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STATE OF ALASKA

William A. Egan, Governor

ANNUAL REPORT OF PROGRESS, 1963 - 1964

FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-5

SPORT FISH INVESTIGATIONS OF ALASKA

ALASKA DEPARTMENT OF FISH AND GAME
Walter Kirkness, Commissioner

E. S. Marvich, Deputy Commissioner

Alex H. McRea, Director
Alaska, Sport Fish Division

Louis S. Bandirola, Coordinator

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Merged with A.R.J.I.S. ANCHORAGE, ALASKA

UNIVERSITY OF ALASKA
ARCTIC ENVIRONMENTAL INFORMATION
AND DATA CENTER
707 A STREET
ANCHORAGE, ALASKA 99501

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INTRODUCTION

This report of progress consists of Job Segment Reports from the State of Alaska Federal Aid in Fish Restoration Project F-5-R-5, "Sport Fish Investigations of Alaska."

The project is composed of 25 separate studies designed to evaluate the various aspects of the State's recreational fishery resources. Of these, eight jobs are designed to continue the cataloging and inventory of the numerous State waters in an attempt to prepare an index of the recreational waters. Four jobs are designed for specific sport fishery creel census while the remainder of the jobs are more specific in nature. These include independent studies on king salmon, silver salmon, grayling, Dolly Varden, a statewide access evaluation program, egg take program and a residual toxaphene study. The information gathered from the combined studies will provide the necessary background data for a better understanding of local management problems and assist in the development of future investigational studies.

The subject matter contained within these reports is often fragmentary in nature. The findings may not be conclusive and the interpretations contained therein are subject to re-evaluation as the work progresses.

Volume 5 Report No. 3-A

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

STATE: ALASKA Name: Sport Fish Investigations of Alaska.

Project No: F-5-R-5 Title: Inventory and Cataloging of the Sport Fish and Sport Fish Waters in Upper Southeast Alaska.

Job No: 3-A

Period Covered: July 1, 1963 to September 1, 1963.

Abstract:

Inventory and cataloging of the waters of Upper Southeast Alaska commenced in 1961 (Volume 3 and 4, Report No. 3-A, Dingle-Johnson Reports, 1961-62, 1962-63). This report is a continuation of that operation. The report is brief as the investigator was transferred shortly after the project period started.

Standard survey techniques were used in evaluating waters readily available or heavily utilized by sport anglers of this area. A total of 14 waters was visited during the period covered by this report. Four of these waters are considered in detail and recommendations are presented for their management.

Recommendations:

Greys Pass: This area is providing recreational king salmon fishing close to a population center. During the 1963 season, a total of 30 salmon was recorded by the census taker. The catch per angler was 0.22 salmon at the time of interview. It is recommended this area remain open to recreational fishing as Greys Pass is but a small segment of the area comprising the mouth of the Stikine River and census figures do not illustrate a detrimental take by sport anglers.

Towers Arm Lake: Towers Arm Lake presently offers excellent angling as is shown by the catch rate of 3.75 fish per hour. The new public facilities will attract an increased number of recreationalists to this area. It is recommended

that this lake be kept under surveillance so that the effects of the increased public usage may be determined.

Lower Dewey Lake: Lower Dewey Lake presently contains fishable populations of eastern brook trout and Dolly Varden char. The majority of these fish were found to be small in size, however, and hybridization was encountered. To increase the size of the fish and to enhance their attractiveness to the recreational angler, it is recommended that this lake be rehabilitated and restocked with rainbow trout following detoxification.

Crevice Creek Lake: Crevice Creek Lake has proven itself capable of producing excellent grayling. It is recommended that a public-use cabin be constructed and a boat be placed at this lake. It is further recommended that the public be made aware of this fishery via the available news media.

Objectives:

1. To determine the current status, potential and public availability of Alaska's sport fishing waters for formulation of future management investigations.

2. To assess environmental characteristics and formulate plans for application of restoration measures, availability of sport fish egg sources for experimental hatching and rearing, population manipulations, and catch data as acquired by periodic creel census.

3. To evaluate multiple water use development projects for proper protection of the sport fish resources.

Techniques Used:

The techniques used were nearly identical to those utilized during the 1962-63 reporting period. Details may be found in "Alaska Department of Fish and Game, 1962-63 Dingle-Johnson Progress Report, Volume 4, Report 3-A."

It is felt that the four major criteria used in selecting waters to be surveyed are important enough to restate. These criteria were:

1. Finish incomplete surveys on waters presently under direct management measures.

2. Conduct surveys on waters that are now, or soon will be, subjected to appreciable angling intensities.

3. Survey waters that appear to hold a potential for providing recreational fishing.

4. Evaluate accessibility and accommodations available at the waters within the study area.

Findings:

Greys Pass

A study of the recreational king salmon fishery in the Wrangell area was undertaken in early 1963. Effort was concentrated in the Greys Pass area as it receives the bulk of the early fishing pressure and is subject to considerable public concern.

