FISHERY RESEARCH

STEELHEAD FISH HATCHERY EVALUATIONS—IDAHO

Project Progress Report

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Steelhead Fish Hatchery Evaluations—Idaho

Period Covered: October 1, 1995 to September 30, 1996

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TABLE OF CONTENTS

Page

ABSTRACT 1

INTRODUCTION 2

OBJECTIVES 2

Objective 1. 2
Sub-objective 1.1 3
Sub-objective 1.2 3
Objective 2. 3
Sub-objective 2.1 3
Sub-objective 2.2 3

METHODS 3

IDFG-LSRCP Program Success Documentation—Objective 1 3
Hatchery Database Development—Sub-objective 1.1 3
Hatchery Operations Documentation—Sub-objective 1.2 3
Migration Conditions 4
Migration Timing and Juvenile Survival 4
Adult Returns 5
Fisheries Contribution 5
Hatchery Weirs 5
Smolt-to-Adult Return Rate 5
Experimentation—Objective 2 6
Clearwater Fish Hatchery 6
Cover Experiment 6
Hagerman National Fish Hatchery 6
Acclimation Experiment 6
Sawtooth Fish Hatchery 6
Volitional Release Experiment 6

RESULTS 7

Hatchery Database Development—Sub-objective 1.1 7
Hatchery Operations Documentation—Sub-objective 1.2 7
Clearwater Fish Hatchery 7
Brood Year 1994 7
Brood Year 1995 8
Brood Year 1996 8
Hagerman National Fish Hatchery 9
Brood Year 1995 9
Brood Year 1996 9

Table of Contents (continued.)

Page

Magic Valley Fish Hatchery 9
Brood Year 1995 9
Brood Year 1996 10
Sawtooth Fish Hatchery 10
Brood Year 1994 10
Migration Conditions 10
Migration Timing and Juvenile Survival 11
Adult Returns 11
Fisheries Contribution 11
Hatchery Weirs 12
Sawtooth Fish Hatchery Weir 12
East Fork Salmon River Weir 12
Slate Creek Weir 12
Crooked River Weir 13
Smolt-to-Adult Return Rates 13
Clearwater Fish Hatchery 13
Hagerman National Fish Hatchery 13
Magic Valley Fish Hatchery 14
Experimentation—Objective 2 15
Clearwater Fish Hatchery 15
Cover Experiment 15
Hagerman National Fish Hatchery 15
Acclimation Experiment 15
Sawtooth Fish Hatchery 15
Volitional Release Experiment 15

LITERATURE CITED 17

APPENDICES 33

LIST OF TABLES

Table 1. Number of unique interrogations of PIT-tagged steelhead smolts, by PIT tag file, at Lower Granite Dam (GRJ), Little Goose Dam (GOJ), Lower Monumental Dam (LMJ), and McNary Dam (MCJ) for the 1996 migration period. A total of 8,915 PIT-tagged steelhead were released from Hagerman National, Magic Valley, and Clearwater fish hatcheries between April 2 and May 16, 1996. Steelhead released from Sawtooth and Pahsimeroi fish hatcheries were originally reared at Hagerman National Fish Hatchery. Median travel time is to Lower Granite Dam. 19

List of Tables (continued.)

Page

Table 2. Snake River mean daily in-flow (thousand cubic feet per second) at Lower Granite Dam, Washington, from 1977-1996 during the peak and extended chinook salmon smolt migration periods as defined by Petrosky (1991). 22

Table 3. Estimated number of LSRCP steelhead that returned to Idaho in 1995-1996. The adult return in 1995-1996 included fish from three age classes. Steelhead were reared at Hagerman National, Magic Valley, and Clearwater fish hatcheries. These estimates were prepared by the Idaho Department of Fish and Game's Harvest Monitoring Project and only include steelhead harvested in Idaho's sport fisheries, steelhead that returned to hatchery racks, and fish that escaped to spawn naturally. These are minimum estimates and do not include all tributary and mainstem strays or in-river prespawning mortalities..... 23

Table 4. Steelhead smolts released from Magic Valley, Hagerman National, and Clearwater fish hatcheries that contributed to the 1995-1996 Idaho steelhead return. The number of steelhead smolts released and the estimated number of adults that returned were compared to facility design production targets and projected adult return goals..... 24

Table 5. Summary of the 1996 A-strain steelhead return to the Sawtooth Fish Hatchery weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age. ND indicates "No Data" (i.e., data were not available). 25

Table 6. Summary of the 1996 B-strain steelhead return to the East Fork Salmon River weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age. ND indicates "No Data" (i.e., data were not available). 26

Table 7. Summary of the 1996 B-strain steelhead return to the Slate Creek weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age. ND indicates "No Data" (i.e., data were not available). 27

Table 8. Summary of the 1996 B-strain steelhead return to the Crooked River weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age. 28

Table 9. Smolt-to-adult return rates of coded-wire tagged steelhead smolts released from Hagerman National and Magic Valley fish hatcheries. The number of adults was estimated by Ball (In Press) and only include steelhead harvested in Idaho=s sport fisheries, steelhead that returned to hatchery racks, and fish that escaped to spawn naturally. These are minimum estimates and do not include all tributary and mainstem strays or in-river prespawning mortalities. 29

List of Tables (continued.)

Page

Table 10. Total number of steelhead recovered with coded-wire tags designating them as either acclimated (ACC) or nonacclimated (NON-ACC). Recovered fish were released as smolts at the Sawtooth Fish Hatchery weir in 1993 (brood year 1992) and 1994 (brood year 1993). ND indicates "No Data" (i.e., data were not available). 30

LIST OF FIGURES

Figure 1. Number of unique PIT tag interrogations of LSRCP juvenile steelhead at Lower Granite Dam, Washington, plotted with the average daily in-flow of the Snake River at Lower Granite Dam in 1996. A total of 8,915 PIT-tagged steelhead smolts were released from Hagerman National, Magic Valley, Clearwater, and Sawtooth fish hatcheries between April 2 and May 16, 1996. Fifty-five percent (4,883) of the PIT-tagged fish were interrogated at Lower Granite Dam. Data for 28 fish fall outside of this date range and are not shown. 31

Figure 2. Percent of the adult steelhead return goal achieved by Magic Valley, Hagerman National, and Clearwater fish hatcheries between 1993 and 1996. Annual adult return goals for Magic Valley, Hagerman National, and Clearwater fish hatcheries were 11,660, 13,600, and 14,000 fish, respectively. The first adult steelhead were due to return to Clearwater Fish Hatchery in 1995, however, no adults returned that year..... 32

LIST OF APPENDICES

Page

Appendix A. Table 1. Release data and estimated adult returns for Clearwater Fish Hatchery summer steelhead, brood years 1995 and 1994. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 34

Appendix A. Table 2. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1995. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A double asterisk (**) indicates that the fish were included in one of the above Mark Type categories. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 38

Appendix A. Table 3. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1995. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 42

List of Appendices (continued.)

Page

Appendix A. Table 4. Release data and estimated adult returns for Sawtooth Fish Hatchery summer steelhead, brood year 1994. An asterisk (*) indicates that the fish were counted in the NON-CWT category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement..... 47

Appendix B. Table 1. Release data and estimated adult returns for Clearwater Fish Hatchery summer steelhead, brood year 1992. An asterisk(*) indicates that the fish were counted in the NON-CWT category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement..... 48

Appendix B. Table 2. Release data and estimated adult returns for Clearwater Fish Hatchery summer steelhead, brood year 1993. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement..... 50

List of Appendices (continued.)

Page

Appendix C. Table 1. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1991. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A double asterisk (**) indicates that the fish were included in one of the above Mark Type categories. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The Hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement..... 54

Appendix C. Table 2. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1992. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 57

Appendix C. Table 3. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1993. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 61

List of Appendices (continued.)

Page

Appendix D. Table 1. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1991. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A double asterisk (**) indicates that the fish were included in one of the above Mark Type categories. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 64

Appendix D. Table 2. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1992. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 67

Appendix D. Table 3. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1993. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement. 71

ABSTRACT

This annual report summarizes activities associated with Idaho-Lower Snake River Compensation Plan (LSRCP) hatcheries' activities from October 1, 1995 to September 30, 1996. Included in this report are all fall 1995 and spring 1996 adult steelhead *Oncorhynchus mykiss* returns and all releases of juvenile steelhead made within the reporting period. Information presented in this report supersedes that included in previous reports.

An estimated 8,168 LSRCP steelhead returned to Idaho during this reporting period. Hagerman National Fish Hatchery produced an estimated 4,732 adult steelhead; Magic Valley Fish Hatchery produced an estimated 3,434 adult steelhead, and Clearwater Fish Hatchery produced an estimated two adult steelhead. Steelhead returns to Idaho remain well below the LSRCP program mitigation goal of 39,260 adult steelhead.

Adult returns to Idaho-LSRCP hatchery racks included 553 A-strain steelhead to Sawtooth Fish Hatchery, 54 B-strain steelhead to the East Fork Salmon River satellite facility, 38 B-strain steelhead to the Slate Creek weir, and three B-strain steelhead to the Crooked River weir. Approximately 54.1%, 59.3%, and 39.5% of the steelhead that returned to Sawtooth Fish Hatchery, East Fork Salmon River weir, and Slate Creek weir, respectively, were males. All of the adult steelhead that returned to the Crooked River weir were males.

Coded-wire tags were used to determine smolt-to-adult return rates. Smolt-to-adult return rates for brood year 1992 A-strain steelhead reared at Hagerman National Fish Hatchery ranged from 0.05% to 0.33%. Brood year 1991 East Fork B- and Dworshak B-stock steelhead reared at Magic Valley Fish Hatchery and released into the East Fork Salmon River had smolt-to-adult return rates of 0.13% and 0.01%, respectively. Smolt-to-adult return rates for brood year 1992 A-strain steelhead reared at Magic Valley Fish Hatchery ranged from 0.21% to 0.30%.

In April and May 1996, Idaho-LSRCP hatcheries released 3,791,796 brood year 1995 and 210,716 brood year 1994 steelhead smolts. A total of 1,109,885 of these fish were tagged with coded-wire tags. In addition, 8,915 steelhead smolts were released with passive integrated transponder tags.

In September 1995, Clearwater Fish Hatchery released 47,236 brood year 1995 steelhead fingerlings into the South Fork Red River for Idaho Department of Fish and Game (IDFG) Steelhead Supplementation Studies project. A total of 40,970 of these fish were tagged with coded-wire tags. In addition, 4,999 fingerlings were released with passive integrated transponder tags.

In September 1996, Clearwater Fish Hatchery released 43,738 brood year 1996 steelhead fingerlings into the South Fork Red River for IDFG's Steelhead Supplementation Studies project. A total of 42,382 and 5,000 of these fingerlings were released with coded-wire tags and passive integrated transponder tags, respectively.

INTRODUCTION

The Water Resources Development Act of 1976 (90 Stat. 2917) authorized the Lower Snake River Compensation Plan (LSRCP) to mitigate for fish losses caused by the construction and operation of Ice Harbor, Lower Monumental, Little Goose, and Lower Granite dams on the lower Snake River. Mitigation for anadromous fishery losses included the construction and operation of fish hatchery facilities and smolt passage improvements at the lower Snake River dams. The United States Fish and Wildlife Service (USFWS) was authorized to administer the operation and maintenance for 12 hatchery and 11 satellite facilities in Idaho, Oregon, and Washington.

In Idaho, the Idaho Department of Fish and Game (IDFG) operates Clearwater Fish Hatchery, McCall Fish Hatchery, Magic Valley Fish Hatchery, Sawtooth Fish Hatchery, South Fork Salmon River Trap, East Fork Salmon River Trap, and Red River, Crooked River, and Powell satellite facilities. The USFWS operates Dworshak National Fish Hatchery and Hagerman National Fish Hatchery. Adult return goals for the entire LSRCP program are 8,000 summer chinook salmon *Oncorhynchus tshawytscha*, 50,700 spring chinook salmon, 18,300 fall chinook salmon and 55,100 steelhead *O. mykiss* to the Snake River basin. Adult return goals for the Idaho portion of the LSRCP program call for the return of 8,000 adult summer chinook salmon, 40,432 adult spring chinook salmon, and 39,260 adult steelhead. Adult return goals for Idaho-LSRCP steelhead hatcheries are as follows: Clearwater Fish Hatchery—14,000, Hagerman National Fish Hatchery—13,600, and Magic Valley Fish Hatchery—11,660.

The LSRCP program includes a Hatchery Evaluation Study component to monitor and evaluate the mitigation hatchery program. The primary objective of the Hatchery Evaluation Study is to determine the best hatchery management practices for mitigation hatcheries to meet LSRCP and IDFG anadromous fisheries goals. Only if we understand the effects of hatchery operations on adult return characteristics (e.g., return rates, sex ratios, age structure) can we prescribe effective management actions. Tasks defined to satisfy the primary objective are divided into two categories: 1) documentation and 2) investigation. We document hatchery practices for each brood year, or cohort, of fish and mitigation status in terms of annual adult returns. Our success at achieving LSRCP and IDFG goals can then be related to hatchery practices through the documentation tasks. Investigation tasks are manipulative experiments involving modified or alternative hatchery practices, which show potential for increasing adult returns and achieving LSRCP and IDFG goals.

OBJECTIVES

This report summarizes steelhead Hatchery Evaluation Study activities carried out from October 1, 1995 through September 30, 1996. Juvenile steelhead released from Clearwater, Hagerman National, and Magic Valley fish hatcheries during this reporting period are documented as well as adult steelhead that returned to Idaho during the fall of 1995 and the spring of 1996 (hereafter referred to as the 1995-1996 return). Specific objectives identified in Cooperative Work Agreement 14-48-0001-96503 and covered in this report are as follows.

Objective 1. Document the success of the IDFG-LSRCP program in meeting specific adult return goals.

Sub-objective 1.1 Develop a computerized hatchery database standardizing all necessary variables for monitoring and evaluation.

Sub-objective 1.2 Document LSRCP fish rearing and release practices and adult returns in Idaho.

Objective 2. Identify factors limiting hatchery success and recommend possible improvements based on existing knowledge and experimentation.

Sub-objective 2.1 Continue ongoing monitoring (nonmanipulative) studies to determine the relationships between adult returns and hatchery practices, characteristics of hatchery products, and juvenile survival.

Sub-objective 2.2 Conduct controlled studies (manipulative experiments) to determine the relationships between adult returns and hatchery practices, characteristics of hatchery products, and juvenile survival.

The results of experiments performed under Sub-objective 2.2 are printed separately from this report. Some results from those experiments, such as juvenile migration characteristics and adult return rates for experimental groups, are included in this report.

METHODS

IDFG-LSRCP Program Success Documentation—Objective 1

To document the overall success of the program, we compared the estimated number of adult steelhead that returned above Lower Granite Dam between October 1, 1995 and September 30, 1996 to the Idaho-LSRCP goal of 39,260 adult steelhead. The Harvest Monitoring Project estimated the total number of returning adults and partitioned the total return between Clearwater Fish Hatchery, Hagerman National Fish Hatchery, and Magic Valley Fish Hatchery based on coded-wire tag data. Results for Objective 1 are reported under *Results, Adult Returns.*

Hatchery Database Development—Sub-objective 1.1

Specific tasks addressed during this reporting period were to: 1) develop data input screens of hatchery database to document the disposition of returning adult salmon and steelhead, and 2) develop an external tag for adult salmon and steelhead for individual identification. See Rhine et al. (1999[a], 1999[b]) for additional information.

Hatchery Operations Documentation—Sub-objective 1.2

Hatchery operations between October 1, 1995 and September 30, 1996 are documented in this report. Pertinent rearing information affecting brood years 1995 and 1996 are discussed.

Additional information which occurred prior to this reporting period may be included for completeness. Information was collected from Hatchery Brood Year and Run reports, memorandums, and verbal communications with hatchery personnel. Fish marking and tagging information was provided by IDFG's Coded-Wire Tag Laboratory.

Migration Conditions

Snake River discharge during smolt migration is a major factor affecting survival of Idaho's anadromous fishes. Flow conditions at Lower Granite Dam for the 1996 emigration period, the year that brood year 1995 steelhead smolts emigrated, are reported. Adults that returned during this reporting period were from the 1991, 1992, or 1993 broods (depending on the stock and age-at-return). Flow conditions for 1992, 1993, and 1994 are reported since steelhead smolts are reared on a one-year program and released the following spring. Water flow data were obtained from Fish Passage Center reports and the United States Geological Survey Internet site.

Petrosky (1991) defined two time periods that accounted for most of the chinook salmon emigration past Lower Granite Dam. The "extended" period runs from April 20 to May 30 and includes the time when most of the wild and natural yearling chinook salmon emigrate, whereas the "peak" period runs from April 15 to May 5 and encompasses the time when approximately 50% of the yearling chinook salmon emigrate past the dam. Hatchery steelhead smolts are generally released in April and emigrate during the same time period as chinook salmon. Therefore, flows during the extended and peak time periods are reported.

Migration Timing and Juvenile Survival

Passive integrated transponder (PIT) tags were used to evaluate downstream juvenile emigration. The interrogation rate of PIT-tagged juvenile salmonids at Columbia and Snake river dams serves as a minimum survival index because: 1) an unknown (but we believe small) number of PIT-tagged fish that die in the hatchery may go undetected, although we scan the dead fish; 2) not all fish pass through detectors; 3) some PIT tags fail (approximately 2%, Russell Kiefer, IDFG, personal communication) or are lost between tagging and arrival at detection sites; 4) some fish arrive while detection gear is not being operated, and 5) mortality occurs between dams.

Steelhead juveniles were PIT tagged by IDFG Fish Marking personnel. The PIT tag data were submitted to PTAGIS, a computerized PIT tag database operated by Pacific States Marine Fisheries Commission (Columbia River Basin PIT Tag Information System 1997). Interrogation rates and median travel times for specific PIT-tagged groups of steelhead were calculated after retrieving relevant interrogation data from PTAGIS. Interrogation rates were calculated for each PIT tag file, or files depending on the purpose of the tagging, by dividing the number of unique interrogations at Lower Granite, Little Goose, Lower Monumental, and McNary dams by the number of PIT-tagged fish released, multiplied by 100. Median travel times were calculated for each PIT tag file (or files) to Lower Granite Dam.

Adult Returns

Adult return goals for Clearwater Fish Hatchery, Hagerman National Fish Hatchery, and Magic Valley Fish Hatchery are 14,000, 13,600, and 11,660 adult steelhead above Lower Granite Dam, respectively. The Harvest Monitoring Project (i.e., Ball In Press) estimated the total number of LSRCP steelhead that returned to Idaho. This estimate included LSRCP-reared steelhead that were harvested in Idaho's sport fishery and returned to hatchery racks. For steelhead released at in-river locations (i.e., not released at a weir), Ball (In Press) estimated the number of LSRCP-reared steelhead that escaped to spawn naturally. Ball's estimate for total return should be considered a minimum estimate, because all tributary and mainstem strays were not accounted for, nor were in-river prespawning mortalities. The number of steelhead smolts released and the estimated number of adults that returned were compared to facility design production targets and projected adult return goals for each facility.

