the same rate as in Paxson or Summit Lakes.

Winter Dissolved Oxygen

Several new waters, in addition to some of the regularly stocked lakes, were sampled for dissolved oxygen content. A number of lakes recently stocked with grayling were sampled; these will be reported under the Grayling Investigation Segment (Report 16-B).

Table 6 shows the results of these tests.

Tok-Canadian Border Survey

Mile 1239 Lake (Alaska Highway):

This 10-acre lake has a maximum depth of 19 feet. A test net set for 18 hours caught no fish. A water sample taken in January showed 4.00 ppm oxygen at 5 feet and 3.50 ppm oxygen at 10 feet. This lake should be suitable for a grayling plant.

Mile 1242 Lake (Alaska Highway):

A 1/4-mile dirt road provides access to this seven-acre lake. Maximum depth is 18 feet. A test net set for 18 hours caught no fish. This lake has no inlets or outlets. A small amount of aquatic vegetation is present. The bottom appears to be composed of fine sand and mud with a cover of vegetative detritus. In January the lake was tested for dissolved oxygen and showed 5.50 ppm at 5 feet and 4.00 ppm at 12 feet. An experimental plant of hybrid sheefish, Stenodus leucichthys nelma (Pallas), X whitefish, Coregonus lavaretus, fry was made in this lake in January.

Yarger Lake:

This 100-acre lake was investigated primarily because of a public campground on its shores and with the thought of possible rehabilitation. Test nets set in August revealed a population of northern pike, suckers, and whitefish. An outlet 8 to 10 feet wide drains into the Chisana River. The maximum depth is 10 feet. The south and west shores are very low and could easily be inundated should the Chisana River reach a higher-than-normal level; therefore, rehabilitation is not recommended.

TABLE 6 - Lakes Tested for Dissolved Oxygen, 1968-69.

| <u>Name</u> | <u>Date</u> | <u>Snow Depth</u> | <u>Ice Depth</u> | <u>Sample Depth</u> | <u>ppm Oxygen</u> |
|-------------------------------------|-------------|-------------------|------------------|---------------------|-------------------|
| Airport Pond | 1/27/69 | 13" | 23" | 3' | 2.50 |
| | | | | 5' | 2.50 |
| | | | | 10' | 1.50 |
| | | | | 3' | 0 |
| Birch Lake | 4/2/68 | 0 | 28" | 3' | 9.50 |
| | | | | 6' | 9.00 |
| Bollio Lake | 4/7/68 | 0 | 16" | 3' | 8.00 |
| | | | | 5' | 6.50 |
| | | | | 5' | 8.50 |
| | | | | 10' | 7.50 |
| | | | | 3' | 9.00 |
| | | | | 8' | 6.50 |
| Fielding Lake | 3/28/68 | 6" | 48" | 4' | 8.00 |
| | | | | 25' | 6.50 |
| Little Harding Lake-- Station #1 | 4/2/68 | 6" | 28" | 3' | 4.50 |
| | | | | 10' | 3.50 |
| | | | | 20' | 0 |
| Station #2 | 4/2/68 | 6" | 28" | 3' | 4.50 |
| | | | | 10' | 3.50 |
| | | | | 15' | 2.00 |
| | | | | 18' | 0 |
| Station #3 | 4/2/68 | 6" | 28" | 3' | 3.50 |
| | | | | 6' | 2.00 |
| | | | | 3' | 5.50 |
| | | | | 10' | 5.50 |
| 1/25/69 | 13" | 20" | 5' | 5.50 | |
| | | | 10' | 5.50 | |

TABLE 6 (Cont.) - Lakes Tested for Dissolved Oxygen, 1968-69.

