

ANNUAL STOCK ASSESSMENT -

CODED WIRE TAG PROGRAM

(ODFW)

2002 Annual Report

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SUMMARY

This annual report is in fulfillment of contract obligations with Bonneville Power Administration which is the funding source for the Oregon Department of Fish and Wildlife project "Annual Stock Assessment - Coded Wire Tag Program (ODFW)". Results for the 2002 contract period: Objective 1 - Over 1 million juvenile salmon were coded-wire by this program (Table 1). This accounted for about 20% of the fish ODFW coded-wire tagged in 2002 for release in the Columbia Basin; Objective 2 - ODFW recovered and processed over 50,000 snouts collected from coded-wire tagged fish (Table 2); Objective 3 - The survival data summarized below includes results for coded-wire groups funded by this program as well as coded-wire groups funded from other sources; Objective 4 - The last returns of experimental groups of coho marked with VIE tags occurred in 2002 at Sandy Hatchery. This sampling showed that 26 of 67 jack coho and 1 of 2,223 adult coho VIE marked as juveniles retained the VIE mark as adults.

Fall Chinook

There are three types of hatchery fall chinook released by ODFW in the Columbia basin; Tule, Upriver Bright, and Rogue River stocks.

The 10 year average survival of tule stock fall chinook was less than 0.20% for all three programs (Table 3). Ocean recoveries were primarily in West Coast Vancouver Island and Washington coastal fisheries (Table 8). Freshwater recoveries were almost exclusively at hatcheries (Table 9).

The 10 year average survival of up-river bright stock fall chinook ranged from 0.05% for Umatilla Hatchery to 0.22% for Bonneville Hatchery fish released at the hatchery (Table 3). Survival of all three up-river bright hatchery programs has been low since the 1987 brood year (Table 3). Ocean catch of up-river bright stock fall chinook was mainly in Alaska, North Central British Columbia, and West Coast Vancouver Island fisheries (Table 8). Freshwater recoveries were mainly at hatcheries, with harvest at about ½ or more of the number of recoveries at the hatchery (Table 9). Percent of recoveries above Bonneville Dam was higher for fish released above Bonneville Dam (Table 9).

The 10 year average survival of Rogue River stock fall chinook released at Big Creek and in Youngs Bay was about 0.9% for both programs (Table 3). These fish were caught primarily in Oregon, and secondarily in California and Washington ocean fisheries (Table 8). However, freshwater recoveries were very different for the two groups. Fish released in Big Creek were recovered about 71% at the hatchery, 8% in gillnet fisheries and 16% in sport fisheries (Table 9). Fish released in Youngs Bay were recovered about 9% at the hatchery, 76% in gillnet fisheries and 15% in sport fisheries (Table 9).

Spring Chinook

A variety of stocks of spring chinook are released by ODFW hatcheries in the Columbia Basin. However, the programs can be grouped by release area; Lower River terminal areas, Willamette Basin, and Above Bonneville Dam.

Willamette basin spring chinook stocks are released in Youngs Bay and South Fork Klaskanine River to provide terminal fishery opportunities. The 10 year average survival of these two groups was 0.39% and 0.03% respectively (Table 4). Very few of these fish were caught in ocean fisheries, and most of the freshwater recoveries were in lower river gillnet fisheries (Tables 8 & 9).

The 10 year average survival of hatchery spring chinook released in the Willamette basin ranged from 0.43% for McKenzie Hatchery to 0.55% for Marion

Forks Hatchery (Table 4). Percent survival was generally greater than 1.0% in the 1987 and 1988 brood years, but has been below 1.0% for all brood years at each hatchery since then (Table 4). In the ocean these fish are primarily caught in Alaska fisheries and secondarily caught in North Central British Columbia, West Coast Vancouver Island, and Washington coastal fisheries (Table 8). Freshwater recoveries are predominately at the hatchery and in sport fisheries, with harvest accounting for 40% to 60% of the total freshwater recoveries (Table 9). Freshwater harvest of Marion Forks Hatchery spring chinook is about 63% of the total freshwater recoveries (Table 9), which may be an artifact of the hatchery adult collection methods.

The 10 year average survival of hatchery spring chinook released above Bonneville Dam ranged from 0.01% for fish released in West Fork Hood River to 0.57% for fish released in the Deschutes River (Table 5). Very few of these fish are recovered in ocean fisheries (Table 8). Freshwater recoveries were primarily at hatcheries (Table 9). However, for fish released in the Deschutes River 33% of the total freshwater recoveries were in sport and tribal fisheries (Table 9). Fish released in the Umatilla and Imnaha Rivers had substantial recoveries on spawning ground surveys (Table 9).