Fisheries Contribution

Fish Marking personnel from IDFG tagged juvenile steelhead with coded-wire tags according to marking/tagging plans developed by fishery managers and research biologists. The left pelvic fin was excised from B-strain steelhead tagged with a coded-wire tag (CWT) to indicate the presence of a tag. A-strain steelhead tagged with CWT did not have the left pelvic fin excised. The IDFG stopped pelvic fin clipping A-strain steelhead, because researchers in Washington State found that fin clipping had an adverse effect on adult returns. Pelvic fin clipping of B-strain steelhead continued, because the reliability of portable hand wands (CWT interrogation equipment) was questionable for larger fish. The snouts from tagged adult steelhead harvested in Idaho's sport fishery, or from steelhead spawned at IDFG hatcheries, were sent to the Coded-Wire Tag Laboratory and processed. The Harvest Monitoring Project used these data, along with data from a statewide telephone survey, to estimate the total number of steelhead harvested in Idaho. The number of steelhead harvested from specific release groups was derived by expanding CWT recoveries for specific groups. See Ball (In Press) for CWT expansion methods.

Hatchery Weirs

The number of steelhead that returned to the Sawtooth Fish Hatchery, East Fork Salmon River, Slate Creek, and Crooked River weirs were documented by hatchery personnel. The length, sex, and disposition of each fish were recorded. Fish length and strain (A or B) were used to determine age-at-return. Snouts from coded-wire-tagged steelhead were sent to the Coded-Wire Tag Laboratory and processed. The Harvest Monitoring Project used these data to estimate the total number of LSRCP-reared steelhead that returned to hatchery racks or escaped to spawn naturally.

Smolt-to-Adult Return Rate

The Harvest Monitoring Project estimated the total number of LSRCP-produced steelhead that returned to Idaho. For each CWT code, we summed the estimated number of steelhead that returned to Idaho in the 1993-1994 (Ball 1997), 1994-1995 (Ball 1998), and 1995-1996 (Ball In Press) harvest seasons. For specific groups of fish (i.e., individual CWT codes by release site), we calculated a smolt-to-adult return rate (SAR) by dividing the

estimated number of adults that returned (provided by the Harvest Monitoring Project) by the number of smolts released (provided by the Coded-Wire Tag Laboratory), multiplied by 100.

Experimentation—Objective 2

Interim progress reports, printed independently of this report, document the status of Hatchery Evaluation Study experiments. Results for some experiments, particularly adult return rates and emigration rates for experimental groups, are included in this report.

Clearwater Fish Hatchery

Cover Experiment-The purpose of this experiment was to test the effects of shade covers on adult return and juvenile emigration rates. The experiment was conducted using Dworshak B-stock steelhead from the 1992 brood. Refer to Rhine et al. (1999[a]) for methods for this experiment. Steelhead from each group were tagged with coded-wire tags and PIT tags (Appendix B. Table 1). Adults will return between 1995 and 1997. Adult return data will be reported in future reports.

Hagerman National Fish Hatchery

Acclimation Experiment-This is a continuation of the study initiated in 1992 (Rhine et al. 1999[a]) which compared steelhead that were trucked from Hagerman National Fish Hatchery and acclimated at Sawtooth Fish Hatchery for two weeks (Acclimated Group) to steelhead that were trucked from Hagerman National Fish Hatchery two weeks later and released directly into the Salmon River (Nonacclimated Group). This report documents adult returns from the 1992 (2-ocean, Pahsimeroi A-stock) and 1993 (1-ocean, Sawtooth A-stock) broods and juvenile emigration data from the 1995 brood (Sawtooth A-stock). Adults from brood year 1995 will return in 1998 and 1999. Adult return data and juvenile emigration data will be analyzed by brood year. The total number of adults that return from each group will be tested using chi-square analysis ($\alpha = 0.05$). Passive integrated transponder tags will be used to determine unique interrogation rates at Snake and Columbia river dams and median travel time to Lower Granite Dam for each group. Chi-square analysis ($\alpha = 0.05$) will be used to test interrogation rates between groups. Travel times for the two groups will be tested for differences using the Mann-Whitney test ($\alpha = 0.05$) (SYSTAT 1996).

Sawtooth Fish Hatchery

Volitional Release Experiment-A fish-stocking technique designed to reduce the number of nonmigrating (residual) steelhead released into the Salmon River was tested at Sawtooth Fish Hatchery. Steelhead from the 1994 and 1995 broods were used for the study. Steelhead from the 1994 brood were originally part of an experimental two-year rearing program conducted at Sawtooth Fish Hatchery. See *Results, Hatchery Operations Documentation—Sub-objective 1.2, Sawtooth Fish Hatchery* for details of the two-year rearing program. Steelhead from the 1995 brood were reared at Hagerman National Fish Hatchery and were the focus of the Volitional Release Experiment.

Passive integrated transponder tags were used to determine if fish behavior was indicative of parr-smolt transformation and subsequent downstream emigration. Steelhead that volitionally emigrated from upper raceways (migrants) were temporarily detained in lower raceways. Steelhead that failed to emigrate by May 13 were designated nonmigrants. Representative fish from both groups, migrants and nonmigrants, were tagged with PIT tags and released into the Salmon River to determine if migrants were interrogated at downstream dams at a higher rate than fish that displayed no in-hatchery emigration behavior. Morphological characteristics were analyzed for migrants, nonmigrants, and developmental stages (parr, transitional, and smolt). See Rhine et al. (In Press[a]) for complete methods. Results for the 1994 brood are reported in this report. See Rhine et al. (In Press[a]) for results for the 1995 brood.

RESULTS

Hatchery Database Development—Sub-objective 1.1

Data input screens for the 'Adult Inventory' section of the database were completed. In addition, data input screens for the 'Pond Set-up' and 'Pond Treatment' sections of the database were completed. These sections have not been error checked. Output functions for these sections are still under development.

We continued to search for an external tag that could uniquely identify adult salmon and steelhead for database tracking. We modified the operculum staple tags that were tested in 1995 by making the tags out of a more flexible material called TYVEK. In 1996, we tagged chinook with TYVEK tags and found that fewer chinook lost tags; however, tag loss was still unacceptable. Tag loss was attributed to handling and the continued deterioration of the salmon. Tag loss was higher on males than on females because males were not killed after spawning. Tag loss was highest on the small, 1-ocean males.

Hatchery Operations Documentation—Sub-objective 1.2

Clearwater Fish Hatchery

Brood Year 1994-To remain below production release limits in 1995, Clearwater Fish Hatchery held over 135,837 brood year 1994 steelhead for a two-year rearing program. These steelhead were released into Clear Creek on April 18, 1996 (Appendix A. Table 1). Of those, 300 steelhead were released with PIT tags. A total of 166 (55.3%) PIT-tagged steelhead released into Clear Creek were interrogated at downstream dams (Table 1). Median travel time to Lower Granite Dam was 4.4 days (Table 1).

A total of 46,018 brood year 1994 steelhead were released in Crooked River on April 15, 1996 as part of the National Biological Service (NBS) Research Program (Appendix A. Table 1). Both Dworshak B- and Selway B-stock steelhead were released. All fish were marked by excising the left pelvic fin (i.e., LV clip), and 1,798 were tagged with PIT tags. Contact NBS (Steve Rubin, Seattle, WA. 206-526-6282) for program details and PIT tag interrogation results.

In addition, 6,354 brood year 1994 Selway B-stock steelhead were released into the South Fork Red River on April 16, 1996 for the Idaho Steelhead Supplementation Program (Appendix A. Table 1). These fish were originally part of the NBS Research Program, but were later rejected due to genetic differences. Of those, 6,164 were released with coded-wire tags. Contact IDFG's Steelhead Supplementation Studies project leader (Alan Byrne) for program details and PIT tag interrogation results.

Brood Year 1995-Clearwater Fish Hatchery received 911,153 Dworshak B-stock eyed eggs from Dworshak National Fish Hatchery in April and May 1995 (McGehee et al. 1998). Eggs were collected in April at Dworshak National Fish Hatchery during the Number 8, 9, 10, and 11 egg-takes. Survival to release was 71.0% (646,344 smolts). Adipose fins were excised from all fish in September and October 1995. In addition, Clearwater Fish Hatchery received an additional 95,338 eyed eggs from Dworshak National Fish Hatchery that were Selway B-stock, Dworshak B-stock, or of mixed stock origin. These fish were put on a two-year rearing program as part of the NBS Research Program and were scheduled for release in April 1997.

In August 1995, 296,074 Dworshak B-stock steelhead were tagged with coded-wire tags and marked by excising the left pelvic fin. Fish were tagged with coded-wire tags to estimate adult contribution to the fishery. In addition, 1,200 steelhead were tagged with PIT tags in March 1996.

Clearwater Fish Hatchery released 428,513 brood year 1995 steelhead into the South Fork Clearwater River between April 17 and 18, 1996 (Appendix A. Table 1). There were 191,548 fish released with coded-wire tags and 900 fish released with PIT tags. An additional 162,605 brood year 1995 steelhead were released into Clear Creek between April 18 and 24, 1996. Of those fish, 63,556 and 300 were released with coded-wire tags and PIT tags, respectively.

Clearwater Fish Hatchery released 47,236 unmarked Dworshak B-stock steelhead fingerlings (brood year 1995) into the South Fork Red River on September 6, 1995 for the IDFG Steelhead Supplementation Studies project. Of those, 40,970 and 4,999 were released with coded-wire tags and PIT tags, respectively. An additional 8,000 Dworshak B-stock steelhead smolts (brood year 1995) were released into the South Fork Red River for supplementation on April 17, 1996. These fish were marked with an adipose fin clip, and 3,996 were tagged with PIT tags. Contact IDFG's Steelhead Supplementation Studies project leader (Alan Byrne) for program details and PIT tag interrogation results.

Interrogation rates for groups of PIT-tagged fish, excluding those fish used for supplementation, ranged from 62.0% to 76.7% (Table 1). Median travel times to Lower Granite Dam for groups of PIT-tagged fish ranged from 2.6 days to 7.3 days (Table 1).

Brood Year 1996-Clearwater Fish Hatchery received 778,000 Dworshak B-stock eyed eggs from Dworshak National Fish Hatchery in April 1996 (McGehee and Patterson 1998). Eggs were collected at Dworshak National Fish Hatchery in April during the Number 8 through 11 egg-takes. Survival rate from eyed eggs to the fry stage was 93.3% (725,759 fish). Adipose fins were excised from all fish in August and September 1996, except steelhead used in the supplementation program.

A total of 43,738 unmarked Dworshak B-stock steelhead were released into the South Fork Red River as fingerlings in September 1996 for supplementation. Of these fish, 42,382 and 5,000 were released with coded-wire tags and PIT tags, respectively. Steelhead used for

supplementation were not adipose fin-clipped. Contact IDFG's Steelhead Supplementation Studies project leader (Alan Byrne) for program details and PIT tag interrogation results.

Hagerman National Fish Hatchery

Brood Year 1995-Hagerman National Fish Hatchery received 1,652,565 eyed eggs comprised of three different stocks of steelhead: Sawtooth A-stock (562,513 eggs), Pahsimeroi A-stock (345,164 eggs), and Oxbow A-stock (744,888 eggs) (Hagerman National Fish Hatchery 1995). Survival rates from eyed eggs to the fry stage for the Sawtooth A-, Pahsimeroi A-, and Oxbow A-stocks were 97.4% (548,010 fish), 96.2% (332,048 fish), and 95.2% (709,179 fish), respectively. A total of 101,812 Oxbow A-stock steelhead fingerlings were stocked into Lucky Peak Reservoir in November 1995. An additional 60,078 Oxbow A-stock steelhead were released into Salmon Falls and Oakley reservoirs in April 1996.

Adipose fins were excised from all fish in October 1995. In November 1995, 389,769 steelhead were tagged with coded-wire tags. Fish were tagged with coded-wire tags to estimate adult contribution to the fishery and to test the effects of acclimating smolts at Sawtooth Fish Hatchery. In March 1996, 1,804 steelhead were tagged with PIT tags to evaluate juvenile emigration. An additional 1,402 and 1,400 steelhead were tagged with PIT tags as part of volitional release experiments at Sawtooth and Pahsimeroi fish hatcheries, respectively.

Whereas other LSRCP steelhead hatcheries derive the number of smolts released by subtracting mortalities from the number of fish which were adipose fin clipped, Hagerman National Fish Hatchery personnel use the pound count method during shipping to determine the total number of fish released. Thus, final inventory numbers may differ from earlier inventory numbers. Hagerman National Fish Hatchery released 1,324,593 steelhead smolts into the Salmon and Little Salmon rivers between April 2 and May 16, 1996 (Appendix A. Table 2). The total release included 413,567 Sawtooth A-stock, 645,893 Pahsimeroi A-stock, and 265,133 Oxbow A-stock steelhead. Fish were released at four locations: Sawtooth Fish Hatchery weir (708,109), Torrey's Hole (66,022), Warm Springs Bridge (529,266), and Pahsimeroi Fish Hatchery (21,196). There were 381,063 fish released with coded-wire tags and 4,606 fish released with PIT tags. Hatchery personnel reported no major health problems for brood year 1995 steelhead.

Excluding the volitional release experiments at Sawtooth and Pahsimeroi fish hatcheries, interrogation rates for groups of PIT-tagged fish ranged from 50.0% to 68.7% (Table 1). Median travel times to Lower Granite Dam for groups of PIT-tagged fish ranged from 15.8 days to 27.0 days (Table 1).

Brood Year 1996-Hagerman National Fish Hatchery received a total of 1,403,878 eyed steelhead eggs in May and June 1996 comprised of two different stocks: Sawtooth A-stock (898,587 eggs) and Pahsimeroi A-stock (505,291 eggs) (Hagerman National Fish Hatchery 1997). Survival rates from the eyed egg stage to the fry stage for the Sawtooth A- and Pahsimeroi A-stocks were 96.6% and 93.9%, respectively.

Magic Valley Fish Hatchery

Brood Year 1995-Magic Valley Fish Hatchery received 2,345,200 eyed eggs comprised of three different stocks of steelhead: Dworshak B-stock (1,502,200 eggs), Pahsimeroi A-stock

(803,000 eggs), and East Fork B-stock (40,000 eggs) (Moore et al. In Press). Survival rates from the eyed egg stage to the fry stage for the Dworshak B-, Pahsimeroi A-, and East Fork B-stocks were 85.0% (1,276,927 fish), 96.0% (770,880 fish), and 95.9% (38,352 fish), respectively. Eyed egg-to-smolt survival for the Dworshak B-, Pahsimeroi A-, and East Fork B-stocks were 72.9%, 91.9%, and 84.7%, respectively.

In August and September 1995, all steelhead were marked with adipose fin clips, and 467,554 fish were tagged with coded-wire tags. Coded-wire tags were used to determine fishery contribution. No major health problems were reported for brood year 1995 by hatchery personnel.

Magic Valley Fish Hatchery released a total of 1,868,085 brood year 1995 steelhead at nine different locations between April 8 and May 4, 1996 (Appendix A. Table 3). The total release included 1,096,080 Dworshak B-stock, 738,133 Pahsimeroi A-stock, and 33,872 East Fork B-stock steelhead. A total of 467,554 fish were released with coded-wire tags. In addition, 2,409 steelhead were released with PIT tags (Appendix A. Table 3).

Interrogation rates for groups of PIT-tagged fish ranged from 30.0% to 65.7% (Table 1). Median travel times to Lower Granite Dam for groups of PIT-tagged fish ranged from 13.4 days to 27.8 days (Table 1).

Brood Year 1996-Magic Valley Fish Hatchery received 2,027,587 eyed steelhead eggs comprised of four different stocks: Dworshak B-stock (940,391 eggs), Pahsimeroi A-stock (852,000 eggs), East Fork B-stock (139,400 eggs), and Sawtooth A-stock (95,796 eggs) (Magic Valley Fish Hatchery 1998). Survival rates from the eyed egg stage to the fry stage were as follows: Dworshak B-stock—90.0%, Pahsimeroi A-stock—98.0%, East Fork B-stock—98.0%, and Sawtooth A-stock—99.0%. Overall survival rates (eyed egg-to-release) for Dworshak B-, Pahsimeroi A-, East Fork B-, and Sawtooth A-stocks were 70.3%, 89.8%, 94.1%, and 88.4%, respectively.

Sawtooth Fish Hatchery

Brood Year 1994-Sawtooth Fish Hatchery released 22,507 steelhead, Sawtooth A-stock, into the Salmon River between April 2 and May 16, 1996 (Appendix A. Table 4). Adipose fins were excised from all fish, and 400 were released with PIT tags (Table 1). These fish were the survivors of an experimental two-year rearing program that started with 130,000 eyed eggs. Fish were raised in a combination of well and river water environments. On July 1, 1995, 34,000 of the larger steelhead were removed from the population (by grading) and released into Mormon Reservoir. These fish were projected to exceed 225 mm in length by April 1996 (the release date). In February 1996, 61,840 steelhead, reared primarily on river water, exhibited clinical signs of whirling disease *Myxobolus cerebralis* and were destroyed. The remaining fish were included in the Sawtooth Volitional Release Experiment. Contact personnel at Sawtooth Fish Hatchery for additional information.

Migration Conditions

Snake River mean in-flows at Lower Granite Dam during the peak and extended periods in 1996 were 112.8 thousand cubic feet per second (kcfs) and 124.4 kcfs, respectively (Table 2). Flows recorded during these periods were the largest since 1984.

Comparing Snake River flow conditions for the three brood years of steelhead that returned to Idaho as adults during this reporting period (broods 1991, 1992, and 1993), the 1992 brood, which emigrated in 1993, had the largest river discharge during both the peak and extended migration periods (Table 2). The 1991 brood, which emigrated in 1992, had the lowest river discharge during both the peak and extended migration periods.

Migration Timing and Juvenile Survival

A total of 8,915 steelhead smolts were released with PIT tags in 1996: Clearwater Fish Hatchery—1,500, Hagerman National Fish Hatchery—4,606 (includes volitional release experiments at Sawtooth and Pahsimeroi fish hatcheries), Magic Valley Fish Hatchery—2,409, and Sawtooth Fish Hatchery—400 (Table 1). Overall, 55% (4,883) of the PIT-tagged fish were interrogated at downstream dams. Interrogation rates of PIT-tagged steelhead, by PIT tag file, ranged from 2.5% to 76.7% (Table 1). Those fish interrogated at 2.5% were age-2 smolts raised at Sawtooth Fish Hatchery and classified as nonmigrants in the volitional release experiment. Median travel times to Lower Granite Dam for PIT-tagged steelhead, by PIT tag file, ranged from 2.6 days to 27.8 days (Table 1). Most of the steelhead tagged with PIT tags were interrogated at Lower Granite Dam between April 20 and May 30 (Figure 1). Flow conditions for the Snake River at Lower Granite Dam during this time period ranged from approximately 75 kcfs to 200 kcfs.

