

# IDAHO

## DEPARTMENT OF FISH AND GAME

**Jerry M. Conley, Director**

FEDERAL AID IN FISH RESTORATION

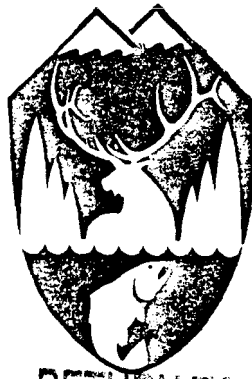
Job Performance Report, Project F-73-R-7

Subproject II: Anadromous Fish Investigations

Study I: Anadromous Fish Research Supervision and Planning

Job No. 3: Anadromous Fish Computerized Data System

Job No. 4: Anadromous Fishery Research Supervision and Planning



by

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TABLE OF CONTENTS

	<u>Page</u>
<b>Job No. 3: <u>Anadromous Fish Computerized Data System</u></b>	
ABSTRACT .....	1
INTRODUCTION .....	2
OBJECTIVE .....	2
METHODS .....	2
RESULTS .....	3

LIST OF TABLES

Table 1. Groupings of anadromous data needs for computerization .....	4
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<b>Job No. 4: <u>Anadromous Fishery Research Supervision and Planning</u></b>	
ABSTRACT .....	6
INTRODUCTION .....	6
OBJECTIVES .....	6
METHODS .....	6
RESULTS .....	6

## JOB PERFORMANCE REPORT

State of: Idaho NAME: ANADROMOUS FISH  
INVESTIGATIONS  
Project No.: F-73-R-7 TITLE: Anadromous Fish  
Subproject No: II Computerized Data  
Study No.: I System  
Job No.: 3  
Period Covered: 1 March 1984 – 28 February 1985

### ABSTRACT

The Department of Fish and Game has purchased and installed a Honeywell micro-mini computer system in the headquarters and regional offices. This system will allow for centralization and standardization of anadromous fish data. DBASEII data base management system was selected for use in storage, retrieval and manipulation of the data. The anadromous fish data was grouped according to needs and immediate availability.

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## INTRODUCTION

The restoration of the severely depleted anadromous fish (salmon and steelhead) runs into the state of Idaho has been a task of great magnitude and has required cooperation of many federal, state and private entities. Because the runs cross three state boundaries and at times penetrate international boundaries, the management of these fish can become quite complex both biologically and politically. Because of the many state and federal agencies involved in the overall management of these species, data collection and dissemination of this information can be an arduous and quite often untimely task.

The need for a central anadromous fish data base would provide for a more efficient and timely manner of storage, manipulation and dissemination of data.

Prior to 1984, any data collected by the Department could only be stored and accessed through the Idaho State Auditor's IBM 3033 mainframe computer located in Boise. This was not an efficient nor effective system for field personnel to have access to data necessary for proper management of these fish species.

In 1984, the Department installed a Honeywell micro-mini system. Each of the eight regional and subregional offices now have a Honeywell 6/10 micro-system with dual disk drives and 512 RAM. The operating system is primarily MS-DOS with tie-in available to the larger 6/75 mini-computer at the Headquarters office in Boise. A 150 cpu graphics printer is also available at each field office. The Honeywell DPS 6/75 mini-system at the Headquarters office has 1 megabit RAM and has direct communications with the Auditor's IBM 3033.

These machines provide the capability for field personnel to store and retrieve anadromous data in a much more effective and timely manner.

## OBJECTIVE

To develop a computerized data system for use by salmon and steelhead management and research personnel.

## METHODS

Prior to implementing an anadromous fish data base, software for storage, retrieval and presentation of data had to be evaluated for the applicability into the program.

The Department's data processing section evaluated software for applicability to field data storage, retrieval, analyzation and presentation. This would also allow for standardization among regions and compatibility with future hardware needs.

Data on other computer systems were evaluated for applicability and ease of transfer to the selected data base system.

Other fishery workers were consulted in regards to developing a needs list for information to be included in the anadromous computer data base. The needs were categorized into four groups. These groups were not necessarily developed to prioritize work but rather were based on availability of data and to some extent, the immediate need for the data.

## RESULTS

The Honeywell system was delivered to the regions in early summer 1984. A majority portion of the project since that time has been involved with familiarization of the system and how our data needs can be interfaced with it.

DBASE II was selected as the software for use by the Department in handling field data. DBASE II is a data base management system that allows for storage of 65,000 records.