| <u>Name</u> | <u>Date</u> | <u>Snow Depth</u> | <u>Ice Depth</u> | <u>Sample Depth</u> | <u>ppm Oxygen</u> |
|--------------------------------|-------------|-------------------|------------------|---------------------|-------------------|
| 4 Mile Lake (Taylor Highway) - | | | | | |
| Station #1 | 1/22/69 | 8" | 25" | 5' | 5.00 |
| | | | | 8' | 4.50 |
| Station #2 | 1/22/69 | 8" | 25" | 5' | 5.00 |
| | | | | 8' | 4.50 |
| 1239 Mile Lake | 1/21/69 | 11" | 22" | 5' | 4.00 |
| | | | | 10' | 3.50 |
| 1242 Mile Lake | 1/21/69 | 11" | 22" | 5' | 5.50 |
| | | | | 12' | 4.00 |
| 7 Mile Lake | 2/10/69 | 15" | 22" | 3' | 5.50 |
| | | | | 5' | 5.00 |
| Nenana Pond | 3/20/69 | 7" | 34" | 3' | 6.50 |
| | | | | 6' | 6.50 |
| Quartz Lake | 3/6/69 | 6" | 31" | 5' | 5.50 |
| | | | | 10' | 4.00 |
| | | | | 20' | 3.00 |
| | | | | 35' | 0.40 |

Scottie Creek:

The Alaska Highway crosses Scottie Creek at Milepost 122. This dark-brown stained stream flows slowly with a discharge rate of 8 to 10 cfs. The mean depth was eight feet. The creek is reported to have a population of grayling, but this could not be confirmed as a test net set for six hours caught no fish.

Beaver Creek Survey with BLM

Beaver Creek, a tributary of the Yukon River and located generally between the Steese and Elliott Highways, was surveyed for angler potential in cooperation with the Bureau of Land Management. This stream was traveled by canoe from about one mile below the mouth of Nome Creek to the mouth of Montana Creek, a distance of 45 miles. Grayling were easily taken by fly-fishing or spin-casting with small spoons in all regions visited. The grayling captured had a length range of 183 to 343 mm with a mean length of 273 mm. Other fish species observed were whitefish, burbot, and sculpin (Cottus sp.).

In one area a landing strip provides access to the Creek; the grayling were small (mean fork length 191 mm). Here the banks of the stream show intensive angler use.

The stream flows at a rate of approximately 300 cfs. The water is extremely clear and has a good gravel bottom. In the section of the stream between Nome Creek and the big bend area, at the southwestern end of the White Mountains, the stream meanders in several channels. An average mile of stream has about five pools, 700 to 800 feet in length, with a mean depth of 4 feet. Below the big bend area, the pools are generally longer, 1,000 to 1,200 feet and deeper, 15 to 20 feet. The stream shows evidence of extreme flooding in 1967 with driftwood piled 30 feet high in places.

ANADROMOUS FISH INVESTIGATIONS

On August 22, a float trip was made down the Salcha River in cooperation with Commercial Fisheries Division for the purpose of enumerating salmon and spawning areas. The trip started at the confluence of Pasco Creek with the Salcha River and ended at the Richardson Highway bridge, a total distance of approximately 62.5 miles. A count of 1,406 chum salmon carcasses, Oncorhynchus keta, and 30 king salmon, O. tshawytscha, was made.

During a July 30, 1968, aerial survey of the Salcha River, Regnart (1969) counted a total of 739 king salmon and 3,790 chum salmon. The count was made late in the day which adversely affects the count, and probably at least twice as many fish as counted were spawning in the stream. Regnart also determined the age composition of king salmon carcasses sampled which shows: 9.8 percent 3₂ fish, 15.7 percent 4₂, 43.2 percent 5₂, 21.5 percent 6₂, and 9.8 percent 7₂.

The greatest concentration of chum salmon carcasses was in the vicinity of Flat Creek. The king salmon carcasses were all above the mouth of Redmond Creek. They were decomposed with only skin and bones remaining indicating that the timing of this trip was about two weeks late.