Adult Returns

The Harvest Monitoring Project (Ball In Press) estimated that Hagerman National Fish Hatchery, Magic Valley Fish Hatchery, and Clearwater Fish Hatchery returned 8,168 steelhead to Idaho in 1995-1996 (Table 3). Ball (In Press) estimated that 5,771 steelhead were harvested in Idaho's sport fishery and 2,397 steelhead returned to hatchery racks or escaped to spawn naturally. These estimates do not include tributary and mainstem strays or prespawning mortalities. The 1995-1996 steelhead return included 1-ocean, 2-ocean, and 3-ocean fish. The number of steelhead smolts released and the estimated number of adults that returned are compared to facility design production targets and projected adult return goals in Table 4. Hagerman National Fish Hatchery, Magic Valley Fish Hatchery, and Clearwater Fish Hatchery achieved a minimum of 21% of their combined adult return goals (Table 4). Magic Valley Fish Hatchery returned fewer adult steelhead in 1996 than in the previous three years (Figure 2). Conversely, Hagerman National Fish Hatchery's 1996 adult return was the largest since 1993 (Figure 2). Adult return estimates include only steelhead that returned to hatchery weirs, steelhead that were harvested in Idaho's sport fishery, and steelhead that escaped to spawn naturally.

Fisheries Contribution

Ball (In Press) estimated that 5,771 LSRCP-reared hatchery steelhead were harvested during the 1995-1996 Idaho sport fishing season. See Ball (In Press) for creel survey methods and results.

Hatchery Weirs

Sawtooth Fish Hatchery Weir-Hatchery steelhead returning to Sawtooth Fish Hatchery in 1996 were A-strain fish released in 1993 and 1994 (brood years 1992 and 1993, respectively). Smolts were reared at Hagerman National Fish Hatchery prior to being trucked to Sawtooth Fish Hatchery and released.

A total of 553 adult steelhead (A-strain), comprised of 299 males (54.1%) and 254 females (45.9%), returned to the Sawtooth Fish Hatchery weir between March 20 and May 13, 1996 (Table 5) (Snider et al. 1996). The male component of the run was comprised of 297 hatchery-origin fish and 2 natural-origin (unmarked) fish; the female component was made up of 248 hatchery-origin fish and 6 natural-origin fish. All of the natural-origin fish and 46 of the hatchery-origin fish (30 males and 16 females) were released to spawn naturally. A total of 226 females and 228 males were spawned to yield 1,091,543 green eggs. A total of 982,600 eggs (90.0%) developed to the eyed stage. Disease samples collected during the spawning operations tested negative for IHN virus and bacteria.

East Fork Salmon River Weir-Hatchery steelhead returning to the East Fork Salmon River weir in 1996 were B-strain fish released in 1992, 1993, and 1994 (brood years 1991, 1992, and 1993, respectively). Smolts were reared at Hagerman National and Magic Valley fish hatcheries.

A total of 54 adult steelhead (B-strain), comprised of 32 males (59.3%) and 22 females (40.7%), returned to the East Fork Salmon River weir between March 22 and May 10, 1996 (Table 6) (Snider et al. 1996). The male component of the run was comprised of 28 (87.5%) hatchery-origin fish and 4 (12.5%) natural-origin (unmarked) fish; the female component was made up of 20 hatchery-origin fish (90.1%) and 2 natural-origin fish (9.9%). All of the natural-origin fish and one hatchery-origin fish (male) were released to spawn naturally. Adult steelhead captured at the Slate Creek weir were ponded with those captured at the East Fork Salmon River weir. Steelhead from the East Fork Salmon River (20 females and 27 males) and Slate Creek (15 females and 7 males) weirs were spawned to yield a total of 161,632 green eggs. A total of 143,670 (88.9%) developed to the eyed stage.

Slate Creek Weir-Hatchery steelhead returning to the Slate Creek weir in 1996 were B-strain fish released in 1993 and 1994 (brood years 1992 and 1993, respectively). Smolts were reared at Magic Valley Fish Hatchery prior to being trucked to Slate Creek and released.

A total of 38 adult steelhead (B-strain), comprised of 15 males (39.5%) and 23 females (60.5%), returned to the Slate Creek weir between March 26 and April 25, 1996 (Table 7) (Snider et al. 1996). The male component of the run was comprised of 14 (93.3%) hatchery-origin fish and 1 (6.7%) natural-origin (unmarked) fish; the female component was made up of all hatchery-origin fish. All of the natural-origin fish and 15 of the hatchery-origin fish (7 males and 8 females) were released to spawn naturally. Adult steelhead captured at the Slate Creek weir were ponded with those captured at the East Fork Salmon River weir. Steelhead from the East Fork Salmon River (20 females and 27 males) and Slate Creek (15 females and 7 males) weirs were spawned to yield a total of 161,632 green eggs. A total of 143,670 (88.9%) developed to the eyed stage.

Crooked River Weir-Hatchery steelhead returning to the Crooked River weir in 1996 were B-strain fish released in 1994 (brood year 1993). Smolts were reared at Clearwater Fish Hatchery prior to being trucked to Crooked River and released.

A total of three adult steelhead (B-strain), all males, returned to the Crooked River weir between March 13 and June 4, 1996 (Table 8) (George 1996). The run was comprised of one hatchery-origin fish and two natural-origin fish. All of the natural-origin fish were released to spawn naturally. The hatchery fish was transported to the Red River satellite facility and died before it was spawned.

Smolt-to-Adult Return Rates

Clearwater Fish Hatchery

In 1993, Clearwater Fish Hatchery released 326,300 steelhead smolts (brood year 1992) (Appendix B. Table 1). An estimated two adults returned from the smolts released in 1993 (Table 3). This equals <1% of the hatchery's adult return goal (14,000 fish). The adult return goal of 14,000 steelhead for Clearwater Fish Hatchery is based on a smolt production target of 2,800,000 smolts at a size of 8 fish/lb. However, the number of steelhead released from Clearwater Fish Hatchery has never exceeded 850,000. Steelhead production was reduced in the Clearwater River basin in lieu of increased production in the Salmon River basin.

Brood year 1992 steelhead smolts were not released at a weir that would be used to collect returning adults. Therefore, the number of returning adults had to be estimated from the sport fishery harvest of coded-wire-tagged fish. However, in the fall of 1995, when the 2-ocean component for this brood year returned, the sport fishing season was closed to harvest due to an expected low return. Thus, no adult steelhead tagged with coded-wire tags were collected in the fall of 1995. Furthermore, the Clearwater River basin experienced a major flood event during the spring of 1996, which essentially washed out the 1996 sport fishing season. Therefore, CWT data for the 2-ocean component of brood year 1992 are missing. In addition, steelhead smolts from the 1992 brood were exposed to supersaturated water while being shipped to off-site release sites (Rhine et al. 1999[a]). The water supply line used to fill the transport trucks was not equipped with a degassing station, and the smolts were transported in water that was supersaturated with dissolved nitrogen. This problem was not discovered until affected smolts, which showed signs of gas bubble disease, were captured at downstream locations.

Brood year 1993 steelhead would have returned as 1-ocean fish during this reporting period. However, the Harvest Monitoring Project reported that none of the steelhead that returned to Idaho in 1995-1996 were reared at Clearwater Fish Hatchery.

Hagerman National Fish Hatchery

The 1995-1996 steelhead return included three age classes of fish which were released from Hagerman National Fish Hatchery in 1992 (brood year 1991), 1993 (brood year 1992), and 1994 (brood year 1993). Brood year 1991, 1992, and 1993 steelhead returned as 3-ocean, 2-ocean, and 1-ocean fish, respectively. The Harvest Monitoring Project estimated that 4,732 of the steelhead that returned to Idaho in 1995-1996 were reared at Hagerman National Fish

Hatchery (Table 3). This equals 34.8% of the hatchery's adult return goal (13,600 fish). The adult return goal for Hagerman National Fish Hatchery was calculated based on the release of 2,400,000 smolts. However, smolt production for brood years 1991, 1992, and 1993 was only about 60% of the production target (Table 4).

A total of 1,448,155 steelhead were released in 1992 (brood year 1991). An estimated 1,900 adults returned from the smolts released in 1992 to yield a SAR of 0.13% (Appendix C. Table 1). In 1993, 1,487,842 steelhead smolts (brood year 1992) were released. The 2-ocean adult component for this brood returned in 1996. An estimated 4,562 of the steelhead released in 1993 returned to Idaho to yield a SAR of 0.31% (Appendix C. Table 2). In 1994, Hagerman National Fish Hatchery released 1,519,168 steelhead smolts (brood year 1993). Adult return data, specifically the 2-ocean component, for brood year 1993 are incomplete at this time (Appendix C. Table 3).

The final adult steelhead from the 1991 (B-strain) and 1992 (A-strain) broods returned to Idaho during this reporting period. Smolt-to-adult return rates were calculated for coded-wire-tagged smolts by stock and release site (Table 9). Sawtooth A-stock steelhead smolts (brood year 1992) released at Hammer Creek and Hazard Creek had SARs of 0.05% and 0.16%, respectively. Acclimated and nonacclimated Pahsimeroi A-stock steelhead smolts, (brood year 1992), released at the Sawtooth Fish Hatchery weir had SARs of 0.33% and 0.17%, respectively.

Magic Valley Fish Hatchery

The 1995-1996 steelhead return included three age classes of fish which were released from Magic Valley Fish Hatchery in 1992 (brood year 1991), 1993 (brood year 1992), and 1994 (brood year 1993). Brood year 1991, 1992, and 1993 steelhead returned as 3-ocean, 2-ocean, and 1-ocean fish, respectively. The Harvest Monitoring Project estimated that 3,434 of the adult steelhead that returned to Idaho in 1995-1996 were reared at Magic Valley Fish Hatchery (Table 3). This equals 29.5% of the hatchery's adult return goal (11,660 fish).

A total of 2,160,400 steelhead smolts were released in 1992 (brood year 1991) from Magic Valley Fish Hatchery. An estimated 2,354 of these smolts returned to Idaho as adults (Appendix D. Table 1). The SAR for brood year 1991 was 0.11%. A total of 1,925,700 steelhead smolts were released from Magic Valley Fish Hatchery in 1993 (brood year 1992). An estimated 3,014 of these smolts returned to Idaho as adults (Appendix D. Table 2). The 3-ocean adult component of brood year 1992 is not complete. To date, the SAR for brood year 1992 is 0.16%. In 1994, Magic Valley Fish Hatchery released 1,919,250 steelhead smolts (brood year 1993). Adult return data, specifically the 2- and 3-ocean components, for brood year 1993 are incomplete at this time (Appendix D. Table 3).

The final adult steelhead from the 1991 (B-strain) and 1992 (A-strain) broods returned to Idaho during this reporting period. Smolt-to-adult return rates were calculated for coded-wire-tagged smolts by stock and release site (Table 9). Smolt-to-adult return rates for East Fork B- and Dworshak B-stock steelhead smolts, (brood year 1991), released into the East Fork Salmon River were 0.13% and 0.01%, respectively. Smolt-to-adult return rates for Pahsimeroi A-stock steelhead smolts, (brood year 1992), released at Challis, Ellis Bridge, North Fork Salmon River, and the Lemhi River were 0.30%, 0.29%, 0.28%, and 0.21%, respectively.

Experimentation—Objective 2

Clearwater Fish Hatchery

Cover Experiment-See Rhine et al. (1999[a]) for juvenile PIT tag interrogation results. Adults from the 1992 brood returned as 2-ocean fish during this reporting period. Three, 2-ocean adult steelhead from the Cover Group were collected at Dworshak National Fish Hatchery. No 2-ocean steelhead were recovered from the No Cover Group. The low number of fish recovered for this brood may be attributed to exposure of smolts to supersaturated water (Rhine et al. 1999[a]) and/or due to the release location. Smolts were not released at a weir where adults could be collected. See *Results, Smolt-to-Adult Return Rates, Clearwater Fish Hatchery* for details. Adults from the 1992 brood will return as 3-ocean fish in 1997.

Hagerman National Fish Hatchery

Acclimation Experiment-A total of 154 (51.2%) of the PIT-tagged acclimated steelhead (File TDR96073.H55) were interrogated at downstream dams as compared to 159 (52.8%) of the tagged nonacclimated fish (File TDR96073.H61) (Table 1). No significant differences (χ^2 = 0.80, P = 0.370) were detected between interrogation rates of acclimated and nonacclimated steelhead. Median travel times to Lower Granite Dam were 21.1 days for the acclimated group and 16.6 days for the nonacclimated group (Table 1). Nonacclimated steelhead had significantly (P = 0.005) shorter travel times to Lower Granite Dam than acclimated fish.

A total of 30, 1-ocean (brood year 1993), adult steelhead returned to Idaho during this reporting period (Table 10). Of those, 17 were from the acclimated group, and 13 were from the nonacclimated group. For 1-ocean adults that returned from the acclimated group, 35% (6) were females and 65% (11) were males. Adult returns from the nonacclimated group were composed of 23% (3) females and 77% (10) males.

A total of 47, 2-ocean (brood year 1992), adult steelhead returned to Idaho during this reporting period (Table 10). Of these, 33 were from the acclimated group, and 14 were from the nonacclimated group. For 2-ocean adults that returned from the acclimated group, 70% (23) were females and 30% (10) were males. Adult returns from the nonacclimated group were composed of 71% (10) females and 29% (4) males. Complete results of this study will be reported under a separate title.

Sawtooth Fish Hatchery

Volitional Release Experiment-Sawtooth Fish Hatchery released 85,025 brood year 1995 (Appendix A. Table 2) and 22,507 brood year 1994 (Appendix A. Table 4) steelhead (Sawtooth A-stock) into the Salmon River between April 2 and May 16, 1996.

A total of 1,402 brood year 1995 steelhead were released with PIT tags. Interrogation rates for groups of PIT-tagged fish ranged from 29.5% to 54.7% (Table 1). Median travel times to Lower Granite Dam ranged from 11.4 days to 15.6 days (Table 1). Fish in the migrant group were interrogated at a significantly higher rate as compared to fish in the nonmigrant and control groups (P <0.001, P = 0.0165, respectively). The interrogation rate of PIT-tagged fish in the nonmigrant group was not significantly different than the interrogation rate of fish in the control

group (P = 0.1106). Travel time to Lower Granite Dam was not significantly different among steelhead in the migrant, nonmigrant, and control groups (P >0.05). Complete results for the 1995 brood are reported in Rhine et al. (In Press[a]). Notable results for the 1994 brood are reported below. Methods for the 1994 brood were similar to that reported for the 1995 brood and can be found in Rhine et al. (In Press[a]).

A total of 400 brood year 1994 steelhead were released with PIT tags. Interrogation rates for groups of PIT-tagged fish ranged from 2.5% to 39.5% (Table 1). Median travel times to Lower Granite Dam ranged from 7.9 days to 17.4 days (Table 1). Fish in the migrant group were interrogated at a significantly higher rate than fish in the nonmigrant groups (P <0.001, χ^2 = 107.79). Travel time to Lower Granite Dam was not significantly different between groups (P >0.109).

Steelhead classified as smolt or transitionals had significantly (P<0.001, χ^2 = 52.8; P<0.001, χ^2 = 38.2, respectively) higher interrogation rates than fish classified as parr. Interrogation rates of smolts and transitionals were not significantly different (P = 0.06, χ^2 = 3.5).

A total of 111 of the PIT-tagged steelhead were precocious (based on visual observations and the presence of milt) at the time of tagging. Most (106 of 111) of the precocial fish were parr; five were transitionals. Only one PIT-tagged precocial fish, classified as a parr, was interrogated at a downstream dam.

Approximately 73% of the brood year 1994 steelhead stocked into raceway 2A emigrated to raceway 2B by the end of the study (May 13). More females emigrated than males. On May 13, there were significantly (P = 0.033, χ^2 = 4.55) more males in raceway 2A than there were at the start of the study (March 28). On May 13, migrants were significantly longer (P = 0.0001) and heavier (P = 0.001) than nonmigrants, however nonmigrants had significantly (P = 0.0001) higher mean condition factor.

A total of 725 brood year 1994 steelhead were sacrificed during the experiment. Fifty-three percent (385) of the fish sampled were males. Fifty-two percent (200) of the males were precocious. A total of 340 females were sacrificed; none were precocious. Precocial males were significantly longer (P = 0.0001), heavier (P = 0.0001), and had higher mean condition factor (P = 0.0001) than nonprecocial males. Most (192 of 200) of the precocial males were parr; seven were transitionals, and only one was classified as a smolt.

The brood year 1994 steelhead used in this experiment were part of a two-year rearing study at Sawtooth Fish Hatchery that was discontinued due to a high incidence of whirling disease in one group of fish. The steelhead used in this study were not infected with whirling disease, but they were graded (to remove the larger fish) prior to this study. The high incidence of precocity (52% of males) observed in this population may be due to the fish grading, the two-year rearing program, or a combination of the two factors.

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Table 1. Number of unique interrogations of PIT-tagged steelhead smolts, by PIT tag file, at Lower Granite Dam (GRJ), Little Goose Dam (GOJ), Lower Monumental Dam (LMJ), and McNary Dam (MCJ) for the 1996 migration period. A total of 8,915 PIT-tagged steelhead were released from Hagerman National, Magic Valley, and Clearwater fish hatcheries between April 2 and May 16, 1996. Steelhead released from Sawtooth and Pahsimeroi fish hatcheries were originally reared at Hagerman National Fish Hatchery. Median travel time is to Lower Granite Dam.

				Number/Percent Interrogated										Median Travel Time
				GRJ		GOJ		LMJ		MCJ		TOTAL		
File Name	Release Site	Rel. Date	No. Rel.	No.	%	No.	%	No.	%	No.	%	No.	%	(Days)
Magic Valley Steelhead Hatchery														
Salmon R. Release														
Pahsimeroi A-Stock:														
TDR96078.14E	Lemhi R.	4/22	299	127	42.5	35	11.7	27	9.0	3	1.0	192	64.2	13.8
TDR96079.12W	N.F. Salmon R.	4/16	300	130	43.3	35	11.7	28	9.3	4	1.3	197	65.7	21.7
TDR96079.16W	Bruno	4/18	300	65	21.7	15	5.0	9	3.0	1	0.3	90	30.0	27.8
TDR96079.14W	McNabb Point	4/17	300	110	36.7	32	10.7	14	4.7	3	1.0	159	53.0	21.3
Total			**1,199**									**638**	**53.2**	
Dworshak B-Stock:														
TDR96078.04E	Slate Cr.	4/27	306	112	36.6	29	9.5	19	6.2	2	0.7	162	52.9	17.5
TDR96078.10E	E.F. Salmon R.	4/24	300	107	35.7	30	10.0	21	7.0	4	1.3	162	54.0	17.6
TDR96079.07W	Hazard Cr.	4/11	304	119	39.1	40	13.2	29	9.5	2	0.7	190	62.5	18.2
Total			**910**									**514**	**56.5**	
East Fork B-Stock:														
TDR96078.11E	E.F. Salmon R.	4/24	300	83	27.7	33	11.0	28	9.3	2	0.7	146	48.7	13.4
Magic Valley Fish Hatchery Grand Total			**2,409**									**1,298**	**53.9**	
Hagerman National Fish Hatchery														
Pahsimeroi A-Stock:														
TDR96074.H77	Little Salmon R.	4/10	300	125	41.7	35	11.7	30	10.0	6	2.0	196	65.3	16.7
TDR96074.H74	Sawtooth Weir	4/19	302	119	39.4	38	12.6	21	7.0	3	1.0	181	59.9	15.8
Total			**602**									**377**	**62.6**	

Table 1. Continued.