Greys Pass is located eight miles northwest of Wrangell at the mouth of the Stikine River. The entire area is closed to commercial fishing. It is accessible by small boats except on bad weather days. The fishing is conducted from anchored boats with the bait receiving action from the current. King salmon are the only fish sought, although bottom species are occasionally caught. Water depth in this location varies from 12 to 20 feet.

The creel census was conducted by boat with the census taker contacting the anglers on the grounds. It was found that the fishery moved from this area by the first of June. The census was started in late February and concluded in late May.

The following table will illustrate the major finding:

TABLE 1. Fishing Pressure in Greys Pass, 1963.

Month	No. Census Trips	No. Anglers Checked	No. King Salmon Checked
February	1	0	0
March	6	4	0
April	21	58	13
May	21	77	17
Total	49	139	30

The king salmon censused ranged in size from 27-1/2 to 40 inches and weighed from 10 to 34-1/2 pounds. The average was 33-1/2 inches and 18-1/2 pounds. The catch per angler was 0.22 king salmon. (It is realized that not every angler or salmon was censused, but the results of this survey are felt to be reasonably representative.) The anglers were censused prior to the completion of their trips. The 139 anglers interviewed had fished a total of 473 hours or an average of 3.4 hours each at the time of censusing.

Towers Arm Lake

Towers Arm Lake is an 80-acre body of water located at the headwater of the major tributary entering Towers Arm at the head of Duncan Canal, Kupreanof Island. The surrounding land is owned by the U. S. Forest Service. It is 20 air miles west of Petersburg. Public facilities include a recreational cabin provided by the U. S. Forest Service and a skiff provided by the Alaska Department of Fish and Game.

This lake is approximately 80 acres in size and has a maximum depth of 42 feet. There are two major inlets with suitable spawning areas. Numerous small side tributaries were noted which were found to be blocked by beaver activity. Fish were observed in the beaver ponds but, because of the dark water color, their species could not be ascertained.

Three 125-foot variable mesh gill nets were fished 12 hours each. They were located off the major inlet and outlet and at mid-lake. The total catch is presented in the following table.

TABLE 2. Results of 36 Hours Test-Netting, Towers Arm Lake.

Species	No. Caught	Size Range	Average Size in Inches	Weight Range in Ounces	Average Weight in Ounces
Cutthroat	36	5.4-15.5"	10.2	1 - 22	7
Dolly Varden	32	5.5- 7.4"	6.9	1 - 3	2
Cottids	7				

Rod and reel sampling was used to determine a catch rate for sport tackle of 3.75 fish per hour.

All fish examined exhibited typical resident characteristics. A survey of the outlet revealed several large beaver

dams which were considered barriers to fish migrations. A falls 1.5 miles above tidewater blocks the watershed to anadromous species.

Lower Dewey Lake

Lower Dewey Lake is a 33-acre lake at 450 feet elevation one-half mile east of Skagway. The outlet is a series of falls which are a total barrier to fish passage. It is reached by a steep foot trail. The lake presently furnishes water for both domestic and power purposes. Heavy recreational use of the watershed was observed.

Examination of the stocking records show this lake was planted with 15,000 eastern brook trout fingerlings in 1921. Additional plantings of the same species were made in 1926 with 5,000 and in 1927 with 2,800. In 1952 a planting was made with 260 adult rainbow trout.

A total of 24 net hours in July resulted in the recovery of 20 fish; 8 eastern brook trout which ranged from 6-1/2 to 20 inches, 8 Dolly Varden ranging from 5-1/8 to 8-1/8 inches and 4 eastern brook/Dolly Varden hybrids ranging from 5-1/8 to 7-1/2 inches. The largest eastern brook trout weighed 3 pounds, 15 ounces. No evidence of rainbow trout was found.

Crevice Creek Lake

Crevice Creek Lake is approximately 200 surface acres in size. Its outlet is a 1,500-foot falls which empties into the south fork of the Antler River, 35 air miles north of Juneau. The lake lies at the 1,950-foot contour. Earlier investigations revealed this lake to be barren of fish and abundant in aquatic food organisms. It was subsequently stocked with 30,000 newly-hatched grayling fry in early July, 1962.

In August of 1963, the lake was test netted and over 150 grayling were captured in one haul with a 100-foot beach seine. Thirty of these fish were randomly removed for examination. They ranged in size from 4.0 to 5.7 inches in fork length, and from 0.4 to 1.1 ounces in weight. The average grayling was 4.8 inches and 0.7 ounces. Examination of stomach contents revealed Plecoptera to be the favored food item, followed by Diptera and Hemiptera. The sex ratio was 1.3 females to every male.

Prepared by:

Roger Wadman
Fishery Biologist

Approved by:

Louis S. Bandirola
D-J Coordinator

Alex H. McRea, Director
Sport Fish Division

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