Salmon were noted in the Chatanika River during late August and September with two king salmon and 35 chum salmon being passed through a weir located just below the Elliott Highway bridge. Twelve pairs of chum salmon were observed spawning below the weir. Operation of a shocker boat in this same area in late September turned up one adult male silver salmon.

INVESTIGATION OF SPORT FISHING WATERS

Seward Peninsula

A preliminary survey of lakes and streams on the Seward Peninsula was conducted July 10 to 15. In order to obtain information on the area as a whole, about 250 miles of the road system was traveled. The larger streams were sampled with spin-casting gear. A total of one lake and eleven streams was visited (Area Map - Figure 1).

Salmon Lake:

This is the only lake easily accessible to the Nome anglers (Mile 37, Nome-Kougarok Road). It has a surface area of 1,860 acres, a reported maximum depth of 80 feet, and an elevation of 442 feet. Snow drifts were still present in shaded areas on the lake shore in mid-July.

A gill net set on the northwest shore for six hours collected two whitefish, Coregonus sp., (350 and 363 mm) and two grayling (404 and 417 mm).

Other species of fish present, as reported by a thirty-year resident of the area are: all species of Pacific salmon, plus Arctic char, (Salvelinus alpinus), northern pike, and burbot. An aerial survey made by a Commercial Fish Biologist (Regnart, 1969) revealed 830 red salmon, O. nerka, in the lake in August.

A campground established by the Department of the Interior is located near the outlet of the lake. According to local residents, sport fishing activity is said to be heavy at times. Burbot are fished with set lines in the winter. The sport fishing potential is good.

Nome River (Nome area):

This clear water system rises in the Kigluaik Mountains, flows south-erly for approximately 40 miles and discharges into Norton Sound, about three miles east of Nome. The intertidal area of this stream is extensively utilized by sport anglers. Proximity to Nome, accessibility by road and good fish populations are responsible for this popularity. Pink salmon, O. gorbuscha, chum salmon, and a few king salmon are present in the stream in early July, while silver salmon and Arctic char-Dolly Varden are present in the fall. Grayling are found in the upper areas of this river.

The greatest concentration of anglers was found fishing the inter-tidal area. On July 10 from 7 to 9 p.m., seven anglers were fishing for pink salmon; and on July 11, during the same hours, 12 fishermen were fishing this area.

