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STATE OF ALASKA

William A. Egan, Governor



ANNUAL REPORT OF PROGRESS, 1962 - 1963

FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-4

SPORT FISH INVESTIGATIONS OF ALASKA

Alaska Department of Fish and Game

Walter Kirkness, Commissioner

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Sport Fish Division

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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-4, "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. While some studies are of a more general nature and deal with gross investigational projects, others have been developed to evaluate specific problem areas. These include studies of king salmon, silver salmon, grayling and State Access requirements. The information gathered will provide the necessary background data for a better understanding of local management problems and development of future investigational studies.

The assembled progress reports may be considered fragmentary in many respects due to the continuing nature of the respective studies. The interpretations contained therein, therefore, are subject to re-evaluation as work progresses and additional information is acquired.

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

State: ALASKA Name: Sport Fish Investigations of Alaska.
Project No: F-5-R-4 Title: Lake Trout - Whitefish Investigation of Summit and Paxson Lakes.
Job No: 11-B

Period Covered: August 1, 1962 to June 18, 1963.

Abstract:

Work on this project consisted of gathering data on Summit and Paxson Lakes which consisted of population estimates, collection of specimens for laboratory analysis, along with physical and chemical conditions. Round whitefish specimens are being processed by Mr. James Peck, University of Michigan, who will use the data for a Master Degree thesis.

Objectives:

To estimate the size and characteristics of lake trout and whitefish population in Paxson and Summit Lakes.

To conduct an age and growth study on the lake trout and whitefish in these lakes.

To determine the reproductive requirement and success of lake trout and whitefish in these lakes.

To determine the relationship of physical and chemical conditions in these lakes, including area depth configuration, water exchange, and temperature variations. Complete bottom contouring will be accomplished.

Parasites of lake trout and whitefish will be classified.

Introduction:

The initial project was to gather as much of the information as possible during the 1962-1963 segment on Paxson Lake which is approximately six square miles in size and Summit Lake which is five square miles in size.

A field crew of two men started work on August 1, 1962, and laboratory work was conducted through the winter. Total analysis of data will be undertaken at the end of the 1963 field season.

Techniques Used:

Standard survey methods were employed to gather physical data. A Bendix recording fathometer was used to obtain depth readings from both lakes.

Standard 125 foot variable mesh experimental gill nets were used to determine fish populations present and to collect specimens.

Stations were set up on the lakes to obtain temperature and chemical variations throughout the lakes.

Specimens were frozen in the round and stored for laboratory analysis.

Findings:

Physical measurements of Paxson and Summit Lakes were taken including bottom contours, temperature profiles and basic chemical characteristics. Maps of both lakes have been drawn showing depth contours and biological stations. Charts depicting temperature profiles for the period of time covered by this report have been prepared.

Sampling gill nets and seines were employed in obtaining population data and collection of specimens. A

total of 1464 hours of gill netting was accomplished resulting in the capture of 207 lake trout, 1285 round whitefish, 527 lake whitefish, 50 grayling and 10 burbot.

All frozen lake trout specimens were dissected and checked for parasites by the Department parasitologist and parasite specimens preserved for positive identification. Stomach content, gonad condition and flesh color were checked and recorded for each lake trout specimen. Branchiostegal rays were collected from all trout for correlation with the scale method of age and growth.

Scale readings for age and growth data has been completed for a major portion of the round whitefish. A portion of the lake trout scales has been read from specimens of both lakes. Correlation between the branchiostegal rays has not been attempted to date.

Recommendations:

Based on data collected it is recommended that:

1. Physical information collection such as temperature profiles, and basic chemical characteristics be collected at all stations to substantiate data already collected.
2. Sampling methods be employed in an attempt to supplement the collection of the juvenile fish population.
3. Bottom samples and plankton collections will be obtained to estimate the basic supply of fish food in the lakes.
4. Emphasis be placed on the location of lake trout spawning beds.

Prepared by:

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Date: June 20, 1963.

Approved by:

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