Steelhead

The 10 year average survival of hatchery steelhead ranged from 0.26% for winter steelhead released in the East Fork Hood River to 0.50% for summer steelhead released in Big Canyon Creek on the Wallowa River (Table 6). Ocean recoveries of ODFW Columbia Basin hatchery steelhead are rare (Table 8). The 21 ocean recoveries of steelhead tagcodes covered in this reports were in Alaskan (6), British Columbian (13) and Oregon (2) fisheries. Freshwater recoveries were primarily at hatcheries and fish traps, and secondarily in sport and gillnet fisheries above Bonneville Dam (Table 9).

Coho

Releases of coho salmon from ODFW hatcheries in the Columbia basin can be divided into three groups by release location; Above Bonneville Dam, At hatcheries below Bonneville Dam, and Terminal areas in the Columbia Estuary. Average percent survival for the last 10 years ranged from 0.15% to 0.38% for releases above Bonneville Dam, from 1.13% to 1.67% for lower river hatchery releases, and from 1.20% to 2.08% for releases in terminal areas (Table 7).

Ocean recoveries of coho released in all three areas occurred primarily in Oregon and Washington Coastal fisheries, with smaller catches in California and West Coast Vancouver Island fisheries (Table 8). Although ocean recovery patterns are very similar, freshwater recovery patterns are very different for the three release areas. Coho released in estuary terminal areas are predominantly recovered in lower river gillnet and freshwater sport fisheries, with very few hatchery recoveries (Table 9). Most freshwater recoveries of fish released below Bonneville Dam occur at hatcheries. Freshwater harvest of these fish accounts for 15% to 36% of the total freshwater recoveries (Table 9). Percent survival to freshwater harvest of coho released above Bonneville Dam is slightly lower than that of coho released at lower river hatcheries, but the coho released above Bonneville Dam contribute to gillnet fisheries above the dam (Table 9). Coho released above Bonneville Dam also have fewer recoveries at hatcheries and fish traps than coho released at lower river hatcheries. However, this may be at least partly a reflection of differences in sampling locations and techniques rather than differences in survival.

INTRODUCTION

In September 1989 the Oregon Department of Fish and Wildlife received a contract from the Bonneville Power Administration to begin a project of annually coded-wire tagging production groups of anadromous salmonids not currently tagged. Some groups of hatchery production fish were already being tagged by other programs. The Bonneville Power Administration contract consisted of coded-wire tagging the remaining untagged production groups for the future data base. This project began in 1990 to coded-wire tag groups of juvenile anadromous salmon produced at Oregon hatcheries. During 2002 this contract funded approximately 20% of ODFW's Columbia Basin coded-wire tagging.

Tagging will enable evaluation of survival and contribution rates. As the fish mature and are captured in various fisheries or return to release/recapture facilities, they are sampled to recover coded-wire tags. All recoveries of coded-wire tagged fish are reported to the Pacific States Marine Fisheries Commission (PSMFC). Release and recovery information is stored along with sampling and mark/unmarked release ratios. This information is then used to estimate survival rates and catch contribution rates for each production lot of fish reared and released at each hatchery. This data is used to evaluate effectiveness of each hatchery as well as various rearing and release practices. Evaluation of the various hatchery and natural production projects will be needed to measure the effectiveness of any mitigation program and to help direct future efforts in maintaining or enhancing fish runs in the Columbia Basin. This information is also used by salmon harvest managers in developing scenarios that will allow harvest of excess hatchery fish while protecting threatened and endangered natural stocks.

The vision of the Fish and Wildlife Plan (NPPC 2000) is of a Columbia River ecosystem "...that sustains an abundant, productive, and diverse community of fish and wildlife, mitigating across the basin for adverse effects to fish and wildlife caused by the development and operation of the hydro system and providing the benefits from fish and wildlife valued by the people of the region." The Fish and Wildlife Plan is primarily a habitat-based program that focuses on protecting and rebuilding healthy, naturally producing fish and wildlife populations in the Columbia River basin. Although focused on natural production the Fish and Wildlife Plan acknowledges a role for artificial production of fish "...to replace capacity, bolster productivity, and alleviate harvest pressure on weak, naturally spawning resident and anadromous fish populations." The coded-wire tag program is a critical component of the post-release monitoring of artificial production programs. The coded-wire tag project provides data that can be used to assist in addressing some of the basin wide artificial production strategies identified by the Fish and Wildlife Plan, including: using an experimental, adaptive management design; aggressively evaluate risks and benefits; monitor impacts to wild populations (straying, mixed stock fisheries); and reporting on results in relation to the artificial production programs objectives. The coded-wire tag project also assists in the monitoring of in river and ocean fisheries to "...routinely estimate stock composition and age specific abundance, escapement, catch, and age distribution." (NPPC 2000, Basin wide Strategies D. 5. Harvest Monitoring), and can assist in providing information for subbasin assessments, such as "...mainstem survival rates, ocean and in river harvest rates, effects of interactions with fish from other subbasins, and ocean conditions." (NPPC 2000, Subbasins A. 3. Subbasin Assessment)