File Name	Release Site	Rel. Date	No. Rel.	Number/Percent Interrogated GRJ No.	GRJ %	GOJ No.	GOJ %	LMJ No.	LMJ %	MCJ No.	MCJ %	TOTAL No.	TOTAL %	Median Travel Time (Days)
Oxbow A-Stock:														
TDR96074.H80	Little Salmon R.	4/12	300	134	44.7	44	14.7	26	8.7	2	0.7	206	68.7	20.0
Sawtooth A-Stock:														
Sawtooth Weir Release														
TDR96073.H55	Sawtooth Weir	4/19	301	104	34.6	26	8.6	21	7.0	3	1.0	154	51.2	21.1
TDR96073.H61	Sawtooth Weir	4/16	301	101	33.6	29	9.6	26	8.6	3	1.0	159	52.8	16.6
Total			**602**									**313**	**52.0**	
TDR96073.H58	Sal. R.-Torrey's	4/19	300	82	27.3	38	12.7	28	9.3	2	0.7	150	50.0	27.0
Hagerman National Fish Hatchery Grand Total			**1,804**									**1,046**	**58.0**	
Clearwater Fish Hatchery														
Dworshak B-Stock:														
Clear Cr. Release														
DAC96071.10W	Clear Cr.	4/24	150	93	62.0	10	6.7	10	6.7	2	1.3	115	76.7	2.6
DAC96071.W10	Clear Cr.	4/24	150	77	51.3	13	8.7	8	5.3	3	2.0	101	67.3	2.7
Brood Year 1994 (2-year rearing)														
DAC96072.C33	Clear Cr.	4/18	300	83	27.7	58	19.3	20	6.7	5	1.7	166	55.3	4.4
Total			**600**									**382**	**63.7**	
South Fork Clearwater R. Release														
DAC96072.C12	Red House	4/17	150	49	32.7	33	22.0	13	8.7	5	3.3	100	66.7	7.3
DAC96072.C22	Red House	4/17	150	65	43.3	28	18.7	19	12.7	2	1.3	114	76.0	7.2
DAC96071.9W	Stites	4/18	150	56	37.3	25	16.7	10	6.7	2	1.3	93	62.0	6.3
DAC96071.9WC	Stites	4/18	150	50	33.3	23	15.3	23	15.3	2	1.3	98	65.3	6.2
DAC96072.C11	Cottonwood Cr.	4/18	150	58	38.7	26	17.3	16	10.7	5	3.3	105	70.0	6.0
DAC96072.C21	Cottonwood Cr.	4/18	150	61	40.7	37	24.7	11	7.3	1	0.7	110	73.3	5.3
Total			**900**									**620**	**68.9**	
Clearwater Fish Hatchery Grand Total			**1,500**									**1,002**	**66.8**	

Table 1. Continued.

File Name	Release Site	Rel. Date	No. Rel.	Number/Percent Interrogated GRJ No.	GRJ %	GOJ No.	GOJ %	LMJ No.	LMJ %	MCJ No.	MCJ %	TOTAL No.	TOTAL %	Median Travel Time (Days)
Sawtooth Fish Hatchery Volitional Release Experiment														
Sawtooth A-Stock: Brood year 1995 (Age 1 smolts), Reared at Hagerman National Fish Hatchery														
TDR96***.S03[a]	Sawtooth Weir	4/2-5/9	201	62	30.8	26	12.9	12	6.0	2	1.0	102	50.8	14.1
TDR96***.S04[a]	Sawtooth Weir	4/2-5/9	201	68	33.8	23	11.4	18	9.0	1	0.5	110	54.7	15.6
TDR96135.S1U	Sawtooth Weir	5/16	200	50	25.0	20	10.0	10	5.0	1	0.5	81	40.5	11.4
TDR96135.S3U	Sawtooth Weir	5/16	200	41	20.5	10	5.0	8	4.0	0	0.0	59	29.5	14.4
TDR96135.S3L	Sawtooth Weir	5/16	200	64	32.0	19	9.5	15	7.5	0	0.0	98	49.0	14.4
TDR96135.S4U	Sawtooth Weir	5/16	200	44	22.0	20	10.0	13	6.5	0	0.0	77	38.5	14.8
TDR96135.S4L	Sawtooth Weir	5/16	200	54	27.0	29	14.5	23	11.5	1	0.5	107	53.5	12.8
Sawtooth A-Stock: Brood year 1994 (Age 2 smolts), Reared at Sawtooth Fish Hatchery														
TDR96135.S2U	Sawtooth Weir	5/16	200	3	1.5	0	0.0	1	0.5	1	0.5	5	2.5	17.4
TDR96135.S2L	Sawtooth Weir	5/16	200	37	18.5	22	11.0	19	9.5	1	0.5	79	39.5	7.9
Total			**1,802**									**718**	**39.8**	
Pahsimeroi Fish Hatchery Volitional Release Experiment														
Pahsimeroi A-Stock: Brood year 1995 (Age 1 smolts), Reared at Hagerman National Fish Hatchery														
TDR96***.P01[a]	Pahsimeroi Weir	5/09	201	81	40.3	29	14.4	17	8.5	2	1.0	129	64.2	10.9
TDR96***.P02[a]	Pahsimeroi Weir	5/09	199	73	36.7	15	7.5	20	10.1	3	1.5	111	55.8	10.8
TDR96135.R1U	Pahsimeroi Weir	5/16	200	49	24.5	31	15.5	16	8.0	2	1.0	98	49.0	7.4
TDR96134.R1L	Pahsimeroi Weir	5/16	200	57	28.5	34	17.0	25	12.5	4	2.0	120	60.0	11.4
TDR96136.R2U	Pahsimeroi Weir	5/16	200	52	26.0	41	20.5	30	15.0	2	1.0	125	62.5	7.4
TDR96135.R2L	Pahsimeroi Weir	5/16	200	62	31.0	33	16.5	25	12.5	0	0.0	120	60.0	10.8
TDR96133.PRC	Pahsimeroi Weir	5/16	200	49	24.5	43	21.5	24	12.0	0	0.0	116	58.0	6.9
Total			**1,400**									**819**	**58.5**	

[a] Weekly release groups which are composed of multiple PIT tag files

Table 2. Snake River mean daily in-flow (thousand cubic feet per second) at Lower Granite Dam, Washington, from 1977-1996 during the peak and extended chinook salmon smolt migration periods as defined by Petrosky (1991).

Year	Peak (04/15—05/05)	Extended (04/20—05/30)
1977	39.1	40.2
1978	85.4	95.8
1979	64.8	89.9
1980	87.5	102.9
1981	76.2	86.7
1982	116.8	131.6
1983	85.6	111.3
1984	121.9	146.1
1985	86.9	87.2
1986	93.4	105.7
1987	59.0	62.4
1988	55.1	64.2
1989	93.6	87.2
1990	63.8	66.4
1991	44.0	70.5
1992	54.2	57.3
1993	69.8	114.0
1994	64.1	77.5
1995	72.9	74.1
1996	112.8	124.4

Table 3. Estimated number of LSRCP steelhead that returned to Idaho in 1995-1996. The adult return in 1995-1996 included fish from three age classes. Steelhead were reared at Hagerman National, Magic Valley, and Clearwater fish hatcheries. These estimates were prepared by the Idaho Department of Fish and Game's Harvest Monitoring Project and only include steelhead harvested in Idaho's sport fisheries, steelhead that returned to hatchery racks, and fish that escaped to spawn naturally. These are minimum estimates and do not include all tributary and mainstem strays or in-river prespawning mortalities.

HATCHERY	BROOD YEAR	3-OCEAN	2-OCEAN	1-OCEAN
Hagerman	1991	0	---	---
Hagerman	1992	---	1,869	---
Hagerman	1993	---	---	2,863
Estimated Fish Returning in 1995-1996			4,732	
Magic Valley	1991	0	---	---
Magic Valley	1992	---	1,379	---
Magic Valley	1993	---	---	2,055
Estimated Fish Returning in 1995-1996			3,434	
Clearwater	1992	---	2	---
Clearwater	1993	---	---	0
Estimated Fish Returning in 1995-1996			2	
GRAND TOTAL			**8,168**	

Table 4. Steelhead smolts released from Magic Valley, Hagerman National, and Clearwater fish hatcheries that contributed to the 1995-1996 Idaho steelhead return. The number of steelhead smolts released and the estimated number of adults that returned were compared to facility design production targets and projected adult return goals.

Releases Contributing to 1995-1996 Adult Returns					
Brood Year	**Fish Hatchery**	**Number Released**	**Design Target**	**Percent of Target**	**1995-96 Adult Returns**
1991	Magic Valley	2,160,400	2,000,000	108%	0
1991	Hagerman National	1,448,155	2,400,000	60%	0
	Total	**3,608,555**	**4,400,000**	**82%**	**0**
1992	Magic Valley	1,925,700	2,000,000	96%	1,379
1992	Hagerman National	1,487,842	2,400,000	62%	1,869
1992	Clearwater	637,743	1,750,000	36%	2
	Total	**4,051,285**	**6,150,000**	**66%**	**3,250**
1993	Magic Valley	1,919,250	2,000,000	96%	2,055
1993	Hagerman National	1,519,168	2,400,000	63%	2,863
1993	Clearwater	722,941	1,750,000	41%	0
	Total	**4,161,359**	**6,150,000**	**68%**	**4,918**
	Mean annual release as percent of target:			72%	
			Total adult return:[a]		8,168
			Adult return goal:		39,260
			Percent of goal achieved:		21%

[a] Estimate includes only steelhead harvested in Idaho's sport fisheries, steelhead that returned to hatchery racks, and off-site escapement. These are minimum estimates and do not include all tributary and mainstem strays or in-river prespawning mortalities.

Table 5. Summary of the 1996 A-strain steelhead return to the Sawtooth Fish Hatchery weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age[a]. ND indicates "No Data" (i.e., data were not available).

HATCHERY ORIGIN n = 545										
	Males n = 297					Females n = 248				
Age[b]	Trapped	Released	Spawned	Morts	Other	Trapped	Released	Spawned	Morts	Other
1-ocean	ND	ND	ND	0	ND	ND	ND	ND	0	ND
2-ocean	ND	ND	ND	0	ND	ND	ND	ND	0	ND
Total	297	30[c]	228	0	39[d]	248	16[c]	226	0	6[d]

NATURAL ORIGIN n = 8										
	Males n = 2					Females n = 6				
Age[b]	Trapped	Released	Spawned	Morts	Other	Trapped	Released	Spawned	Morts	Other
1-ocean	ND	ND	0	0	0	ND	ND	0	0	0
2-ocean	ND	ND	0	0	0	ND	ND	0	0	0
Total	2	2[e]	0	0	0	6	6[e]	0	0	0

Total number trapped	553	Green egg number	1,091,543	
Trapping period	3/20 - 5/13/96	Eyed egg number	982,600[f]	(90.0% eye - up)

[a] Fish were aged using the following aging criteria:

RUN	SEX	LENGTH	AGE (Years in Ocean)
A	male	≤68 cm	1-ocean
A	male	>68 cm	2-ocean
A	female	≤65 cm	1-ocean
A	female	>65 cm	2-ocean

[b] Hatchery fish classified as 1-ocean were released in 1994, brood year 1993. Hatchery fish classified as 2-ocean were released in 1993, brood year 1992.

[c] Thirteen fish (10 male and 3 female) were released above the weir. Thirty-three fish (20 male and 13 female) were released into a weired-off section of Beaver Cr. for a natural-spawning study conducted by Alan Byrne.

[d] Fish were killed, but the eggs and milt were not used.

[e] Fish were released above the weir.

[f] Eyed-eggs or fry were shipped to other hatcheries for rearing.

Table 6. Summary of the 1996 B-strain steelhead return to the East Fork Salmon River weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age[a]. ND indicates "No Data" (i.e., data were not available).

HATCHERY ORIGIN n = 48										
	Males n = 28					Females n = 20				
Age[b]	Trapped	Released	Spawned	Morts	Other	Trapped	Released	Spawned	Morts	Other
1-ocean	ND	1	ND	0	0	ND	0	ND	0	ND
2-, 3-ocean	ND	0	0	0	0	ND	0	0	0	0
Total	28	1[c]	27	0	0	20	0	20	0	0

NATURAL ORIGIN n = 6										
	Males n = 4					Females n = 2				
Age[b]	Trapped	Released	Spawned	Morts	Other	Trapped	Released	Spawned	Morts	Other
1-ocean	ND	4	0	0	0	ND	2	0	0	0
2-, 3-ocean	ND	0	0	0	0	ND	0	0	0	0
Total	4	4[c]	0	0	0	2	2[c]	0	0	0

Total number trapped	54	Green egg number	161,632[d]	
Trapping period	3/22 - 5/10/96	Eyed egg number	143,670[d]	(88.9% eye - up)

[a] Fish were aged using the following aging criteria:

RUN	SEX	LENGTH	AGE (Years in Ocean)
B	male	≤73 cm	1-ocean
B	male	>73 cm	2- or 3-ocean
B	female	≤68 cm	1-ocean
B	female	>68 cm	2- or 3-ocean

[b] Hatchery fish classified as 1-ocean were released in 1994, brood year 1993. Hatchery fish classified as 2- or 3-ocean were released in 1993 and 1992, respectively, (brood years 1992 and 1991, respectively).

[c] Fish were released above the weir.

[d] Eggs collected from fish that returned to both the East Fork and Slate Creek weirs.

Table 7. Summary of the 1996 B-strain steelhead return to the Slate Creek weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age[a]. ND indicates "No Data" (i.e., data were not available).

HATCHERY ORIGIN n = 37										
	Males n = 14					Females n = 23				
Age[b]	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**
1-ocean	ND	ND	ND	0	0	ND	ND	ND	0	ND
2-, 3-ocean	ND	ND	ND	0	0	ND	ND	ND	0	0
Total	14	7[c]	7[d]	0	0	23	8[c]	15[d]	0	0

NATURAL ORIGIN n = 1										
	Males n = 1					Females n = 0				
Age[b]	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**
1-ocean	ND	ND	0	0	0	0	0	0	0	0
2-, 3-ocean	ND	ND	0	0	0	0	0	0	0	0
Total	1	1[e]	0	0	0	0	0	0	0	0

Total number trapped	38	Green egg number	161,632[e]	
Trapping period	3/26 – 4/25/96	Eyed egg number	143,670[e]	(88.9% eye - up)

[a] Fish were aged using the following aging criteria:

RUN	SEX	LENGTH	AGE (Years in Ocean)
B	male	≤73 cm	1-ocean
B	male	>73 cm	2- or 3-ocean
B	female	≤68 cm	1-ocean
B	female	>68 cm	2- or 3-ocean

[b] Hatchery fish classified as 1-ocean were released in 1994, brood year 1993. Hatchery fish classified as 2- or 3-ocean were released in 1993 and 1992, respectively, (brood years 1992 and 1991, respectively).

[c] Fish were released above the weir. All hatchery fish released were A-run; no B-run fish were released.

[d] All hatchery fish spawned were B-run.

[e] Eggs collected from fish that returned to both the East Fork and Slate Creek weirs.

Table 8. Summary of the 1996 B-strain steelhead return to the Crooked River weir. The fish return included fish of hatchery and natural origin. Hatchery aging criteria, based on length, were used to determine age[a].

HATCHERY ORIGIN n = 1

	Males n = 1					Females n = 0				
Age[b]	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**
1-ocean	0	0	0	0	0	0	0	0	0	0
2-, 3-ocean	1	0	0	1	0	0	0	0	0	0
Total	1	0	0	1[c]	0	0	0	0	0	0

NATURAL ORIGIN n = 2

	Males n = 2					Females n = 0				
Age[b]	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**	**Trapped**	**Released**	**Spawned**	**Morts**	**Other**
1-ocean	1	1	0	0	0	0	0	0	0	0
2-, 3-ocean	1	1	0	0	0	0	0	0	0	0
Total	2	2[d]	0	0	0	0	0	0	0	0

Total number trapped	3
Trapping period	3/13 – 6/4/96

[a] Fish were aged using the following aging criteria:

RUN	SEX	LENGTH	AGE (Years in Ocean)
B	male	≤76 cm	1-ocean
B	male	>76 cm	2- or 3-ocean
B	female	≤76 cm	1-ocean
B	female	>76 cm	2- or 3-ocean

[b] Hatchery fish classified as 1-ocean were released in 1994, brood year 1993. Hatchery fish classified as 2- or 3-ocean were released in 1993 and 1992, respectively, (brood years 1992 and 1991, respectively).

[c] The fish was shipped to Red River for future spawning but was killed when a wall of debris and sand came down and filled the adult holding pond at Red River.

[d] The fish were released upstream to spawn naturally.

Table 9. Smolt-to-adult return rates of coded-wire-tagged steelhead smolts released from Hagerman National and Magic Valley fish hatcheries. The number of adults was estimated by Ball (In Press) and only include steelhead harvested in Idaho=s sport fisheries, steelhead that returned to hatchery racks, and fish that escaped to spawn naturally. These are minimum estimates and do not include all tributary and mainstem strays or in-river prespawning mortalities.

Hatchery	Stock	Brood	Release Site	Number CWT	Number Adults	SAR (%)
Hagerman	DWOR B	1991	Warm Springs	55,226	0	0.00
Hagerman	PAH A	1992	Sawtooth Weir (Acclimated)	65,384	218	0.33
Hagerman	PAH A	1992	Sawtooth Weir (Nonacclimated)	59,745	103	0.17
Hagerman	SAW A	1992	Hammer Creek	53,459	28	0.05
Hagerman	SAW A	1992	Hazard Creek	49,911	78	0.16
Magic	E.F. B	1991	E.F. Salmon R.	20,821	27	0.13
Magic	DWOR B	1991	E.F. Salmon R.	43,339	6	0.01
Magic	PAH A	1992	Lemhi River	63,188	131	0.21
Magic	PAH A	1992	N.F. Salmon R.	65,637	181	0.28
Magic	PAH A	1992	Ellis Bridge	40,139	118	0.29
Magic	PAH A	1992	Challis	19,924	59	0.30

Table 10. Total number[a] of steelhead recovered with coded-wire tags designating them as either acclimated (ACC) or nonacclimated (NON-ACC). Recovered fish were released as smolts at the Sawtooth Fish Hatchery weir in 1993 (brood year 1992) and 1994 (brood year 1993). ND indicates "No Data" (i.e., data were not available).