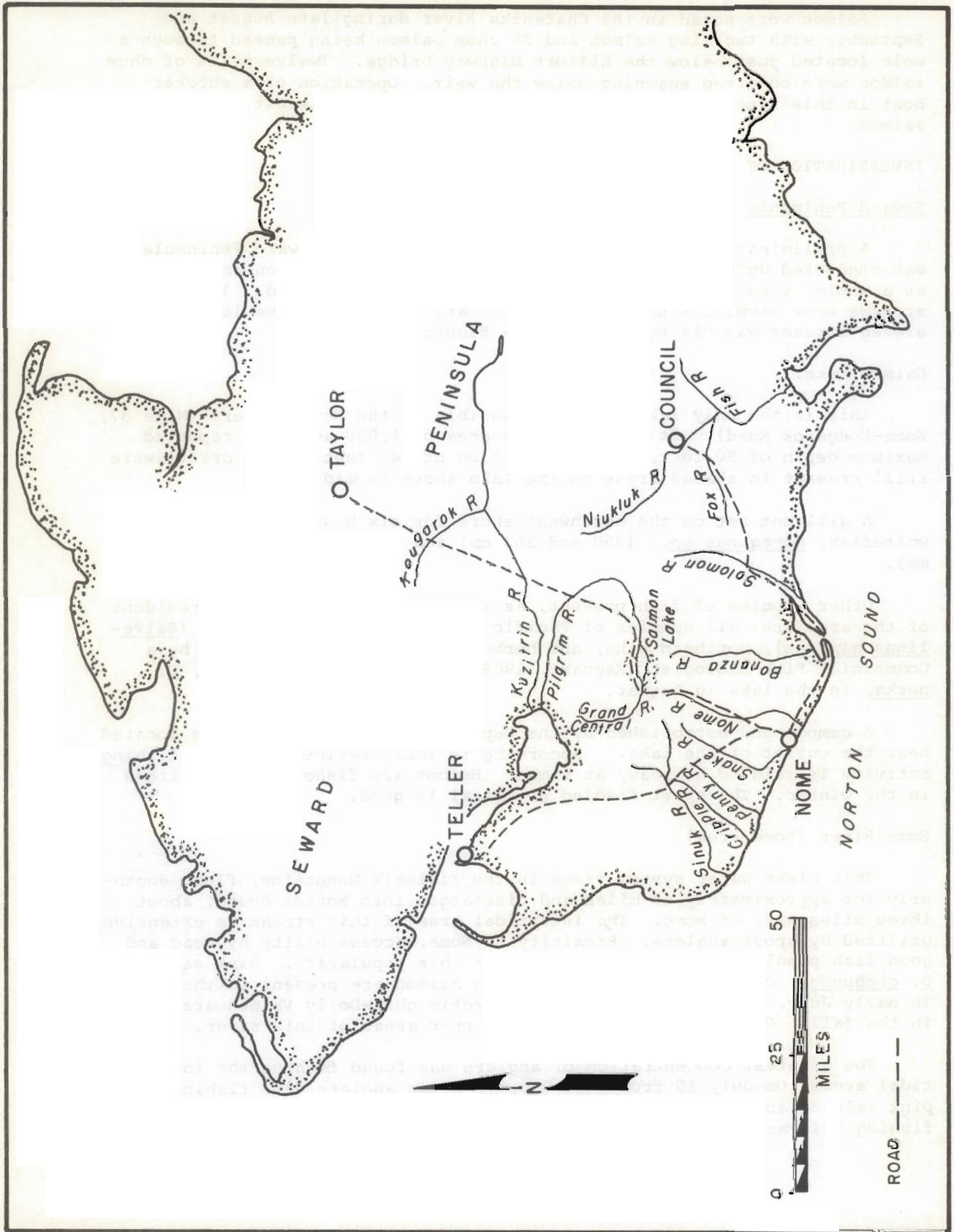


FIGURE 1. SEWARD PENINSULA AREA MAP.

The Nome River is also accessible at Osborn Creek about five miles upstream from the mouth and again at Dexter Creek about 12 miles from the mouth. From Dexter Creek the Nome-Kougarok Road parallels the river for about 23 miles.

Snake River (Nome-Teller Road):

The mouth of this river is used as the Nome harbor. On the first half mile from the sea, this stream has been extensively altered by man; the first two miles is subject to a moderate degree of pollution. The water is clear at the highway bridge 6.5 miles northwest of Nome. The Water Resources Division of the U.S. Geological Survey has measured the mean discharge rate for July as 380 cfs.

Two king salmon were observed under the highway bridge on July 10. Angling was tried, but proved unsuccessful. Although no other fish were observed, this stream is reported to have pink and chum salmon in the summer and silver salmon and Dolly Varden-Arctic char in the fall, plus grayling year around.

Penny River (Nome-Teller Road):

This small river, 14 miles long, is reported to have grayling, silver salmon and Arctic char-Dolly Varden, although none were observed. It has a limited potential and supports light angler use at present. The highway to Teller crosses it about five miles from the mouth of this stream.

Cripple River (Nome-Teller Road):

This is a small stream about 25 miles long and is crossed by the Teller highway about 16 miles from the mouth. Grayling were present in July and silver salmon in September. Pink and chum salmon may be in this stream but are probably nearer the mouth.