METHODS AND MATERIALS

The adipose fin clip + coded-wire tag (Jefferts et.al. 1963) was chose as the method of marking because its use is well established in the region, there is a region wide sampling program for this mark, and there is an established

regional data reporting, storing, and access system. In 1989 a committee of agency and tribal scientists recommended the number of fish tagged per group for this project be based on producing a minimum of 30 actual tag recoveries per group. Based on historic levels of survival, harvest, and sampling, the following levels of tagging should meet that goal; tag 25,000 for groups with expected survivals of 0.5% or higher, and tag 50,000 for groups with expected survivals of 0.5% or lower. Some groups of 30,000 are used for Willamette Basin spring chinook to maintain equal sample size with ongoing ODFW research projects funding other tagging at those hatcheries. These levels generally agree with Reisenbichler and Hartmann (1978) who recommended tagging 25,000 fish per group for estimation of fish contribution. However, the increasing complexity of fisheries management regimes requires much higher levels of tagging (Hankin and Mohr 1990).

Objective 1. Insure all ODFW Columbia Basin hatchery coho and chinook production releases have a representative CWT group included in the release. Specific tasks and methods follow:

- a) Determine groups to be tagged and number of fish to tag. This is a three step process. First, all production releases are identified, based on program intent (ongoing regular smolt production), number of fish released (50,000 or more), and fish of an acceptable size (at least 2.0 gm/fish). Second, groups with adequate tagging funded by other sources are eliminated from the list. Finally, the number of fish to tag is determined based on the expected survival, generally 25,000 to 50,000 fish per group.
- b) The identified groups of fish are tagged based on the manufactures recommendations and standard techniques for coded-wire tagging (Jenkinson and Bilton 1981).
- c) Pre-release checks of 500 fish per group (PSC 1995) are made at least 4 weeks after tagging (Blankenship 1981).
- d) All release information is reported to the Pacific States Marine Fisheries Commission and is available on their on-line computer database.

Objective 2. Recover coded-wire tags from snouts of fish tagged under Objective 1. Specific tasks and methods follow:

- a) Snouts collected from marked fish sampled in fisheries, hatcheries, and other recovery areas are frozen and transported to the ODFW Fish Identification head lab in Clackamas, Oregon.
- b) Tags are recovered, read and stored using standard techniques. ODFW tags recovered by other agencies are sent to the Clackams lab for verification.
- c) All recovery information is reported to the Pacific States Marine Fisheries Commission and is available on their on-line computer database.

Objective 3. Prepare annual report. Specific tasks and methods follow:

- a) Compile release and recovery information from all CWT groups released in the Columbia Basin by ODFW.
- b) Calculate total percent survival $[(\text{total estimated recoveries}/\text{number of tagged fish released}) \times 100]$ and percent survival by area $[(\text{total estimated recoveries in each area}/\text{number of tagged fish released}) \times 100]$ for each CWT group. Calculate 10 year averages of the above information by hatchery program (species/stock/release location).
- c) Compile and submit report to BPA by 90 days after end of contract. Report published by BPA.

Objective 4. Evaluate the technical, logistic, and biological feasibility of using alternative marking techniques to mark large numbers of juvenile coho salmon.

- a) Mark one group of 75,000 juvenile coho salmon at Sandy Hatchery. Each fish will receive a code-wire tag (in the snout), adipose fin clip, and visual implant tag (in the jaw).
- b) Collect and record data during hatchery rearing (from tagging through release) including daily mortality, daily amounts fed, monthly fish size, and monthly disease checks.
- c) Pre-release checks of 500 fish per group (PSC 1995) are made at least 4 weeks after tagging (Blankenship 1981).
- d) Coho salmon jacks and adults collected at Sandy Hatchery will be checked for fin clips and visual implant tags. Marked fish will be sampled for gender, length, and have their snouts removed for CWT recovery.

RESULTS

Objective 1. We completed coded-wire tagging and ad-clipping (Ad+CWT) a total of over 1.0 million juvenile 2001 brood spring chinook, fall chinook, and coho salmon (Table 1). The total represents 24 different tag groups. Operational costs for this tagging totaled about \$102,000 (without administrative overhead), or an average of \$99 per thousand fish tagged, ranging from \$49/1,000 to \$123/1,000.

Table 1. Fish tagged and respective estimated operational costs. (January 1, 2002 to December 31, 2002).