			Return Composition				
			1-ocean		2-ocean		
Exp. Group	**Brood Year**	**Number CWT**	**Male**	**Female**	**Male**	**Female**	**Total Return**
ACC	1992	65,865	32	15	10	23	80
NON-ACC	1992	59,846	23	9	4	10	46
ACC	1993	60,695	11	6	ND	ND	17[b]
NON-ACC	1993	61,321	10	3	ND	ND	13[b]

[a] Includes all Idaho fishery harvest returns, Idaho hatchery returns, and tributary stray recoveries
[b] Includes 1-ocean (brood year 1993) returns only

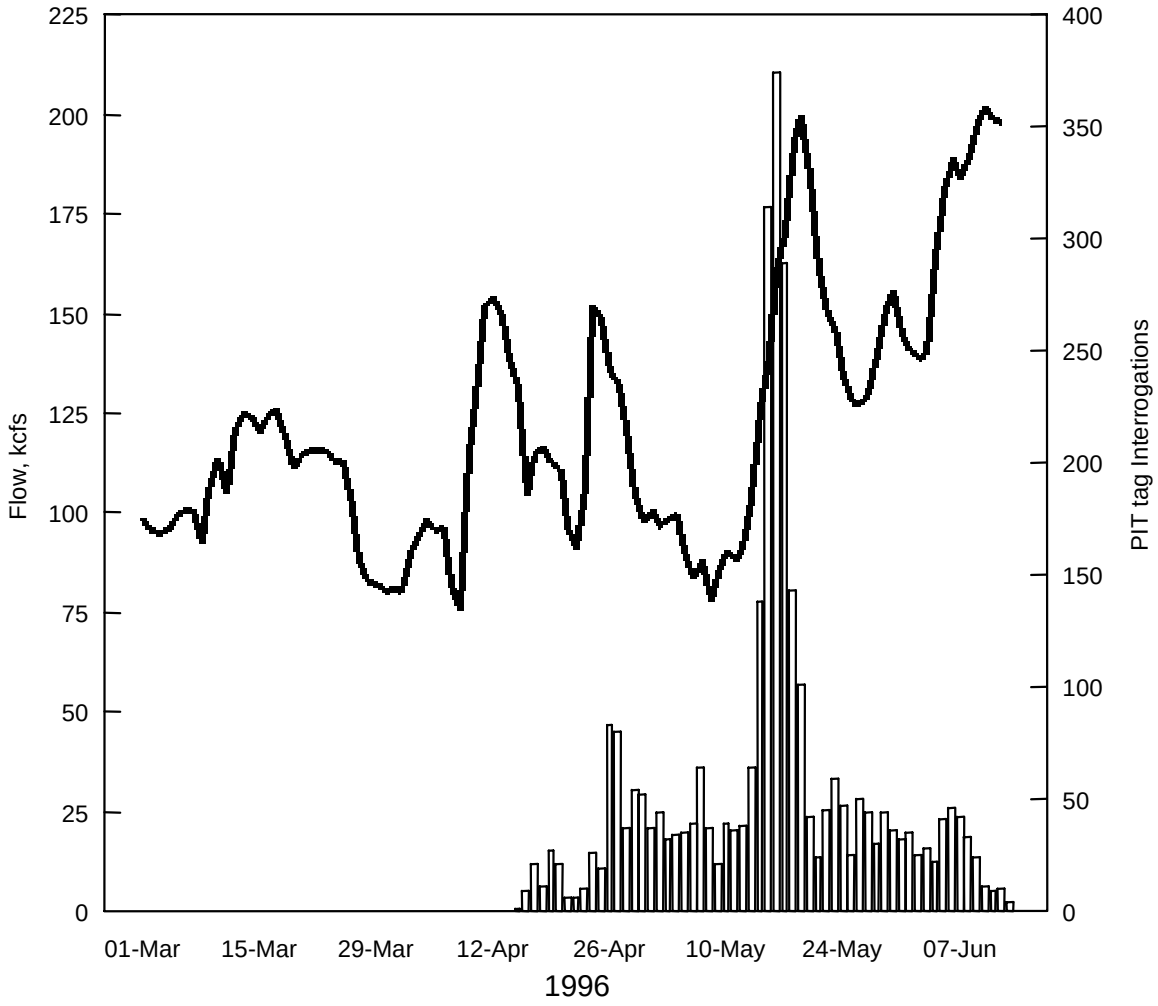

Figure 1. Number of unique PIT tag interrogations of LSRCP juvenile steelhead at Lower Granite Dam, Washington, plotted with the average daily in-flow of the Snake River at Lower Granite Dam in 1996. A total of 8,915 PIT-tagged steelhead smolts were released from Hagerman National, Magic Valley, Clearwater, and Sawtooth fish hatcheries between April 2 and May 16, 1996. Fifty-five percent (4,883) of the PIT-tagged fish were interrogated at Lower Granite Dam. Data for 28 fish fall outside of this date range and are not shown.

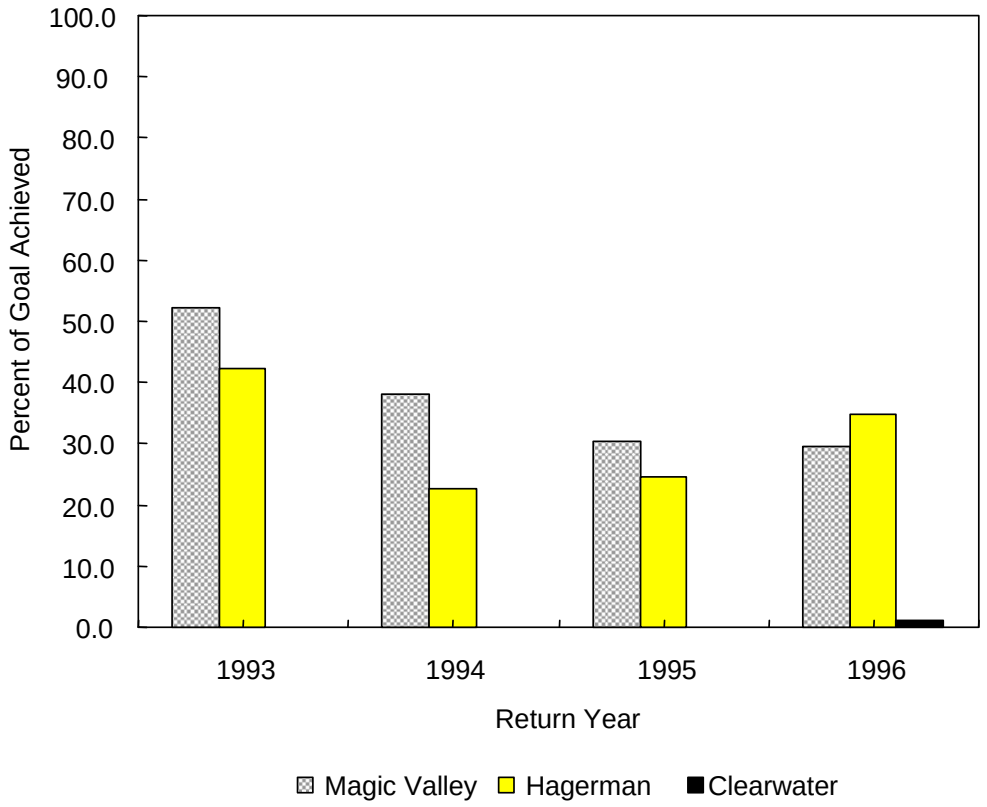

Figure 2. Percent of the adult steelhead return goal achieved by Magic Valley, Hagerman National, and Clearwater fish hatcheries between 1993 and 1996. Annual adult return goals for Magic Valley, Hagerman National, and Clearwater fish hatcheries were 11,660, 13,600, and 14,000 fish, respectively. The first adult steelhead were due to return to Clearwater Fish Hatchery in 1995, however, no adults returned that year.

APPENDICES

Appendix A. Table 1. Release data and estimated adult returns for Clearwater Fish Hatchery summer steelhead, brood years 1995 and 1994. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Clearwater Fish Hatchery **Brood Year: 1995 (age 1)**
Brood Year: 1994 (age 2)

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
S.Fk. Red River	v 27	47,236	DWOR B	CWT	102022	40,970	57.9	Supplementation	1	ND	ND	ND	ND
9/6/95				*PIT/No Mark		4,999			2	ND	ND		
				*No Mark		1,267			3	ND	ND		
			TOTAL CWT RELEASE			40,970							
			TOTAL NON-CWT RELEASE			6,266							
			TOTAL SITE RELEASE			47,236		**TOTAL RETURN:**		ND	ND	ND	ND
S.F. Clearwater R.	10E	65,714	DWOR B	CWT/LV/AD	102029	63,743	8.2	Contribution	1	ND	ND	ND	ND
Red House Hole				CWT/LV/AD/PIT		(300)			2	ND	ND		
4/17/96				*LV/AD		1,971			3	ND	ND		
S.F. Clearwater R.	10E		DWOR B	**NON-CWT		117,471							
Red House Hole	11E			(Includes all *)									
4/17/96													
S.F. Clearwater R.	9E	65,516	DWOR B	CWT/LV/AD	103514	63,551	7.7	Contribution	1	ND	ND	ND	ND
Cottonwood Creek				CWT/LV/AD/PIT		(300)			2	ND	ND		
4/18/96				*LV/AD		1,965			3	ND	ND		
S.F. Clearwater R.	9E		DWOR B	**NON-CWT		57,739							
Cottonwood Creek	8E			(Includes all *)									
4/18/96													

Appendix A. Table 1. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
S.F. Clearwater R.	9W	66,241	DWOR B	CWT/LV/AD	103515	64,254	7.8	Contribution	1	ND	ND	ND	ND
Milept. 18 above Stites				CWT/LV/AD/PIT		(300)			2	ND	ND		
4/18/96				*LV/AD		1,987			3	ND	ND		
S.F. Clearwater R.	9W		DWOR B	**NON-CWT		61,755							
Milept. 18 above	8W			(Includes all *)									
Stites													
4/18/96													
S.F. Clearwater R.			DWOR B	NON-CWT		236,965		Production	1	ND	ND	ND	ND
Includes all release				(Includes all **)					2	ND	ND		
dates that													
have mark type									3	ND	ND		
indicated by **													
			TOTAL CWT RELEASE			191,548							
			TOTAL NON-CWT RELEASE			236,965							
			TOTAL SITE RELEASE			428,513		**TOTAL RETURN:**		ND	ND	ND	ND
Crooked River	1W	15,215	SELWAY	*LV		15,215	7.5	NBS Research-	1	ND	ND	ND	ND
4/15/96	3E			LV/PIT		(600)		Selway Pgm.	2	ND	ND		
								(BY94-Age 2)	3	ND	ND		
Crooked River	1E	16,144	DWOR B	*LV		16,144	7.5	NBS Research-	1	ND	ND	ND	ND
4/15/96	2W			LV/PIT		(598)		Selway Pgm.	2	ND	ND		
								(BY94-Age 2)	3	ND	ND		
Crooked River	2E	14,659	DWOR B/	*LV		14,659	7.5	NBS Research-	1	ND	ND	ND	ND
4/15/96	3W		SELWAY	LV/PIT		(600)		Selway Pgm.	2	ND	ND		
								(BY94-Age 2)	3	ND	ND		
Crooked River			DWOR B/	NON-CWT		46,018		NBS Research-	1	ND	ND	ND	ND
4/15/96			SELWAY	(Includes all *)				Selway Pgm.	2	ND	ND		
								(BY94-Age 2)	3	ND	ND		
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			46,018							
			TOTAL SITE RELEASE			46,018		**TOTAL RETURN:**		ND	ND	ND	ND

Appendix A. Table 1. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Red River 4/16/96	4W	6,354	SELWAY	CWT/LV *LV	104630	6,164 190	7.4	NBS; Supplem. (BY94-Age 2)	1 2 3	ND ND ND	ND ND ND	ND	ND
Red River 4/17/96	8E 12W	8,000	DWOR B	*AD AD/PIT		8,000 (3,996)	7	Alan Byrne Prjct.	1 2 3	ND ND ND	ND ND ND	ND	ND
			TOTAL CWT RELEASE			6,164							
			TOTAL NON-CWT RELEASE			8,190							
			TOTAL SITE RELEASE			14,354		**TOTAL RETURN:**		ND	ND	ND	ND
Clear Creek 4/24/96	10W	65,522	DWOR B	CWT/LV/AD CWT/LV/AD/PIT *LV/AD	103053	63,556 (300) 1,966	8.6	Contribution	1 2 3	ND ND ND	ND ND ND	ND	ND
Clear Creek 4/18/96	9A 9B 10A 10B	135,837	DWOR B	*AD AD/PIT		135,837 (300)	6.2	Contribution (BY94-Age 2)					
Clear Creek 4/19/96	11W 12W		DWOR B	*AD		97,083							
Clear Creek 4/17-24/96			DWOR B	NON-CWT (Includes all *)		234,886	8.6	Production	1 2 3	ND ND ND	ND ND ND	ND	ND
			TOTAL CWT RELEASE			63,556							
			TOTAL NON-CWT RELEASE			234,886							
			TOTAL SITE RELEASE			298,442		**TOTAL RETURN:**		ND	ND	ND	ND

Appendix A. Table 1. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	CWT	Release	Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
TOTAL DWOR B-STOCK CWT RELEASE						296,074							
TOTAL DWOR B-STOCK NON-CWT RELEASE						502,261							
TOTAL DWOR B-STOCK RELEASE						798,335							
TOTAL SELWAY STOCK CWT RELEASE						6,164							
TOTAL SELWAY STOCK NON-CWT RELEASE						15,405							
TOTAL SELWAY STOCK RELEASE						21,569							
TOTAL DWOR B/SELWAY STOCK CWT RELEASE						0							
TOTAL DWOR B/SELWAY STOCK NON-CWT RELEASE						14,659							
TOTAL DWOR B/SELWAY STOCK RELEASE						14,659							
TOTAL CWT RELEASE FOR CLEARWATER FISH HATCHERY						302,238							
TOTAL NON-CWT RELEASE FOR CLEARWATER FISH HATCHERY						532,325							
TOTAL CLEARWATER FISH HATCHERY RELEASE						834,563							
NUMBER OF PIT TAGS RELEASED						12,288							
NUMBER OF SMOLTS RELEASED						787,327							

Appendix A. Table 2. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1995. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A double asterisk (**) indicates that the fish were included in one of the above Mark Type categories. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Hagerman National Fish Hatchery **Brood Year: 1995**

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Sawtooth Rack	53	94,379	SAW A	CWT/AD	104523	21,941	5.7	Acclimation	1	ND	ND	ND	ND
4/19/96				*AD		72,438		Exp. Group	2	ND	ND		
Sawtooth Rack	54	92,443	SAW A	CWT/AD	104524	21,491	5.5	Acclimation	1	ND	ND	ND	ND
4/19/96				*AD		70,952		Exp. Group	2	ND	ND		
Sawtooth Rack	55	92,138	SAW A	CWT/AD	104525	21,420	6.7	Acclimation	1	ND	ND	ND	ND
4/19/96				CWT/AD/PIT		(301)		Exp. Group	2	ND	ND		
				*AD		70,718							
Sawtooth Rack	53-55		SAW A	**NON-CWT		214,108							
4/19/96				(Includes all *)									
Sawtooth Rack	72	92,973	PAH A	CWT/AD	104532	21,682	5.2	Acclimation	1	ND	ND	ND	ND
4/19/96				*AD		71,291		Exp. Group	2	ND	ND		
Sawtooth Rack	73	95,385	PAH A	CWT/AD	104533	22,297	5.1	Acclimation	1	ND	ND	ND	ND
4/19/96				*AD		73,088		Exp. Group	2	ND	ND		
Sawtooth Rack	74	87,181	PAH A	CWT/AD	104534	20,379	5.3	Acclimation	1	ND	ND	ND	ND
4/19/96				CWT/AD/PIT		(302)		Exp. Group	2	ND	ND		
				*AD		66,802							
Sawtooth Rack	72-74		PAH A	**NON-CWT		211,181							
4/19/96				(Includes all *)									

Appendix A. Table 2. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Sawtooth Rack	59	23,158	SAW A	CWT/AD	104529	22,036	5.0	Acclimation	1	ND	ND	ND	ND
4/16/96				*AD		1,122		Control Group	2	ND	ND		
Sawtooth Rack	60	22,822	SAW A	CWT/AD	104530	21,716	5.5	Acclimation	1	ND	ND	ND	ND
4/16/96				*AD		1,106		Control Group	2	ND	ND		
Sawtooth Rack	61	22,605	SAW A	CWT/AD	104531	21,305	5.5	Acclimation	1	ND	ND	ND	ND
4/16/96				CWT/AD/PIT		(301)		Control Group	2	ND	ND		
				*AD		1,300							
Sawtooth Rack	59-61		SAW A	**NON-CWT		3,528							
4/16/96				(Includes all *)									
Sawtooth Rack			SAW A	**AD		85,025		Volitional					
4/2-5/16/96				AD/PIT		(1,402)		Release Exp.					
Sawtooth Rack			SAW A	NON-CWT		513,842		Production	1	ND	ND	ND	ND
			PAH A	(Includes all **)					2	ND	ND		
			TOTAL CWT RELEASE			194,267							
			TOTAL NON-CWT RELEASE			513,842							
			TOTAL SITE RELEASE			708,109		**TOTAL RETURN:**		ND	ND	ND	ND
Torrey's Hole-Salmon R.	56	21,840	SAW A	CWT/AD	104526	21,185	6.1	Contribution	1	ND	ND	ND	ND
4/19/96				*AD		655		Acclimated 2 wks.	2	ND	ND		
Torrey's Hole-Salmon R.	57	22,225	SAW A	CWT/AD	104527	21,558	5.8	Contribution	1	ND	ND	ND	ND
4/19/96				*AD		667		Acclimated 2 wks.	2	ND	ND		
Torrey's Hole-Salmon R.	58	21,957	SAW A	CWT/AD	104528	21,298	5.9	Contribution	1	ND	ND	ND	ND
4/19/96				CWT/AD/PIT		(300)		Acclimated 2 wks.	2	ND	ND		
				*AD		659							

Appendix A. Table 2. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Torrey's Hole-Salmon R. 4/19/96	56-58		SAW A	**NON-CWT (Includes all *)		1,981		Production	1 2	ND ND	ND ND	ND	ND
			TOTAL CWT RELEASE			64,041							
			TOTAL NON-CWT RELEASE			1,981							
			TOTAL SITE RELEASE			66,022		**TOTAL RETURN:**		ND	ND	ND	ND
Warm Springs Bridge Little Salmon River 4/8/96	75	88,858	PAH A	CWT/AD *AD	104535	20,699 68,159	5.7	Contribution Trucked Direct	1 2	ND ND	ND ND	ND	ND
Warm Springs Bridge Little Salmon River 4/8/96	76	89,399	PAH A	CWT/AD *AD	104536	20,825 68,574	5.7	Contribution Trucked Direct	1 2	ND ND	ND ND	ND	ND
Warm Springs Bridge Little Salmon River 4/10/96	77	85,876	PAH A	CWT/AD CWT/AD/PIT *AD	104537	19,762 (300) 66,114	4.7	Contribution Trucked Direct	1 2	ND ND	ND ND	ND	ND
Warm Springs Bridge Little Salmon River 4/8-10/96	75-77		PAH A	**NON-CWT (Includes all *)		202,847							
Warm Springs Bridge Little Salmon River 4/10/96	78	86,559	OXBOW A	CWT/AD *AD	104538	20,068 66,491	5.1	Contribution Trucked Direct	1 2	ND ND	ND ND	ND	ND
Warm Springs Bridge Little Salmon River 4/12/96	79	90,631	OXBOW A	CWT/AD *AD	104539	21,012 69,619	4.4	Contribution Trucked Direct	1 2	ND ND	ND ND	ND	ND
Warm Springs Bridge Little Salmon River 4/12/96	80	87,943	OXBOW A	CWT/AD CWT/AD/PIT *AD	104540	20,389 (300) 67,554	4.8	Contribution Trucked Direct	1 2	ND ND	ND ND	ND	ND
Warm Springs Bridge Little Salmon River 4/10-12/96	78-80		OXBOW A	**NON-CWT (Includes all *)		203,664							