Sinuk River (Nome-Teller Road):

This is undoubtedly the best stream for angling along the Nome-Teller Road. All species of salmon are present plus grayling and Dolly Varden-Arctic char. This river is about 40 miles long, has one large lake named Glacial Lake in its drainage, and flows at the rate of 800 to 1,000 cfs in July. The highway bridge is located about 15 miles upstream from the mouth. At present the angler use is moderate to light. The potential for recreational fishing is high.

Grand Central River (Nome-Kougarok Road):

This is a short river 11 miles long emptying into Salmon Lake. Spawning areas for red salmon and silver salmon were noted. Chum, pink and an occasional king salmon are present at times. Arctic char-Dolly Varden are present in fall. The river has a limited sport fishery.

Pilgrim River (Kruzgamepa River) (Nome-Kougarok Road):

This river originates at Salmon Lake. Several salmon species, grayling, whitefish, northern pike and burbot are present. The highway parallels this river for about four miles. A public campground is located

where the river begins at Salmon Lake. Sport fishing is reported to be heavy here during salmon migrations. No salmon were observed in this area during the survey; however, a Commercial Fish biologist counted 645 spawning red salmon during an aerial survey at a later date. The potential fishery is not fully utilized at present. The main areas of angling are: the outlet of Salmon Lake, Iron Creek and Cottonwood Bridge.

Kuzitrin River (Nome-Kougarok Road):

This is the largest river on the Nome-Kougarok Road. It has a mean discharge rate of 1,870 cfs for the month of July and drains an area of approximately 1,720 square miles with its terminus in Imuruk Basin. The highway crossing is about 65 miles from Nome. Grayling were caught from this stream during the survey, and pink and chum salmon were observed. Local residents report king salmon, silver salmon, char, and northern pike are also present. This river is not heavily utilized by sportsmen, but sport fishing potential is high especially if a boat is used.

Kougarok River (Nome-Kougarok Road):

This stream is a main tributary to the Kuzitrin River. It is crossed by the road to the Taylor mining district at Mile 85. Since the road becomes very poor beyond this bridge, very little traffic is found at this river crossing. Although no fish were caught or observed, it is assumed that those species which inhabit the Kuzitrin are probably found in this river. Sport fishing potential at the highway crossing is not good, as the stream is shallow.

Solomon River (Nome-Council Road):

This small river is located east of Nome on the Nome-Council Road. It has been well placered in the past, and several old dredges are still to be found on the river bank. Pink salmon and grayling were caught in this stream, and it is reported to have silver salmon and Arctic char. The road parallels this stream for about eight miles giving excellent accessibility. It does not appear to be utilized by anglers to any great extent at present. The angling potential could be classed as moderate.

Fox River (Nome-Council Road):

This river is located on the Nome-Council Road between the Solomon River and the Niukluk River. The road occupies the same valley as this stream for about 10 miles. Grayling are present in these clear waters, and the specimens taken on this survey had a size range between 230 and 325 mm. It does not have extensive angling pressure at the present time.

Niukluk River (Nome-Council Road):

A large clear river with a 1,000 to 1,500 cfs discharge, the Niukluk River is tributary to Fish River which in turn discharges into Golovnin Bay. The Nome-Council Road ends on the banks of this river with the nearly abandoned village of Council on the opposite shore. Pink and chum salmon were present in the stream at the time of the survey and could easily be taken on red and white spoons. Grayling and whitefish were also seen, but the anglers were interested primarily in the salmon. Dolly Varden-Arctic char and silver salmon are present later in the season.

This is a popular spot for Nome residents to visit for a weekend. Three families arrived for a weekend of fishing at the time of this survey. It is also a boat launch area for trips down the Niukluk to the Fish River where fishing is reportedly good.

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Prepared by:

Approved by:

Carl E. Spetz
Fishery Biologist

s/Louis S. Bandirola
D-J Coordinator

Date: April 1, 1969.

s/Rupert E. Andrews, Director
Division of Sport Fish

This is a popular
fish family and
it is also a good
source of food.



Arctic char investigation study in Interior Alaska.