Obj.	Act.	Period	Location	Brood	Sp.	CWT'd	Grps	\$/K	Tot. \$
1	1	April, 02	Big Creek	01	CHF	224,469	1	\$113	\$25,441
1	2	April, 02	Bonneville	01	CHF	110,056	2	\$89	\$9,752
1	3	April, 02	Oxbow	01	CHS	61,725	1	\$99	\$6,102
1	4	June, 02	Willamette	01	CHS	32,344	1	\$123	\$3,974
1	5	June, 02	Willamette	01	CHS	31,803	1	\$123	\$3,907
1	6	June, 02	Willamette	01	CHS	56,525	1	\$123	\$6,945
1	7	Aug., 02	South Santiam	01	CHS	57,255	1	\$108	\$6,190
1	8	Aug., 02	Marion Forks	01	CHS	65,887	2	\$106	\$7,013
1	9	Aug., 02	McKenzie	01	CHS	62,036	2	\$112	\$6,953
1	10	May, 02	Big Creek	01	Coho	55,286	2	\$63	\$3,459
1	11	Oct., 02	Bonneville	01	Coho	27,163	1	\$96	\$2,604
1	12	Aug., 02	Cascade	01	Coho	82,438	3	\$62	\$5,150
1	13	Aug., 02	Oxbow	01	Coho	54,434	2	\$49	\$2,641
1	14	Oct., 02	S Fk Klaskanine	01	Coho	26,478	1	\$120	\$3,174
1	15	Oct., 02	Sandy	01	Coho	28,056	1	\$103	\$2,890
1	16	Oct., 02	Sandy	01	Coho	56,295	2	\$103	\$5,799
			Totals			1,032,250	24	\$99	\$101,992

Objective 2. During 2002 we completed processing a total of 51,720 tags at the laboratory in Clackamas. The total consisted of fish from sport, commercial, tribal, hatchery, spawning ground surveys, and miscellaneous other fisheries (Table 2). During 2002 we verified 903 ODFW tags recovered and returned to ODFW by other agencies.

Objective 3. A summary of available coded-wire tag release and recovery information for each group of Ad+CWT tagged fish released from Oregon Department of Fish and Wildlife hatcheries in the Columbia Basin is presented in Appendix A. This includes Ad+CWT tagged fish funded by this contract as well as Ad+CWT tagged fish funded from other sources. Data in Appendix A covers the last 10 brood years with complete recovery data. Recovery data is

available through the 2001 return year. This equates to complete recovery data for the 1987 through 1996 brood years for chinook salmon, 1988 through 1997 brood years for steelhead, and 1989 through 1998 brood years for coho salmon.

Objective 4. Results are reported in Appendix B.

Table 2. CWT's processed at Clackamas. (Jan. 2002 to Dec. 2002)

Fishery	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	2002 Total
River Sport	759	341	334	0	0	13	1,635	274	50	468	398	14	4,286
Hatchery	4,352	7,556	242	48	0	0	1,280	3,525	3,755	1,147	1,732	1,282	24,919
Spawning Ground	37	499	0	0	0	3	0	787	476	89	661	1,000	3,552
Treaty Gillnet	1,828	0	0	0	0	0	856	0	0	0	0	0	2,684
Non-Treaty Gillnet	0	50	0	2,409	0	0	0	0	0	29	0	0	2,488
Youngs Bay Gillnet	0	0	12	149	0	0	393	15	0	0	1,177	0	1,746
Terminal Gillnet	0	236	1	0	0	0	0	0	0	0	0	0	237
Ocean Sport/Troll	166	0	0	0	0	0	4,169	1,135	825	1,957	0	797	9,049
Estuary Sport	1,341	0	0	0	0	0	0	0	0	348	0	68	1,757
Whiting By-Catch	0	0	0	34	0	0	0	0	0	0	0	0	34
Ceremonial/Subsist	0	0	0	11	0	0	11	0	0	0	946	0	968
Columbia R Test	0	0	0	0	0	0	0	0	0	0	0	0	0
Smolt Recoveries	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	8,483	8,682	589	2,651	0	16	8,344	5,736	5,106	4,038	4,914	3,161	51,720
Verifications	0	0	137	0	0	0	126	0	0	640	0	0	903

DISCUSSION

The following discussion section consists of two parts: 1) Tables of percent survival data for all programs (total survival, survival to ocean fishery areas, and survival to freshwater recovery areas); 2) Discussions of results for each individual ODFW Columbia Basin hatchery.

The following estimates of percent survival are based on releases of Ad+CWT marked juvenile hatchery salmonids and their subsequent recovery as adults, in ocean and freshwater fisheries, at hatcheries or fish traps, and on spawning grounds. This includes Ad+CWT tagged fish funded by this contract as well as Ad+CWT tagged fish funded from other sources. Percent survival is calculated as (total estimated recoveries/number of tagged fish released)*100. The estimated brood year percent survival is the percent survival of the Ad+CWT group representing that brood year for that production group. When more than one Ad+CWT group is available for a brood year the brood year percent survival is calculated as the weighted average of the Ad+CWT groups. Percent survival estimates are weighted by the total number of fish, both marked and unmarked, associated with each Ad+CWT group.