Appendix A. Table 2. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	Identifying Marks: CWT	Identifying Marks: Release	Size	Marking	Age	Return Composition		Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
Warm Springs Bridge			PAH A	NON-CWT		406,511		Production	1	ND	ND	ND	ND
Little Salmon River			OXBOW A	(Includes all **)					2	ND	ND		
			TOTAL CWT RELEASE			122,755							
			TOTAL NON-CWT RELEASE			406,511							
			TOTAL SITE RELEASE			529,266		**TOTAL RETURN:**		ND	ND	ND	ND
Pahsimeroi Ponds			PAH A	AD		21,196		Volitional	1	ND	ND	ND	ND
4/11-5/15/96				AD/PIT		(1,400)		Release Exp.	2	ND	ND		
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			21,196							
			TOTAL SITE RELEASE			21,196		**TOTAL RETURN:**		ND	ND	ND	ND
TOTAL SAW A-STOCK CWT RELEASE						193,950							
TOTAL SAW A-STOCK NON-CWT RELEASE						219,617							
TOTAL SAW A-STOCK RELEASE						413,567							
TOTAL PAH A-STOCK CWT RELEASE						125,644							
TOTAL PAH A-STOCK NON-CWT RELEASE						520,249							
TOTAL PAH A-STOCK RELEASE						645,893							
TOTAL OXBOW A-STOCK CWT RELEASE						61,469							
TOTAL OXBOW A-STOCK NON-CWT RELEASE						203,664							
TOTAL OXBOW A-STOCK RELEASE						265,133							
TOTAL CWT RELEASE FOR HAGERMAN NATIONAL FISH HATCHERY						381,063							
TOTAL NON-CWT RELEASE FOR HAGERMAN NATIONAL FISH HATCHERY						943,530							
TOTAL HAGERMAN NATIONAL FISH HATCHERY RELEASE						1,324,593							
NUMBER OF PIT TAGS RELEASED						4,606							

Appendix A. Table 3. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1995. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Magic Valley Fish Hatchery **Brood Year: 1995**

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Slate Creek	U 3E	51,405	DWOR B	CWT/LV/AD	103507	31,929	4.6	Contribution	1	ND	ND	ND	ND
U. Salmon R.				*LV/AD		987		Bio-Diet	2	ND	ND		
4/29-30/96				*AD		18,489			3	ND	ND		
Slate Creek	4E	52,080	DWOR B	CWT/LV/AD	103507	29,766	4.2	Contribution	1	ND	ND	ND	ND
U. Salmon R.				CWT/LV/AD/PIT		(306)			2	ND	ND		
4/26-27/96				*LV/AD		921			3	ND	ND		
				*AD		21,393							
Slate Creek	5E		DWOR B	*AD		132,812							
U. Salmon R.	6E												
4/27-5/2/96	7E												
	3W												
Slate Creek			DWOR B	NON-CWT		174,602		Production	1	ND	ND	ND	ND
U. Salmon R.				(Includes all *)					2	ND	ND		
4/26-5/2/96									3	ND	ND		
			TOTAL CWT RELEASE			61,695							
			TOTAL NON-CWT RELEASE			174,602							
			TOTAL SITE RELEASE			236,297		**TOTAL RETURN:**		ND	ND	ND	ND
E.Fk. Salmon R.	8E	114,485	DWOR B	CWT/LV/AD	103508	63,013		Contribution	1	ND	ND	ND	ND
4/24-5/2/96	10E			CWT/LV/AD/PIT		(300)			2	ND	ND		
				*LV/AD		1,949			3	ND	ND		
				*AD		49,523							

Appendix A. Table 3. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
E.Fk. Salmon R.	5-7E		DWOR B	*AD		210,459							
4/27-5/4/96	3-9W												
E.Fk. Salmon R.			DWOR B	NON-CWT		261,931		Production	1	ND	ND	ND	ND
4/27-5/4/96				(Includes all *)					2	ND	ND		
									3	ND	ND		
			TOTAL CWT RELEASE			63,013							
			TOTAL NON-CWT RELEASE			261,931							
			TOTAL SITE RELEASE			324,944		**TOTAL RETURN:**		ND	ND	ND	ND
E.Fk. Salmon R. Trap	11E	62,920	E.FK. B	CWT/LV/AD	104613	10,806	4.4	Contribution	1	ND	ND	ND	ND
4/24/96				CWT/LV/AD/PIT		(300)			2	ND	ND		
				*LV/AD		334			3	ND	ND		
E.Fk. Salmon R. Trap	11E		E.FK. B	CWT/LV/AD	104709	22,050	4.4	Contribution	1	ND	ND	ND	ND
4/24/96				*LV/AD		682			2	ND	ND		
									3	ND	ND		
E.Fk. Salmon R. Trap	11E		DWOR B	*AD		29,048							
4/24/96													
E.Fk. Salmon R. Trap	9E	64,190	DWOR B	*AD		64,190	4.9						
4/24/96													
E.Fk. Salmon R. Trap			DWOR B	NON-CWT		94,254		Production	1	ND	ND	ND	ND
4/24-30/96			E.FK. B	(Includes all *)					2	ND	ND		
									3	ND	ND		
			TOTAL CWT RELEASE			32,856							
			TOTAL NON-CWT RELEASE			94,254							
			TOTAL SITE RELEASE			127,110		**TOTAL RETURN:**		ND	ND	ND	ND
Hazard Creek	6W	55,852	DWOR B	CWT/LV/AD	103509	31,124	4.6	Contribution	1	ND	ND	ND	ND
Little Salmon River				*LV/AD		963			2	ND	ND		
4/10-11/96				*AD		23,765			3	ND	ND		
Hazard Creek	7W	55,854	DWOR B	CWT/LV/AD	103509	31,103	4.7	Contribution	1	ND	ND	ND	ND
Little Salmon River				CWT/LV/AD/PIT		(304)			2	ND	ND		
4/11/96				*LV/AD		962			3	ND	ND		
				*AD		23,780							

Appendix A. Table 3. Continued.

				Identifying Marks									

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Hazard Creek Little Salmon River 4/8-12/96	1-2E 1-8W		DWOR B	*AD		291,584							
Hazard Creek Little Salmon River 4/8-12/96			DWOR B	NON-CWT (Includes all *)		341,054		Production	1 2 3	ND ND ND	ND ND ND	ND	ND
			TOTAL CWT RELEASE			62,227							
			TOTAL NON-CWT RELEASE			341,054							
			TOTAL SITE RELEASE			403,281		**TOTAL RETURN:**		ND	ND	ND	ND
N.Fk. Salmon R. 4/16/96	12W	63,765	PAH A	CWT/AD CWT/AD/PIT *AD	103510	61,852 (300) 1,913	4.5	Contribution	1 2	ND ND	ND ND	ND	ND
N.Fk. Salmon R. 4/15/96	10W 11W		PAH A	*AD		63,943							
N.Fk. Salmon R. 4/15-16/96			PAH A	NON-CWT (Includes all *)		65,856		Production	1 2	ND ND	ND ND	ND	ND
			TOTAL CWT RELEASE			61,852							
			TOTAL NON-CWT RELEASE			65,856							
			TOTAL SITE RELEASE			127,708		**TOTAL RETURN:**		ND	ND	ND	ND
McNabb Pt. Salmon River 4/16-17/96	14W	63,455	PAH A	CWT/AD CWT/AD/PIT *AD	103511	61,552 (300) 1,903		Contribution	1 2	ND ND	ND ND	ND	ND
McNabb Pt. Salmon River 4/16-17/96	10W 13W 15W		PAH A	*AD		138,513							

Appendix A. Table 3. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	Identifying Marks: CWT	Release	Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
McNabb Pt.			PAH A	NON-CWT		140,416		Production	1	ND	ND	ND	ND
Salmon River				(Includes all *)					2	ND	ND		
4/15-17/96													
			TOTAL CWT RELEASE			61,552							
			TOTAL NON-CWT RELEASE			140,416							
			TOTAL SITE RELEASE			201,968		**TOTAL RETURN:**		ND	ND	ND	ND
Lemhi River	14E	63,580	PAH A	CWT/AD	103512	61,673	4.4	Contribution	1	ND	ND	ND	ND
4/22/96				CWT/AD/PIT		(299)			2	ND	ND		
				*AD		1,907							
Lemhi River	10W		PAH A	*AD		137,632							
4/15-24/96	12E												
	13E												
Lemhi River			PAH A	NON-CWT		139,539		Production	1	ND	ND	ND	ND
4/15-24/96				(Includes all *)					2	ND	ND		
			TOTAL CWT RELEASE			61,673							
			TOTAL NON-CWT RELEASE			139,539							
			TOTAL SITE RELEASE			201,212		**TOTAL RETURN:**		ND	ND	ND	ND
Salmon River	16W	64,625	PAH A	CWT/AD	103513	62,686	4.7	Contribution	1	ND	ND	ND	ND
at Bruno Br.				CWT/AD/PIT		(300)			2	ND	ND		
4/18/96				*AD		1,939							
Salmon River	15W		PAH A	*AD		142,620							
at Bruno Br.	15E												
4/17-19/96	16E												
Salmon River			PAH A	NON-CWT		144,559		Production	1	ND	ND	ND	ND
at Bruno Br.				(Includes all *)					2	ND	ND		
4/17-19/96													
			TOTAL CWT RELEASE			62,686							
			TOTAL NON-CWT RELEASE			144,559							
			TOTAL SITE RELEASE			207,245		**TOTAL RETURN:**		ND	ND	ND	ND

Appendix A. Table 3. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	Identifying Marks: CWT	Identifying Marks: Release	Identifying Marks: Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
E. Fk. Salmon R.	8W		DWOR B	*AD		38,320		Contribution	1	ND	ND	ND	ND
at Herd Creek									2	ND	ND		
4/12/96													
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			38,320							
			TOTAL SITE RELEASE			38,320		**TOTAL RETURN:**		ND	ND	ND	ND
TOTAL DWOR B-STOCK CWT RELEASE						186,935							
TOTAL DWOR B-STOCK NON-CWT RELEASE						909,145							
TOTAL DWOR B-STOCK RELEASE						1,096,080							
TOTAL E. FK. B-STOCK CWT RELEASE						32,856							
TOTAL E. FK. B-STOCK NON-CWT RELEASE						1,016							
TOTAL E. FK. B-STOCK RELEASE						33,872							
TOTAL PAH A-STOCK CWT RELEASE						247,763							
TOTAL PAH A-STOCK NON-CWT RELEASE						490,370							
TOTAL PAH A-STOCK RELEASE						738,133							
TOTAL CWT RELEASE FOR MAGIC VALLEY FISH HATCHERY						467,554							
TOTAL NON-CWT RELEASE FOR MAGIC VALLEY FISH HATCHERY						1,400,531							
TOTAL MAGIC VALLEY FISH HATCHERY RELEASE						1,868,085							
NUMBER OF PIT TAGS RELEASED						2,409							

Appendix A. Table 4. Release data and estimated adult returns for Sawtooth Fish Hatchery summer steelhead, brood year 1994. An asterisk (*) indicates that the fish were counted in the NON-CWT category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Sawtooth Fish Hatchery **Brood Year: 1994**

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Sawtooth Rack 4/2-5/16/96			SAW A	*AD		22,507		Volitional	1	ND	ND	ND	ND
				*AD/PIT		(400)		Release Exp. (Age 2 Smolts)	2	ND	ND		
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			22,507							
			TOTAL SITE RELEASE			22,507		**TOTAL RETURN:**		ND	ND	ND	ND

TOTAL CWT RELEASE FOR SAWTOOTH FISH HATCHERY	0
TOTAL NON-CWT RELEASE FOR SAWTOOTH FISH HATCHERY	22,507
TOTAL SAWTOOTH FISH HATCHERY RELEASE	22,507
NUMBER OF PIT TAGS RELEASED	400

Appendix B. Table 1. Release data and estimated adult returns for Clearwater Fish Hatchery summer steelhead, brood year 1992. An asterisk (*) indicates that the fish were counted in the NON-CWT category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Clearwater Fish Hatchery **Brood Year: 1992**

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
S.F. Clearwater R.	9	43,050	DWOR B	CWT/LV/AD	102947	25,673	10.1	Contribution	1	0	0	1	0.00
Milept. 18 above Stites				*LV/AD		155		Shade Struct.	2	0	1		
4/13/93				*AD CLIP		17,122			3	ND	ND		
				*AD/PIT		100							
S.F. Clearwater R.	11	45,180	DWOR B	CWT/LV/AD	104937	22,003	8.9	Contribution	1	0	0	0	0.00
Milept. 18 above Stites				*LV/AD		66		Shade - Control	2	0	0		
4/13-14/93				*AD		23,011			3	ND	ND		
				*AD/PIT		100							
S.F. Clearwater R.	10	38,350	DWOR B	CWT/LV/AD	104938	21,340	9.1	Contribution	1	0	0	1	0.00
Milept. 18 above Stites				*LV/AD		64		Shade Struct.	2	0	1		
4/13/93				*AD		16,846			3	ND	ND		
				*AD/PIT		100							
S.F. Clearwater R.	ND	199,720	DWOR B	*AD		199,720	9.3	Production					
Milept. 18 above Stites													
4/12-13/93													
S.F. Clearwater R.			DWOR B	NON-CWT		257,284	ND	Production	1	0	0	0	0.00
Milept. 18 above Stites				(includes all *)				(Includes all *)	2	0	0		
									3	ND	ND		
			TOTAL CWT RELEASE			69,016							
			TOTAL NON-CWT RELEASE			257,284							
			TOTAL SITE RELEASE			326,300		**TOTAL RETURN:**		0	2	2	0.00

Appendix B. Table 1. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
TOTAL CWT RELEASE FOR CLEARWATER FISH HATCHERY						69,016							
TOTAL NON-CWT RELEASE FOR CLEARWATER FISH HATCHERY						257,284							
TOTAL CLEARWATER FISH HATCHERY RELEASE						326,300							
NUMBER OF PIT TAGS RELEASED						300							

Appendix B. Table 2. Release data and estimated adult returns for Clearwater Fish Hatchery summer steelhead, brood year 1993. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Clearwater Fish Hatchery **Brood Year: 1993**

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
S.F. Clearwater R.	2W	28,417	DWOR B	CWT/LV/AD	104731	20,424	8.3	Contribution	1	0	0	0	0.00
4/25/94				*LV/AD		741			2	ND	ND		
				*AD		7,252			3	ND	ND		
S.F. Clearwater R.	7E	52,419	DWOR B	CWT/LV/AD	104736	21,430	8.3	Contribution	1	0	0	0	0.00
4/25-26/94				CWT/LV/AD/PIT		(200)			2	ND	ND		
				*LV/AD		550			3	ND	ND		
				*AD		30,439							
S.F. Clearwater R.			DWOR B	**NON-CWT		143,213	8.3						
4/25-26/94				(Includes all *)									
S.F. Clearwater R.	6E	52,103	DWOR B	CWT/LV/AD	104735	22,137	8.3	Contribution	1	0	0	0	0.00
Milept. 18 above Stites				CWT/LV/AD/PIT		(197)			2	ND	ND		
4/25-26/94				*LV/AD		127			3	ND	ND		
				*AD		29,839							
S.F. Clearwater R.			DWOR B	**NON-CWT		82,165	8.3						
Milept. 18 above Stites				(Includes all *)									
4/25-26/94													
S.F. Clearwater R.	4W	52,048	DWOR B	CWT/LV/AD	104734	21,086	9.99	Contribution	1	0	0	0	0.00
Cottonwood Creek				CWT/LV/AD/PIT		(35)			2	ND	ND		
4/25/94				*LV/AD		630			3	ND	ND		
				*AD		30,332							
				AD/PIT		(165)							

Appendix B. Table 2. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
S.F. Clearwater R. Cottonwood Creek 4/25/94			DWOR B	**NON-CWT (Includes all *)		82,610							
S.F. Clearwater R. Includes all release dates that have mark type indicated by **			DWOR B	NON-CWT (Includes all **)		307,988		Production	1 2 3	0 ND ND	0 ND ND	0	0.00
			TOTAL CWT RELEASE			85,077							
			TOTAL NON-CWT RELEASE			307,988							
			TOTAL SITE RELEASE			393,065		**TOTAL RETURN:**		0	0	0	0.00
Crooked River Pond 4/29-5/3/94	3E	52,188	DWOR B	CWT/LV/AD *LV/AD LV/AD/PIT *AD	104732	21,779 242 (233) 30,167	8.92	Contribution	1 2 3	0 ND ND	0 ND ND	0	0.00
Crooked River Pond 4/29-5/3/94	7W	52,262	DWOR B	CWT/LV/AD *LV/AD LV/AD/PIT *AD	104737	20,883 535 (234) 30,844	8.92	Contribution	1 2 3	0 ND ND	0 ND ND	0	0.00
Crooked River Pond 4/29-5/3/94	12E 12W		SELWAY	RV RV/PIT		71,566 (300)	24.6	Selway Program Smolt Release	1 2 3	0 ND ND	0 ND ND	0	0.00
Crooked River Pond 4/29-5/3/94			DWOR B	NON-CWT (Includes all *)		61,788	8.92	Production	1 2 3	0 ND ND	0 ND ND	0	0.00
			TOTAL CWT RELEASE			42,662							
			TOTAL NON-CWT RELEASE			133,354							
			TOTAL SITE RELEASE			176,016		**TOTAL RETURN:**		0	0	0	0.00

Appendix B. Table 2. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
S.F. Red River	V9		DWOR B	RV		50,027	24.6	Supplementation	1	0	0	0	0.00
9/1-2/93				RV/PIT		(5,000)		Finger.-Fall Rel.	2	ND	ND		
								Alan Byrne's	3	ND	ND		
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			50,027							
			TOTAL SITE RELEASE			50,027		**TOTAL RETURN:**		0	0	0	0.00
Clear Creek	1E	51,498	DWOR B	CWT/LV/AD	104729	21,507	8.92	Contribution	1	0	0	0	0.00
5/3/94				*LV/AD		261			2	ND	ND		
				*AD		29,730			3	ND	ND		
Clear Creek	2E	51,411	DWOR B	CWT/LV/AD	104730	21,562	8.92	Contribution	1	0	0	0	0.00
5/3/94				*LV/AD		240			2	ND	ND		
				*AD		29,609			3	ND	ND		
Clear Creek	3W	50,951	DWOR B	CWT/LV/AD	104733	20,827	8.92	Contribution	1	0	0	0	0.00
5/3/94				CWT/LV/AD/PIT		(104)			2	ND	ND		
				*LV/AD		360			3	ND	ND		
				*AD		29,764							
				AD/PIT		(196)							
Clear Creek			DWOR B	NON-CWT		89,964	8.92	Production	1	0	0	0	0.00
5/3/94				(Includes all *)					2	ND	ND		
									3	ND	ND		
			TOTAL CWT RELEASE			63,896							
			TOTAL NON-CWT RELEASE			89,964							
			TOTAL SITE RELEASE			153,860		**TOTAL RETURN:**		0	0	0	0.00