The Honeywell graphics package, CHART, was also obtained for use in presentation of data. This program is compatible with DBASE II files.

Historic Columbia River and Snake River dam counts and chinook salmon spawning redd counts were available through the University of Idaho's computer system. These data have been converted to DBASE II files and are presently on the system.

The Department's coded wire tagging program has been storing and manipulating data files using the Statistical Analysis System (SAS) at the University of Idaho. These files have been converted to DBASE II, and command files are being developed for adding to those files as well as reporting the data in required formats.

Group I data included Columbia and Snake river dam counts, coded wire tag information and salmon spawning ground redd counts (Table 1). These data bases were already developed on the University of Idaho's mainframe computer.

Group II data includes harvest estimates and spawning escapements (hatchery vs. wild). Statewide harvest for anadromous fish are presently estimated by incorporating check station and roving creel census with a post-season telephone survey.

Group III data included miscellaneous field data that will provide information regarding the relationships between smolt production and returning spawning escapement, habitat inventory, historic distribution and run estimates.

Group IV data included those items relating to hatchery operations.

Table 1. Groupings of anadromous fish data needs for computerization.

**GROUP I**

Columbia River and Snake River weekly dam  
counts  
Salmon spawning ground redd counts  
Coded wire tag data storage and retrieval

**GROUP II**

Harvest estimates by census interval  
Projected estimates based on run size  
Annual estimates based on post season  
telephone surveys  
Harvest estimates outside Idaho

**GROUP III**

Smolt production based on densities  
Smolt production potential  
Spawning escapement estimates  
Habitat inventory  
Historic distribution

**GROUP IV**

Daily update of returning spawners  
Weekly update of eggs taken, and egg, fry  
and fingerlings on station  
Distribution of surplus adults  
Distribution and numbers of eggs planted and  
fry and smolts released

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## JOB PERFORMANCE REPORT

State of: Idaho NAME: ANADROMOUS FISH INVESTIGATIONS  
Project No.: F-73-R-7 TITLE: Anadromous Fishery  
Subproject No.: II Research Supervision  
Study No.: I and Planning  
Job No.: 4  
Period Covered: 1 March 1984 - 28 February 1985

### ABSTRACT

I provided supervision and administrative support for six research projects during 1984. All permanent anadromous fishery researchers were given performance evaluations. I reviewed and edited annual reports for each of these projects. The anadromous fishery research subsection participated in two field exercises to provide assistance on the South Fork Salmon and Clearwater rivers.

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## INTRODUCTION

This project involves supervision and coordination of anadromous research studies.

## OBJECTIVES

To provide administrative support and supervision to field biologists on anadromous projects.

To plan the anadromous fishery research program.

## METHODS

Coordination with Department and outside agency personnel was necessary for planning future anadromous research studies.

## RESULTS

Six research projects were under my supervision during 1984. These projects were South Fork Salmon River investigations funded by the Lower Snake River Compensation Program (LSRCP), Hatcheries Evaluation funded by LSRCP, Statewide Anadromous Fish Harvest funded by LSRCP, Smolt Monitoring and Condition funded by the Bonneville Power Administration (BPA) and Potential Sockeye Salmon Production in Alturas Lake Creek Drainage funded by U.S. Forest Service, Sawtooth National Forest.

I gave performance evaluations to those researchers involved in these studies and edited annual reports for each. As the Department's coordinator with the Lower Snake River Compensation Program, I attended two meetings with other agency coordinators to discuss development of guidelines and budgets of LSRCP projects.

As a research subsection, the anadromous fishery researchers participated in two field exercises during the year. In April we assisted the South Fork Salmon River project in collecting information on spawning steelhead. In September we made an effort to determine the hatchery vs. wild composition of steelhead in the early segment of the Clearwater River escapement. We found during that time 39% of the steelhead caught were of wild origin.

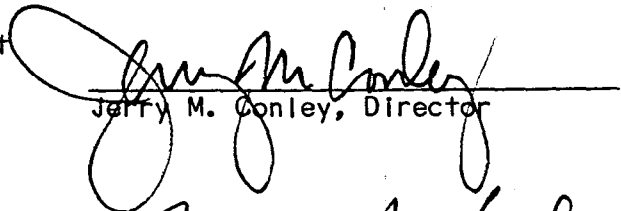


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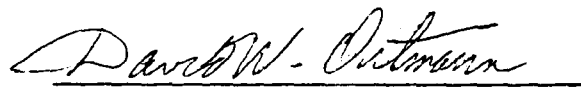
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