In using the recovery data in this report several cautions need to be kept in mind. (1) The estimated survivals are minimum survivals. Some CWT fish are caught or escape to areas that are not sampled, or are not sampled in a way that allows for estimation of the total number of CWT fish in that area. (2) Spawning ground recoveries of Ad+CWT fish are generally not expanded. Only the number of observed recoveries is available. (3) Most freshwater fisheries outside of the Columbia River system are not sampled. (4) The reduced salmon

fishing seasons of the recent years have the potential to bias survival estimates. Reduced harvest should result in increased escapement. However, not all escapement areas are sampled, or sampled equally. Some hatchery traps include a barrier across the stream while others rely on fish swimming in without any barrier. Also, some groups of fish are/were released in off-site areas without adult recapture facilities (i.e. coho salmon reared at Big Creek Hatchery and released in the Tualatin River).

Table 3. Estimated 1987 through 1996 brood year percent survival for ODFW hatchery fall chinook programs in the Columbia Basin. Programs are identified by hatchery, stock, and release site. URB = Upriver Bright Stock.

Brood Year	CEDC Rogue Youngs Bay	Big Cr Rogue Big Cr	Big Cr Tules Big Cr	Stayton Tules Willamette R	Bonneville Tules Tanner Cr	Bonneville URB Tanner Cr	Bonneville URB Umatilla R	Umatilla URB Umatilla R
1987	3.02%	2.25%	0.05%	0.13%	0.02%	0.27%	0.50%	
1988		1.39%	0.17%	0.16%	0.22%	0.13%		
1989	1.37%	0.78%	0.12%	0.68%	0.15%	0.25%		
1990		0.78%	0.09%	0.16%	0.12%	0.29%	0.02%	
1991	0.15%	0.51%	0.17%	0.01%	0.03%	0.06%	0.04%	0.00%
1992		1.56%	0.08%	0.00%	0.03%	0.36%	0.26%	0.06%
1993	1.18%	0.61%	0.28%	0.02%	0.05%	0.51%	0.18%	0.08%
1994	0.19%	0.32%	0.07%	0.06%	0.04%	0.05%	0.20%	0.00%
1995	0.24%	0.17%	0.03%		0.02%	0.21%		0.13%
1996	0.10%		0.20%			0.02%	0.13%	0.05%
Avg.	0.89%	0.93%	0.13%	0.15%	0.08%	0.22%	0.19%	0.05%
<i>Min</i>	<i>0.10%</i>	<i>0.17%</i>	<i>0.03%</i>	<i>0.00%</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.00%</i>
<i>Max</i>	<i>3.02%</i>	<i>2.25%</i>	<i>0.28%</i>	<i>0.68%</i>	<i>0.22%</i>	<i>0.51%</i>	<i>0.50%</i>	<i>0.13%</i>

Table 4. Estimated 1987 through 1996 brood year percent survival for ODFW spring chinook programs in the Columbia Basin below Bonneville Dam. Programs are identified by hatchery, stock, and release site. Various = Different Willamette Basin spring chinook stocks used in different years.

Brood Year	Clackamas Clackamas	Clackamas Clackamas Sandy	Marion Forks N Santiam N Santiam	McKenzie McKenzie McKenzie	S Santiam S Santiam S Santiam	Willamette M Fk Will. M Fk Will.	CEDC Various Youngs Bay	CEDC Various SF Klaskanine
1987	0.86%		1.51%	1.12%	1.27%	0.72%		
1988	1.16%		1.18%	1.12%	0.22%	1.07%	0.43%	0.00%
1989	0.50%		0.60%	0.34%	0.74%	0.73%	0.10%	0.04%
1990	0.46%		0.17%	0.11%	0.42%	0.44%	0.15%	0.02%
1991	0.22%	0.08%	0.36%	0.22%	0.35%	0.41%	0.00%	0.02%
1992	0.26%	0.05%	0.15%	0.18%	0.18%	0.34%	0.36%	0.03%
1993	0.44%	0.13%	0.25%	0.19%	0.30%	0.51%	0.75%	0.07%
1994	0.45%	0.26%	0.29%	0.23%	0.35%	0.42%	0.16%	0.02%
1995	0.44%	0.12%	0.39%	0.30%	0.56%	0.19%	0.10%	0.04%
1996	0.47%	0.37%	0.62	0.44%	0.47%	0.77%	1.50%	
Avg.	0.53%	0.17%	0.55%	0.43%	0.49%	0.56%	0.39%	0.03%
<i>Min</i>	<i>0.22%</i>	<i>0.05%</i>	<i>0.15%</i>	<i>0.11%</i>	<i>0.18%</i>	<i>0.19%</i>	<i>0.00%</i>	<i>0.00%</i>
<i>Max</i>	<i>1.16%</i>	<i>0.37%</i>	<i>1.51%</i>	<i>1.12%</i>	<i>1.27%</i>	<i>1.07%</i>	<i>1.50%</i>	<i>0.07%</i>

Table 5. Estimated 1987 through 1996 brood year percent survival for ODFW spring chinook programs in the Columbia Basin above Bonneville Dam. Programs are identified by hatchery, stock, and release site.