TOTAL DWOR B-STOCK CWT RELEASE	191,635
TOTAL DWOR B-STOCK NON-CWT RELEASE	509,767
TOTAL DWOR B-STOCK RELEASE	701,402
TOTAL SELWAY STOCK CWT RELEASE	0
TOTAL SELWAY STOCK NON-CWT RELEASE	71,566
TOTAL SELWAY STOCK RELEASE	71,566

Appendix B. Table 2. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
TOTAL CWT RELEASE FOR CLEARWATER FISH HATCHERY						191,635							
TOTAL NON-CWT RELEASE FOR CLEARWATER FISH HATCHERY						581,333							
TOTAL CLEARWATER FISH HATCHERY RELEASE						772,968							
NUMBER OF PIT TAGS RELEASED						6,664							
NUMBER OF SMOLTS RELEASED						722,941							

Appendix C. Table 1. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1991. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A double asterisk (**) indicates that the fish were included in one of the above Mark Type categories. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The Hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Hagerman National Fish Hatchery **Brood Year: 1991**

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
E. Fk. Salmon R. at trap	ND	ND	DWOR B	*AD		302,335	ND	Production	1	292	14	324	0.11
4/6-9/92									2	12	6		
			TOTAL CWT RELEASE			0			3	0	0		
			TOTAL NON-CWT RELEASE			302,335							
			TOTAL SITE RELEASE			302,335		**TOTAL RETURN:**		304	20	324	0.11
Little Salmon R. at	ND	ND	DWOR B	CWT/LV/AD	104407	18,386	ND	Contribution	1	0	0	0	0.00
Warm Springs Bridge				*LV/AD		316			2	0	0		
4/16,20/92				*AD		81,230			3	0	0		
Little Salmon R. at	ND	ND	DWOR B	CWT/LV/AD	104408	19,450	ND	Contribution	1	0	0	0	0.00
Warm Springs Bridge				*LV/AD		546			2	0	0		
4/14/92				*AD		85,930			3	0	0		
Little Salmon R. at	ND	ND	DWOR B	CWT/LV/AD	104409	17,390	ND	Contribution	1	0	0	0	0.00
Warm Springs Bridge				*LV/AD		457			2	0	0		
4/16/92				*AD		76,829			3	0	0		
Little Salmon R. at	ND	ND	DWOR B	NON-CWT		245,308	ND	Production	1	0	0	0	0.00
Warm Springs Bridge				(Includes all *)					2	0	0		
4/14,16,20,22/92									3	0	0		
			TOTAL CWT RELEASE			55,226							
			TOTAL NON-CWT RELEASE			245,308							
			TOTAL SITE RELEASE			300,534		**TOTAL RETURN:**		0	0	0	0.00

Appendix C. Table 1. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Pahsimeroi Ponds 3/25-27/92	61-70	223,406	PAH A	*AD		223,406	ND	Production	1 2	270 169	125 76	640	0.29
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			223,406							
			TOTAL SITE RELEASE			223,406		**TOTAL RETURN:**		439	201	640	0.29
Sawtooth Weir 3/13-21/92	71,84		PAH A	CWT/LV/AD *LV/AD *AD	104421	17,955 152 149,183	4.8	Acclimation Experimental Group Trucked to SAWT on 3/17/92	1 2	26 2	1 0	29	0.16
Sawtooth Weir 3/13-21/92	72,85		PAH A	CWT/LV/AD *LV/AD *AD	104422	18,336 515 152,349	5	Acclimation Experimental Group Trucked to SAWT on 3/17/92	1 2	0 6	2 0	8	0.04
Sawtooth Weir 3/13-21/92	81,85		PAH A	CWT/LV/AD *LV/AD *AD	104423	19,341 810 160,699	5.1	Acclimation Experimental Group Trucked to SAWT on 3/17/92	1 2	4 4	2 0	10	0.05
Sawtooth Weir 4/10-13/92	78-80	47,895	PAH A	CWT/LV/AD *LV/AD *AD	104007	45,646 1,850 399	4.5	Size Exp.-Regular & Acc. Control Group Trucked to & released at SAWT on 4/10/92	1 2	5 25	4 4	38	0.08
Sawtooth Weir 4/10-13/92	73-77	54,645	PAH A	CWT/LV/AD *LV/AD *AD	101530	53,463 573 609	2.8	Size Exp.-Large Trucked to & released at SAWT on 4/10/92	1 2	265 44	2 2	313	0.59
Sawtooth Weir 4/10-13/92			PAH A	NON-CWT (Includes all *)		467,139			1 2	162 224	91 60	537	0.11

Appendix C. Table 1. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	CWT	Release	Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
Sawtooth Weir			PAH A	**PIT		1,479		Includes all PIT	1	1	0	1	0.07
4/10-21/92								tags for acc. and	2	0	0		
								size exp's. See					
								study design for					
			TOTAL CWT RELEASE			154,741		complete details.					
			TOTAL NON-CWT RELEASE			467,139							
			TOTAL SITE RELEASE			621,880		**TOTAL RETURN:**		768	168	936	0.15
TOTAL PAH A-STOCK CWT RELEASE						154,741							
TOTAL PAH A-STOCK NON-CWT RELEASE						690,545							
TOTAL PAH A-STOCK RELEASE						845,286		**RETURN IS COMPLETE**					
TOTAL DWOR B-STOCK CWT RELEASE						55,226							
TOTAL DWOR B-STOCK NON-CWT RELEASE						547,643							
TOTAL DWOR B-STOCK RELEASE						602,869							
TOTAL HAGERMAN NATIONAL FISH HATCHERY CWT RELEASE						209,967							
TOTAL HAGERMAN NATIONAL FISH HATCHERY NON-CWT RELEASE						1,238,188		**RETURN**					
TOTAL HAGERMAN NATIONAL FISH HATCHERY RELEASE						1,448,155		**GRAND TOTAL:**		1,511	389	1,900	0.13
NUMBER OF PIT TAGS RELEASED						1,479							

Appendix C. Table 2. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1992. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Hagerman National Fish Hatchery Brood Year: 1992

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Hammer Cr. Lower Salmon R. 4/28/93	95	67,581	SAW A	CWT/LV/AD	104946	17,142	4.8	Production	1	0	0	0	0.00
				*LV/AD		173			2	0	0		
				*AD		50,266							
Hammer Cr. Lower Salmon R. 4/28/93	96	77,389	SAW A	CWT/LV/AD	104947	19,655	4.8	Production	1	0	0	8	0.04
				*LV/AD		99			2	4	4		
				*AD		57,635							
Hammer Cr. Lower Salmon R. 4/28/93	97	66,036	SAW A	CWT/LV/AD	104948	16,662	4.8	Production	1	0	0	20	0.12
				*LV/AD		515			2	10	10		
				*AD		48,859							
Hammer Cr. Lower Salmon R. Includes all release dates that have Mark Type indicated by *		157,547	SAW A	NON-CWT (includes all *)		157,547	ND	Production (Includes all *)	1	0	0	82	0.05
									2	41	41		
			TOTAL CWT RELEASE			53,459							
			TOTAL NON-CWT RELEASE			157,547							
			TOTAL SITE RELEASE			211,006		**TOTAL RETURN:**		55	55	110	0.05
Sawtooth weir 4/9/93	74	19,229	PAH A	CWT/LV/AD	104949	19,196	4.9	Acclimation Control Group Trucked to SAWT on 4/9/93	1	4	5	21	0.11
				CWT/LV/AD/PIT	104949	(100)			2	12	0		
				*AD		33							

Appendix C. Table 2. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Sawtooth weir 4/9/93	73 74	18,251	PAH A	CWT/LV/AD CWT/LV/AD/PIT *LV/AD *AD	104950 104950	18,168 (100) 51 32	4.7	Acclimation Control Group Trucked to SAWT on 4/9/93	1 2	0 16	5 3	24	0.13
Sawtooth weir 4/9/93	72 73	17,899	PAH A	CWT/LV/AD CWT/LV/AD/PIT *LV/AD *AD	104951 104951	17,818 (100) 50 31	4.9	Acclimation Control Group Trucked to SAWT on 4/9/93	1 2	12 13	9 3	37	0.21
Sawtooth weir 4/9/93	72	4,571	PAH A	CWT/LV/AD *AD	105034	4,563 8	4.9	Acclimation Control Group Trucked to SAWT on 4/9/93	1 2	14 4	3 0	21	0.46
Sawtooth weir 4/8/93	69	207,592	PAH A	CWT/LV/AD *LV/AD *AD *PIT	105020	20,262 246 187,084 (100)	5.1	Acclimation Experimental Group Trucked to SAWT on 3/18-24/93	1 2	23 36	3 7	69	0.34
Sawtooth weir 4/8/93	69 70	191,791	PAH A	CWT/LV/AD *LV/AD *AD	105021	18,726 164 172,901	4.8	Acclimation Experimental Group Trucked to SAWT on 3/18-24/93	1 2	23 23	7 4	57	0.30
Sawtooth weir 4/8/93	70 71	186,674	PAH A	CWT/LV/AD *LV/AD *AD *PIT	105022	18,235 71 168,368 (100)	5	Acclimation Experimental Group Trucked to SAWT on 3/18-24/93	1 2	40 11	10 7	68	0.37
Sawtooth weir 4/8/93	71	83,513	PAH A	CWT/LV/AD *AD *PIT	105010	8,161 75,352 (100)	5.1	Acclimation Experimental Group Trucked to SAWT on 3/18-24/93	1 2	12 8	2 2	24	0.29

Appendix C. Table 2. Continued.

				Identifying Marks									

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Sawtooth weir 4/19 & 22/93	85- 91	140,626	SAW A	*AD		(140,626)	ND	Production					
Sawtooth Weir Includes all release dates that have Mark Type indicated by *			SAW A PAH A	NON-CWT (Includes all *)	140,626 463,765	604,391	ND	Production (Includes all *)	1 2	1,689 985	402 209	3,285	0.54
			TOTAL CWT RELEASE			125,129							
			TOTAL NON-CWT RELEASE			604,391							
			TOTAL SITE RELEASE			729,520		**TOTAL RETURN:**		2,925	681	3,606	0.49
Hazard Cr. L. Salmon R. 4/12/93	45	219,946	SAW A	CWT/LV/AD *LV/AD *AD	105017	20,045 340 199,561	5	Production	1 2	20 5	20 5	50	0.25
Hazard Cr. L. Salmon R. 4/12/93	45 46	112,344	SAW A	CWT/LV/AD *LV/AD *AD	105018	10,245 103 101,996	5	Production	1 2	0 0	0 0	0	0.00
Hazard Cr. L. Salmon R. 4/12/93	46	215,026	SAW A	CWT/LV/AD *LV/AD *AD	105019	19,621 65 195,340	4.8	Production	1 2	0 14	0 14	28	0.14
Hazard Cr. L. Salmon R. Includes all release dates that have Mark Type indicated by *			SAW A	NON-CWT (Includes all *)		497,405	ND	Production (Includes all *)	1 2	195 189	195 189	768	0.15
			TOTAL CWT RELEASE			49,911							
			TOTAL NON-CWT RELEASE			497,405							
			TOTAL SITE RELEASE			547,316		**TOTAL RETURN:**		423	423	846	0.15

Appendix C. Table 2. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	Identifying Marks: CWT	Identifying Marks: Release	Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
TOTAL SAW A-STOCK CWT RELEASE						103,370							
TOTAL SAW A-STOCK NON-CWT RELEASE						795,578							
TOTAL SAW A-STOCK RELEASE						898,948		**RETURN IS COMPLETE**					
TOTAL PAH A-STOCK CWT RELEASE						125,129							
TOTAL PAH A-STOCK NON-CWT RELEASE						463,765							
TOTAL PAH A-STOCK RELEASE						588,894							
TOTAL CWT RELEASE FOR HAGERMAN HATCHERY						228,499							
TOTAL NON-CWT RELEASE FOR HAGERMAN HATCHERY						1,259,343		**RETURN**					
TOTAL HAGERMAN HATCHERY RELEASE						1,487,842		**GRAND TOTAL:**		3,403	1,159	4,562	0.31
NUMBER OF PIT TAGS RELEASED						600							

Appendix C. Table 3. Release data and estimated adult returns for Hagerman National Fish Hatchery summer steelhead, brood year 1993. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Hagerman National Fish Hatchery Brood Year: 1993

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Little Salmon R. 4/25/94	85	164,679	PAH A	CWT/LV/AD	104601	20,529	4.7	Contribution	1	3	3	6	0.03
				CWT/LV/AD/PIT		(100)			2	ND	ND		
				*LV/AD		156							
				*AD		143,994							
Little Salmon R. 4/25/94	86	163,484	PAH A	CWT/LV/AD	104602	20,365	4.5	Contribution	1	2	2	4	0.02
				CWT/LV/AD/PIT		(100)			2	ND	ND		
				*LV/AD		275							
				*AD		142,844							
Little Salmon R. 4/25/94			PAH A	NON-CWT (Includes all *)		287,269		Production	1	35	35	70	0.02
									2	ND	ND		
			TOTAL CWT RELEASE			40,894							
			TOTAL NON-CWT RELEASE			287,269							
			TOTAL SITE RELEASE			328,163		**TOTAL RETURN:**		40	40	80	0.02
Lemhi River 4/6/94	98	235,788	PAH A	CWT/LV/AD	104603	21,155	4.7	Contribution	1	30	15	45	0.21
				CWT/LV/AD/PIT		(200)			2	ND	ND		
				*LV/AD		145							
				*AD		214,488							

Appendix C. Table 3. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Lemhi River			PAH A	NON-CWT		214,633		Production	1	304	153	457	0.21
4/6/94				(Includes all *)					2	ND	ND		
			TOTAL CWT RELEASE			21,155							
			TOTAL NON-CWT RELEASE			214,633							
			TOTAL SITE RELEASE			235,788		**TOTAL RETURN:**		334	168	502	0.21
Salmon River	51-3	61,321	SAW A	CWT/LV/AD	104628	60,772	4.7	Acclimation Control	1	3	12	15	0.02
Sawtooth Weir				CWT/LV/AD/PIT		(302)			2	ND	ND		
4/29/94				*LV/AD		549							
Salmon River	54-6	711,813	SAW A	CWT/LV/AD	104629	60,929	4.4	Acclimation Test	1	45	9	54	0.09
Sawtooth Weir				CWT/LV/AD/PIT		(298)			2	ND	ND		
4/15/94				*LV/AD		507							
				*AD		650,377							
Salmon River			SAW A	NON-CWT		651,433		Production	1	1,584	336	1,920	0.29
Sawtooth Weir				(Includes all *)					2	ND	ND		
4/15-29/94													
			TOTAL CWT RELEASE			121,701							
			TOTAL NON-CWT RELEASE			651,433							
			TOTAL SITE RELEASE			773,134		**TOTAL RETURN:**		1,632	357	1,989	0.26
Bruno Landing	74-6	182,083	SAW A	CWT/LV/AD	104626	61,817	4.7	Contribution	1	92	7	99	0.16
4/12/94				CWT/LV/AD/PIT		(300)			2	ND	ND		
				*LV/AD		778							
				*AD		119,488							
Bruno Landing			SAW A	NON-CWT		120,266		Production	1	179	14	193	0.16
4/12/94				(Includes all *)					2	ND	ND		
			TOTAL CWT RELEASE			61,817							
			TOTAL NON-CWT RELEASE			120,266							
			TOTAL SITE RELEASE			182,083		**TOTAL RETURN:**		271	21	292	0.16

Appendix C. Table 3. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
TOTAL PAH A-STOCK CWT RELEASE						62,049							
TOTAL PAH A-STOCK NON-CWT RELEASE						501,902							
TOTAL PAH A-STOCK RELEASE						563,951		**RETURN IS INCOMPLETE**					
TOTAL SAW A-STOCK CWT RELEASE						183,518							
TOTAL SAW A-STOCK NON-CWT RELEASE						771,699							
TOTAL SAW A-STOCK RELEASE						955,217							
TOTAL CWT RELEASE FOR HAGERMAN NATIONAL FISH HATCHERY						245,567							
TOTAL NON-CWT RELEASE FOR HAGERMAN NATIONAL FISH HATCHERY						1,273,601		**RETURN**					
TOTAL HAGERMAN NATIONAL FISH HATCHERY RELEASE						1,519,168		**GRAND TOTAL:**		2,277	586	2,863	0.19
NUMBER OF PIT TAGS RELEASED						1,300							

Appendix D. Table 1. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1991. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A double asterisk (**) indicates that the fish were included in one of the above Mark Type categories. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Magic Valley Fish Hatchery Brood Year: 1991

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
E.F. Salmon R. 4/6-14/92	9	480,368	DWOR B	CWT/LV/AD *AD	104418	21,771 458,597	4.4	Contribution Rep. #1	1 2 3	0 3 0	0 0 0	3	0.01
E.F. Salmon R. 4/6-14/92	9		DWOR B	CWT/LV/AD/PIT	104418	(100)							
E.F. Salmon R. 4/6-14/92	11	476,032	DWOR B	CWT/LV/AD *LV/AD *AD	104419	21,568 143 454,321	4.5	Contribution Rep. #2	1 2 3	0 2 0	0 1 0	3	0.01
E.F. Salmon R. 4/6-14/92	11		DWOR B	CWT/LV/AD/PIT	104419	(100)							
E.F. Salmon R. 4/6-14/92	14	84,800	E FK B	CWT/LV/AD *AD	104420	20,821 63,979	6.1	Contribution Rep. #3	1 2 3	20 4 0	1 2 0	27	0.13
E.F. Salmon R. 4/6-14/92	14		E FK B	CWT/LV/AD/PIT	104420	(100)							

Appendix D. Table 1. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
E.F. Salmon R. 4/6-14/92			DWOR B E FK B	NON-CWT (Includes all *)		977,040		Production (Includes all *)	1 2	0 37	0 18	55	0.01
Includes all release dates that have Mark Type indicated by *									3	0	0		
			TOTAL CWT RELEASE			64,160							
			TOTAL NON-CWT RELEASE			977,040							
			TOTAL SITE RELEASE			1,041,200		**TOTAL RETURN:**		66	22	88	0.01
Hazard Cr. L. Salmon R. 4/17-25/92	4	284,715	OXBOW A	CWT/LV/AD *AD	104416	22,223 262,492	3.9	Contribution Rep. #2	1 2	5 45	5 45	100	0.45
Hazard Cr. L. Salmon R. 4/17-25/92	4		OXBOW A	CWT/LV/AD/PIT	104416	(100)							
Hazard Cr. L. Salmon R. 4/17-25/92	7	281,085	OXBOW A	CWT/LV/AD *AD	104417	21,604 259,481	4	Contribution Rep. #3	1 2	8 3	8 3	22	0.10
Hazard Cr. L. Salmon R. 4/17-25/92	7		OXBOW A	CWT/LV/AD/PIT	104417	(100)							
L. Salmon R. at Warm Springs Bridge 4/14-21/92	1	436100	OXBOW A	CWT/LV/AD *AD	104415	21,091 415,009	4.3	Contribution Rep. #1	1 2	5 3	5 3	16	0.08
L. Salmon R. at Warm Springs Bridge 4/14-21/92	1		OXBOW A	CWT/LV/AD/PIT	104415	(100)							