Brood Year	Round Butte Deschutes Deschutes R	Round Butte Deschutes W F Hood R	Umatilla Carson Umatilla R	Lookingglass Rapid River Lookingglass Cr	Lookingglass Imnaha Imnaha R
1987	1.42%			0.04%	0.16%
1988	1.71%			0.35%	0.35%
1989	0.78%			0.11%	0.12%
1990	0.29%			0.04%	0.02%
1991	0.32%	0.00%	0.00%	0.03%	0.01%
1992	0.47%		0.01%	0.09%	0.01%
1993	0.10%		0.08%	0.09%	0.08%
1994	0.08%	0.01%	0.00%	0.05%	0.02%
1995	0.30%	0.03%	0.64%	0.33%	0.18%
1996	0.18%	0.00%	0.25%	0.24%	0.24%
Avg.	0.57%	0.01%	0.16	0.14%	0.12%
<i>Min</i>	<i>0.08%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>0.03%</i>	<i>0.01%</i>
<i>Max</i>	<i>1.71%</i>	<i>0.03%</i>	<i>0.64%</i>	<i>0.35%</i>	<i>0.35%</i>

Table 6. Estimated 1988 through 1997 brood year percent survival for ODFW steelhead programs in the Columbia Basin. Programs are identified by hatchery, stock, and release site.

Brood Year	Umatilla Summer Umatilla Umatilla R	Irrigon Summer Imnaha Little Sheep Cr	Irrigon Summer Wallowa Big Canyon Cr	Irrigon Summer Wallowa Spring Cr	Oak Springs Winter Hood R E Fk Hood R
1988		0.26%		0.21%	
1989		1.01%		0.96%	
1990		1.04%	0.95%	1.08%	
1991	0.08%	0.01%	0.10%	0.08%	
1992	0.39%	0.23%	0.35%	0.27%	
1993	0.37%	0.22%	0.79%	0.74%	0.36%
1994	0.98%	0.46%	0.61%	0.43%	0.38%
1995	0.36%	0.35%	0.63%	0.55%	0.05%
1996	0.28%	0.25%	0.27%	0.24%	
1997	0.47%	0.34%	0.32%	.035%	
Avg.	0.42%	0.42%	0.50%	0.49%	0.26%
<i>Min</i>	<i>0.08%</i>	<i>0.01%</i>	<i>0.10%</i>	<i>0.08%</i>	<i>0.05%</i>
<i>Max</i>	<i>0.98%</i>	<i>1.04%</i>	<i>0.95%</i>	<i>1.08%</i>	<i>0.38%</i>

Table 7. Estimated 1989 through 1998 brood year percent survival for ODFW coho programs in the Columbia Basin. Programs are identified by hatchery, stock, and release site. n.a. = not available at the time report was written, due to problems with an expansion factor.

Brood Year	CEDC Tanner Cr Youngs Bay	CEDC Clackamas R Youngs Bay	CEDC Klaskanine R SF Klaskanine R	CEDC Tanner Cr Blind Sl.	CEDC Tanner Cr Tongue Pt.	Big Cr Big Cr Big Cr	Bonneville Tanner Cr Tanner Cr	Sandy Sandy R Sandy R	Cascade Tanner Cr Umatilla R	Cascade Tanner Cr Yakima R
1989		1.24%	0.54%			2.84%	2.05%	3.11%	0.17%	0.15%
1990			3.09%			0.21%	0.88%	0.07%	0.81%	0.07%
1991	2.89%	0.72%	0.63%			0.94%	2.25%	0.90%	0.21%	0.05%
1992	1.32%	0.58%	0.62%			0.73%	0.42%	0.45%	0.24%	0.13%
1993	0.69%	0.27%	0.97%	1.95%	3.09%	0.77%	0.86%	0.33%	0.06%	0.09%
1994	0.45%	1.44%	0.50%	1.30%	0.90%	0.91%	1.41%	0.32%	0.05%	0.08%
1995	1.46%		1.73%	0.07%	0.53%	0.56%	0.51%	0.68%	0.40%	0.21%
1996	1.12%	0.94%	0.99%	1.66%	4.00%	0.50%	0.61%	0.46%	0.38%	0.18%
1997	0.85%	1.41%	0.51%	2.01%	1.59%	1.57%	1.52%	1.87%	0.26%	0.43%
1998	2.17%	2.99%	5.28	n.a.	2.39%	4.95%	6.14%	3.09%	1.17%	
Avg.	1.37%	1.20%	1.49%	1.40%	2.08%	1.40%	1.67%	1.13%	0.38%	0.15%
<i>Min</i>	0.45%	0.27%	0.50%	0.07%	0.53%	0.21%	0.42%	0.07%	0.05%	0.05%
<i>Max</i>	2.89%	2.99%	5.28%	2.01%	4.00%	4.95%	6.14%	3.11%	1.17%	0.43%

Table 8. Average percent survival to ocean recovery area for ODFW hatchery programs in the Columbia Basin. Data are for the last ten completed brood years, chinook 1987-1996, steelhead 1988-1997, and coho 1989-1998. AK = Alaska, NCBC = North Central British Columbia, WCVI = West Coast Vancouver Island, GST = Georgia Strait, PS = Puget Sound, WA = Washington Coast, CA = California.

Stock Group	AK	NCBC	WCVI	GST	PS	WA	Oregon Ocean Catch Area ^a					CA
							1&2	3	4	5	6&7	
FALL CHINOOK SALMON												
CEDC (Rogue) ^b	0.00	0.00	0.01	0.00	0.00	0.04	0.01	0.01	0.17	0.15	0.01	0.04
Big Cr (Rogue) ^b	0.00	0.00	0.02	0.00	0.00	0.05	0.01	0.03	0.19	0.10	0.01	0.04
Big Cr (Tule)	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Stayton Pond ^b	0.00	0.00	0.03	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00
Bonneville (Tule)	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Bonneville (URB)	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bonn. (Umatilla)	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Umatilla ^b	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SPRING CHINOOK SALMON												
CEDC (Youngs Bay)	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CEDC (SF Klask.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clackamas	0.04	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Sandy River ^b	0.08	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
Marion Forks	0.07	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
McKenzie	0.04	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
South Santiam	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Willamette	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Round Butte	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W Fk Hood River ^b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Umatilla ^b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lookingglass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Imnaha River	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COHO SALMON												
CEDC (Clack. Stk)	0.00	0.00	0.01	0.00	0.00	0.06	0.02	0.01	0.03	0.02	0.00	0.00
CEDC (Sandy Stk)	0.00	0.00	0.00	0.00	0.00	0.07	0.04	0.00	0.02	0.01	0.00	0.00
CEDC (Tanner Stk)	0.00	0.00	0.01	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00
CEDC (SF Klask.)	0.00	0.00	0.01	0.00	0.00	0.11	0.03	0.01	0.03	0.02	0.00	0.02
CEDC (Blind Sl) ^b	0.00	0.00	0.01	0.00	0.00	0.04	0.02	0.00	0.01	0.01	0.00	0.00
CEDC (Tongue Pt)	0.00	0.00	0.01	0.00	0.01	0.08	0.04	0.01	0.02	0.01	0.00	0.00
Big Creek	0.00	0.00	0.01	0.00	0.00	0.05	0.02	0.01	0.06	0.06	0.00	0.00
Bonneville	0.00	0.00	0.01	0.00	0.00	0.08	0.04	0.01	0.04	0.04	0.00	0.01
Sandy	0.00	0.00	0.01	0.00	0.00	0.09	0.03	0.01	0.07	0.05	0.00	0.00
Umatilla River	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.01	0.01	0.00	0.01
Yakima River ^b	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.01	0.00	0.00	0.00
SUMMER STEELHEAD												
Umatilla River ^b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Little Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Big Canyon Creek	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spring Creek	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

a = Oregon ocean areas displayed in Figure 1.
 ten years.