Appendix D. Table 1. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	CWT	Release	Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
L. Salmon R.	1		OXBOW A	NON-CWT		936,982	4.3	Production	1	261	261	1,994	0.21
4/14-25/92				(Includes all *)				(Includes all *)	2	736	736		
Includes all release dates that have Mark Type indicated by *													
			TOTAL CWT RELEASE			64,918							
			TOTAL NON-CWT RELEASE			936,982							
			TOTAL SITE RELEASE			1,001,900		**TOTAL RETURN:**		1,066	1,066	2,132	0.21
Sawtooth Weir	ND	ND	PAH A	*AD		117,300	5	Production	1	40	23	134	0.11
Salmon R.									2	55	16		
3/23-24/92													
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			117,300							
			TOTAL SITE RELEASE			117,300		**TOTAL RETURN:**		95	39	134	0.11
TOTAL PAH A-STOCK CWT RELEASE						0							
TOTAL PAH A-STOCK NON-CWT RELEASE						117,300							
TOTAL PAH A-STOCK RELEASE						117,300							
TOTAL OXBOW A-STOCK CWT RELEASE						64,918							
TOTAL OXBOW A-STOCK NON-CWT RELEASE						936,982							
TOTAL OXBOW A-STOCK RELEASE						1,001,900							
TOTAL DWOR B-STOCK CWT RELEASE						43,339		**RETURN IS COMPLETE**					
TOTAL DWOR B-STOCK NON-CWT RELEASE						913,061							
TOTAL DWOR B-STOCK RELEASE						956,400							
TOTAL E FK B-STOCK CWT RELEASE						20,821							
TOTAL E FK B-STOCK NON-CWT RELEASE						63,979							
TOTAL E FK B-STOCK RELEASE						84,800							
TOTAL MAGIC VALLEY FISH HATCHERY CWT RELEASE						129,078							
TOTAL MAGIC VALLEY FISH HATCHERY NON-CWT RELEASE						2,031,322		**RETURN**					
TOTAL MAGIC VALLEY FISH HATCHERY RELEASE						2,160,400		**GRAND TOTAL:**		1,227	1,127	2,354	0.11
NUMBER OF PIT TAGS RELEASED						600							

Appendix D. Table 2. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1992. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. Return data were tabulated (if available) for each CWT code and NON-CWT group. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Magic Valley Fish Hatchery Brood Year: 1992

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
E.F. Salmon R.	1	212,881	DWOR B	CWT/LV/AD	105007	18,924	6.6	Contribution	1	4	0	14	0.07
4/7-8/93				*LV/AD		792			2	10	0		
				*LV/AD/PIT		100			3	ND	ND		
				*AD		193,065							
E.F. Salmon R.	5	178,119	DWOR B	CWT/LV/AD	105005	16,024	6.9	Contribution	1	0	0	2	0.01
4/7-8/93				*LV/AD		62			2	2	0		
				*LV/AD/PIT		100			3	ND	ND		
				*AD		161,933							
E.F. Salmon R.	9	106,400	E FK B	CWT/LV/AD	105009	19,128	6.1	Contribution	1	0	1	1	0.01
4/7-9/93				*LV/AD		1,406			2	0	0		
				*LV/AD/PIT		100			3	ND	ND		
				*AD		85,766							
E.F. Salmon R.		443,324	DWOR B	NON-CWT	356,052	443,324	ND	Production	1	40	8	232	0.05
4/7-9/93			E FK B	(Includes all *)	87,272			(Includes all *)	2	169	15		
									3	ND	ND		
			TOTAL CWT RELEASE			54,076							
			TOTAL NON-CWT RELEASE			443,324							
			TOTAL SITE RELEASE			497,400		**TOTAL RETURN:**		225	24	249	0.05
Hazard Cr.	4	109,900	DWOR B	CWT/LV/AD	105004	19,358	4.7	Contribution	1	0	0	4	0.02
L. Salmon R.				*LV/AD		1,583			2	2	2		
4/19-20/93				*LV/AD/PIT		100			3	ND	ND		
				*AD		88,859							

Appendix D. Table 2. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
Hazard Cr.	6	126,500	DWOR B	CWT/LV/AD	105006	19,932	6.9	Contribution	1	11	11	52	0.26
L. Salmon R.				*LV/AD		1,016			2	15	15		
4/16/93				*LV/AD/PIT		100			3	ND	ND		
				*AD		105,452							
Hazard Cr.	8	88,900	DWOR B	CWT/LV/AD	105008	19,909	6.6	Contribution	1	0	0	4	0.02
L. Salmon R.				*LV/AD		1,081			2	2	2		
4/16-19/93				*LV/AD/PIT		100			3	ND	ND		
				*AD		67,810							
Hazard Cr.		266,101	DWOR B	NON-CWT		266,101	ND	Production	1	49	49	268	0.10
L. Salmon R.				(Includes all *)				(Includes all *)	2	85	85		
4/16-20/93									3	ND	ND		
			TOTAL CWT RELEASE			59,199							
			TOTAL NON-CWT RELEASE			266,101							
			TOTAL SITE RELEASE			325,300		**TOTAL RETURN:**		164	164	328	0.10
Lemhi R.	13	66,700	PAH A	CWT/LV/AD	105013	19,692	5.7	Contribution	1	31	21	58	0.29
4/14/93				*LV/AD		1,046			2	4	2		
				*LV/AD/PIT		100							
				*AD		45,862							
Lemhi R.	15	131,800	PAH A	CWT/LV/AD	105015	21,390	5.9	Contribution	1	29	19	73	0.17
4/14-16/93				CWT/LV/AD	105012	22,106			2	17	8		
				*LV/AD		118							
				*LV/AD/PIT		100							
				*AD		88,086							
Lemhi R.		135,312	PAH A	NON-CWT		135,312	ND	Production	1	128	86	303	0.22
4/14-16/93				(Includes all *)				(Includes all *)	2	46	43		
			TOTAL CWT RELEASE			63,188							
			TOTAL NON-CWT RELEASE			135,312							
			TOTAL SITE RELEASE			198,500		**TOTAL RETURN:**		255	179	434	0.22
N.F. Salmon R.	10	190,500	PAH A	CWT/LV/AD	104924	65,637	5.4	Contribution	1	74	49	181	0.28
4/16-22/93				*LV/AD		935			2	39	19		
				*LV/AD/PIT		200							
				*AD		123,728							

Appendix D. Table 2. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
N.F. Salmon R.		124,863	PAH A	NON-CWT		124,863	ND	Production	1	140	94	345	0.28
4/16-22/93				(Includes all *)				(Includes all *)	2	74	37		
			TOTAL CWT RELEASE			65,637							
			TOTAL NON-CWT RELEASE			124,863							
			TOTAL SITE RELEASE			190,500		**TOTAL RETURN:**		327	199	526	0.28
Upper Salmon R.	16	122,300	PAH A	CWT/LV/AD	105016	20,361	5.5	Contribution	1	22	18	47	0.23
Ellis Bridge				*LV/AD		210			2	4	3		
4/12-13/93				*LV/AD/PIT		100							
				*AD		101,629							
Upper Salmon R.	14	144,000	PAH A	CWT/LV/AD	105014	19,778	5.5	Contribution	1	10	8	71	0.36
Ellis Bridge				*LV/AD		1,051			2	51	2		
4/12/93				*LV/AD/PIT		100							
				*AD		123,071							
Upper Salmon R.		226,161	PAH A	NON-CWT		226,161	ND	Production	1	180	147	395	0.17
Ellis Bridge				(Includes all *)				(Includes all *)	2	45	23		
4/12/93													
			TOTAL CWT RELEASE			40,139							
			TOTAL NON-CWT RELEASE			226,161							
			TOTAL SITE RELEASE			266,300		**TOTAL RETURN:**		312	201	513	0.19
Salmon R.	11	260,600	PAH A	CWT/LV/AD	105011	19,924	5.9	Contribution	1	18	12	59	0.30
at Challis				*LV/AD		883			2	19	10		
4/13/93				*LV/AD/PIT		100							
				*AD		239,693							
Salmon R.		240,676	PAH A	NON-CWT		240,676	ND	Production	1	217	145	712	0.30
at Challis				includes all *				(Includes all *)	2	234	116		
4/13/93													
			TOTAL CWT RELEASE			19,924							
			TOTAL NON-CWT RELEASE			240,676							
			TOTAL SITE RELEASE			260,600		**TOTAL RETURN:**		488	283	771	0.30

Appendix D. Table 2. Continued.

Identifying Marks

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Slate Cr.	2	187,100	DWOR B	*AD		187,100	6.1	Production	1	14	0	193	0.10
Upper Salmon R.	3								2	155	24		
4/15/93									3	ND	ND		
			TOTAL CWT RELEASE			0							
			TOTAL NON-CWT RELEASE			187,100							
			TOTAL SITE RELEASE			187,100		**TOTAL RETURN:**		169	24	193	0.10
TOTAL DWOR B-STOCK CWT RELEASE						94,147							
TOTAL DWOR B-STOCK NON-CWT RELEASE						809,253							
TOTAL DWOR B-STOCK RELEASE						903,400							
TOTAL PAH A-STOCK CWT RELEASE						188,888		**RETURN IS INCOMPLETE**					
TOTAL PAH A-STOCK NON-CWT RELEASE						727,012							
TOTAL PAH A-STOCK RELEASE						915,900							
TOTAL E FK B-STOCK CWT RELEASE						19,128							
TOTAL E FK B-STOCK NON-CWT RELEASE						87,272							
TOTAL E FK B-STOCK RELEASE						106,400							
TOTAL CWT RELEASE FOR MAGIC VALLEY FISH HATCHERY						302,163							
TOTAL NON-CWT RELEASE FOR MAGIC VALLEY FISH HATCHERY						1,623,537		**RETURN**					
TOTAL MAGIC VALLEY FISH HATCHERY RELEASE						1,925,700		**GRAND TOTAL:**		1,940	1,074	3,014	0.16
NUMBER OF PIT TAGS RELEASED						1,300							

Appendix D. Table 3. Release data and estimated adult returns for Magic Valley Fish Hatchery summer steelhead, brood year 1993. An asterisk (*) indicates that the fish were counted in the NON-CWT category for the specified release site. A number enclosed in parentheses indicates that the fish were counted in an above category. Return data were tabulated (if available) for each CWT code and NON-CWT group by release site. Release information is summarized by CWT/NON-CWT and stock at bottom of table. ND indicates data were not available. The harvest component of the return composition includes only fish that were harvested in Idaho's sport fishery. The hatchery component of the return composition includes fish that returned to hatchery weirs and off-site escapement.

Hatchery: Magic Valley Fish Hatchery Brood Year: 1993

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	Identifying Marks: CWT Code	Identifying Marks: Release Number	Identifying Marks: Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
E.Fk. Salmon R. 4/13-14/94	1E	63,970	DWOR B	CWT/LV/AD	104721	20,443	5.6	Contribution	1	0	0	0	0.00
				*LV/AD		181			2	ND	ND		
				*AD		43,346			3	ND	ND		
				AD/PIT		(100)							
E.Fk. Salmon R. 4/14/94	2E	59,925	DWOR B	CWT/LV/AD	104722	20,974	5.5	Contribution	1	0	0	0	0.00
				*LV/AD		319			2	ND	ND		
				*AD		42,737			3	ND	ND		
				AD/PIT		(100)							
E.Fk. Salmon R. 4/15/94	3E	64,400	DWOR B	CWT/LV/AD	104710	21,296	4.4	Contribution	1	0	0	0	0.00
				*AD		43,104			2	ND	ND		
				AD/PIT		(100)			3	ND	ND		
E.Fk. Salmon R. 4/11-12/94	1-3W	164,740	DWOR B	*AD		164,740							
E.Fk. Salmon R. 4/12/94	7W	54,720	E.FK. B	CWT/LV/AD	104711	20,648	4.8	Contribution	1	8	4	12	0.06
				*LV/AD		179			2	ND	ND		
				*AD		33,893			3	ND	ND		
				AD/PIT		(100)							
E.Fk. Salmon R. 4/12-13/94	8W	54,400	E.FK. B	CWT/LV/AD	104712	21,377	4.8	Contribution	1	8	4	12	0.06
				*LV/AD		201			2	ND	ND		
				*AD		32,822			3	ND	ND		
				AD/PIT		(100)							

Appendix D. Table 3. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Identifying Marks: Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition: Harvest	Return Composition: Hatchery	Total Returns	SAR (%)
E.Fk. Salmon R.	8E	50,920	E.FK. B	CWT/LV/AD	104713	21,369	4.8	Contribution	1	2	4	6	0.03
4/15-16/94				*AD		29,551			2	ND	ND		
				AD/PIT		(100)			3	ND	ND		
E.Fk. Salmon R.			E.FK. B	NON-CWT		391,073		Production	1	86	21	107	0.03
4/11-16/94			DWOR B	(Includes all *)					2	ND	ND		
									3	ND	ND		
			TOTAL CWT RELEASE			126,107							
			TOTAL NON-CWT RELEASE			391,073							
			TOTAL SITE RELEASE			517,180		**TOTAL RETURN:**		104	33	137	0.03
L. Salmon River	14E	58,000	PAH A	CWT/LV/AD	104723	20,958	4.4	Contribution	1	0	0	0	0.00
at Warm Spring				*LV/AD		180			2	ND	ND		
4/26/94				*AD		36,862							
				AD/PIT		(100)							
L. Salmon River	16E	56,730	PAH A	CWT/LV/AD	104724	21,530	4.1	Contribution	1	8	8	16	0.07
at Warm Spring				*LV/AD		200			2	ND	ND		
4/27/94				*AD		35,000							
				AD/PIT		(100)							
L. Salmon River	13-15E		PAH A	*AD		352,820							
at Warm Spring	13-16W												
4/23-27/94													
L. Salmon River			PAH A	NON-CWT		425,062		Production	1	80	80	160	0.04
at Warm Spring				(Includes all *)					2	ND	ND		
4/23-27/94													
			TOTAL CWT RELEASE			42,488							
			TOTAL NON-CWT RELEASE			425,062							
			TOTAL SITE RELEASE			467,550		**TOTAL RETURN:**		88	88	176	0.04
Slate Creek	5E	120,215	DWOR B	CWT/LV/AD	104925	62,510		Contribution	1	11	ND	11	0.02
U. Salmon R.	6E			*LV/AD		625			2	ND	ND		
4/14-18/94				*AD		57,080			3	ND	ND		
				AD/PIT		(300)							

Appendix D. Table 3. Continued.

Release Site/Date	RW NO.	RW Total	Stock ID	Mark Type	CWT Code	Release Number	Size (FPP)	Marking Purpose	Age Ocean	Return Composition Harvest	Return Composition Hatchery	Total Returns	SAR (%)
Slate Creek U. Salmon R. 4/12-20/94	5W 6W		DWOR B	*AD		91,140							
Slate Creek U. Salmon R. 4/12-20/94			DWOR B	NON-CWT (Includes all *)		148,845		Production	1 2 3	26 ND ND	ND ND ND	26	0.02
			TOTAL CWT RELEASE			62,510							
			TOTAL NON-CWT RELEASE			148,845							
			TOTAL SITE RELEASE			211,355		**TOTAL RETURN:**		37	ND	37	0.02
Pahsimeroi River 4/16-18/94	9E	60,580	PAH A	CWT/LV/AD *LV/AD *AD AD/PIT	104725	21,294 113 39,173 (150)	4.7	Contribution	1 2	30 ND	28 ND	58	0.27
Pahsimeroi River 4/19/94	11E	60,920	PAH A	CWT/LV/AD *LV/AD *AD AD/PIT	104726	21,660 330 38,930 (151)	5.6	Contribution	1 2	36 ND	28 ND	64	0.30
Pahsimeroi River 4/18-22/94	9-12W 10-12E		PAH A	*AD		362,940							
Pahsimeroi River 4/16-22/94			PAH A	NON-CWT (Includes all *)		441,486		Production	1 2	855 ND	728 ND	1,583	0.36
			TOTAL CWT RELEASE			42,954							
			TOTAL NON-CWT RELEASE			441,486							
			TOTAL SITE RELEASE			484,440		**TOTAL RETURN:**		921	784	1,705	0.35
Hazard Creek Little Salmon R. 4/22/94	4W	64,770	DWOR B	CWT/LV/AD *LV/AD *AD AD/PIT	104714	20,891 297 43,582 (100)	5.1	Contribution	1 2 3	0 ND ND	0 ND ND	0	0.00

Appendix D. Table 3. Continued.

Release	RW	RW	Stock	Identifying Marks: Mark	CWT	Release	Size	Marking	Age	Return Composition	Total	SAR

Site/Date	NO.	Total	ID	Type	Code	Number	(FPP)	Purpose	Ocean	Harvest	Hatchery	Returns	(%)
Hazard Creek	4E	63,840	DWOR B	CWT/LV/AD	104715	21,243	4.2	Contribution	1	0	0	0	0.00
Little Salmon R.				*AD		42,597			2	ND	ND		
4/25-28/94				AD/PIT		(100)			3	ND	ND		
Hazard Creek	7E	60,390	DWOR B	CWT/LV/AD	104716	21,582	4.5	Contribution	1	0	0	0	0.00
Little Salmon R.				*LV/AD		154			2	ND	ND		
4/28/94				*AD		38,654			3	ND	ND		
				AD/PIT		(100)							
Hazard Creek	3W	49,725	DWOR B	*AD		49,725	5.1						
Little Salmon R.	6W												
4/22-23/94													
Hazard Creek			DWOR B	NON-CWT		175,009		Production	1	0	0	0	0.00
Little Salmon R.				(Includes all *)					2	ND	ND		
4/22-28/94									3	ND	ND		
			TOTAL CWT RELEASE			63,716							
			TOTAL NON-CWT RELEASE			175,009							
			TOTAL SITE RELEASE			238,725		**TOTAL RETURN:**		0	0	0	0.00

TOTAL E. FK. B-STOCK CWT RELEASE	63,394
TOTAL E. FK. B-STOCK NON-CWT RELEASE	96,646
TOTAL E. FK. B-STOCK RELEASE	160,040
TOTAL DWOR B-STOCK CWT RELEASE	188,939
TOTAL DWOR B-STOCK NON-CWT RELEASE	618,281
TOTAL DWOR B-STOCK RELEASE	807,220
TOTAL PAH A-STOCK CWT RELEASE	85,442
TOTAL PAH A-STOCK NON-CWT RELEASE	866,548
TOTAL PAH A-STOCK RELEASE	951,990
TOTAL CWT RELEASE FOR MAGIC VALLEY FISH HATCHERY	337,775
TOTAL NON-CWT RELEASE FOR MAGIC VALLEY FISH HATCHERY	1,581,475
TOTAL MAGIC VALLEY FISH HATCHERY RELEASE	1,919,250
NUMBER OF PIT TAGS RELEASED	1,701

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