b = Does not include data from all

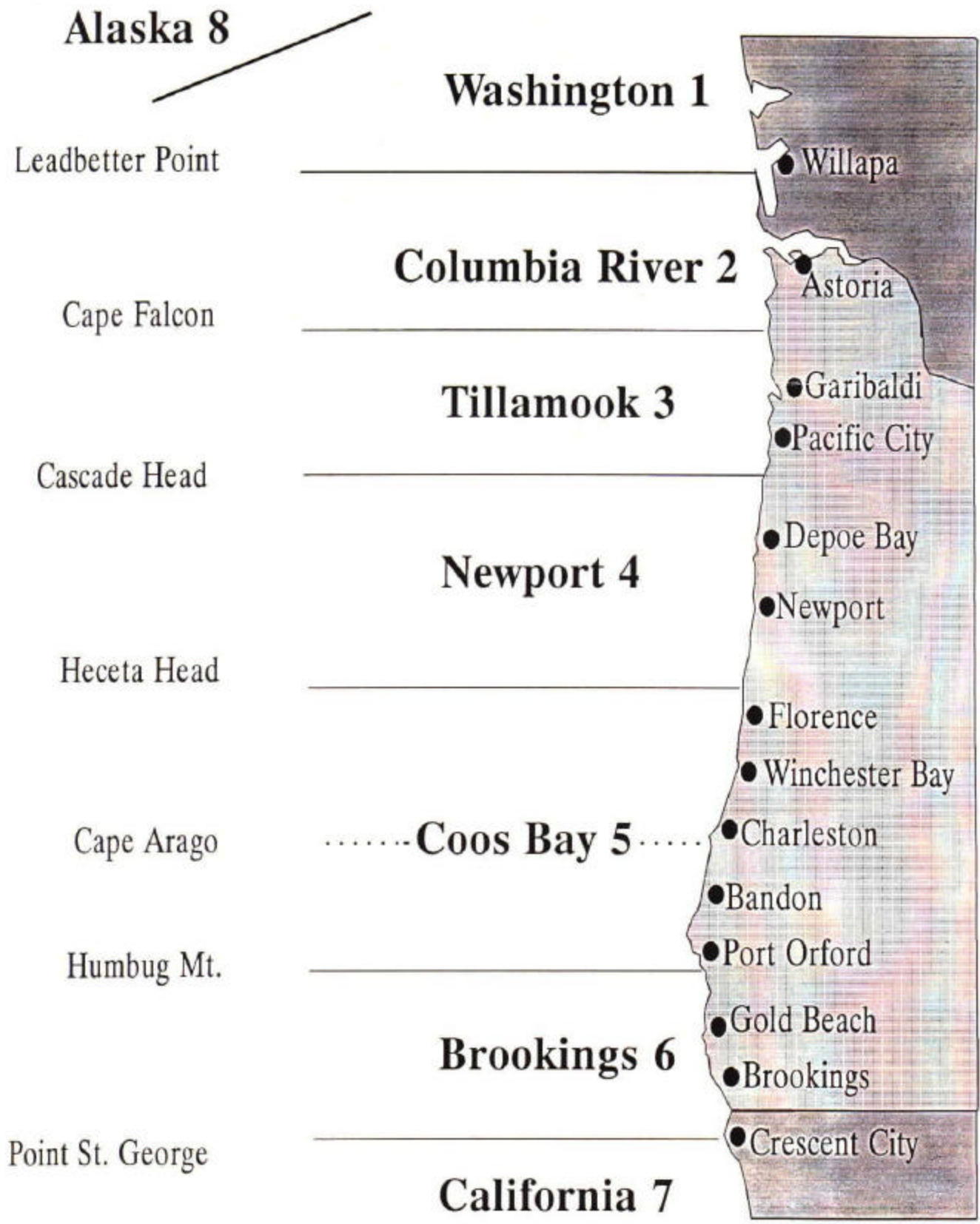


Figure 1. Catch areas for Oregon ocean salmon fisheries.

Table 9. Average percent survival to freshwater recovery area for ODFW hatchery programs in the Columbia Basin. Data are for the last ten completed brood years, chinook 1987-1996, steelhead 1988-1997, and coho 1989-1998. Gillnet above and below are in relation to Bonneville Dam. Tribal is tribal subsistence and ceremonial. SGS is spawning ground survey. Other is miscellaneous recoveries, mostly seine.

Stock Group	Sport	Gillnet	Gillnet	Tribal	Hatcher	SGS	Other
		Below	Above				
FALL CHINOOK SALMON							
CEDC (Rogue) ^a	0.07	0.35	0.00	0.00	0.04	0.00	0.00
Big Cr (Rogue) ^a	0.08	0.04	0.00	0.00	0.35	0.02	0.00
Big Cr (Tule)	0.01	0.01	0.00	0.00	0.05	0.01	0.00
Stayton Pond ^a	0.01	0.00	0.00	0.00	0.07	0.00	0.00
Bonneville (Tule) ^a	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Bonneville (URB)	0.01	0.02	0.02	0.00	0.09	0.01	0.00
Bonn. (Umatilla) ^a	0.01	0.01	0.02	0.00	0.10	0.00	0.00
Umatilla ^a	0.00	0.00	0.01	0.00	0.02	0.00	0.00
SPRING CHINOOK SALMON							
CEDC (Youngs Bay) ^a	0.01	0.34	0.00	0.00	0.02	0.00	0.00
CEDC (SF	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Clackamas	0.18	0.01	0.00	0.00	0.26	0.00	0.00
Sandy River ^a	0.02	0.01	0.00	0.00	0.02	0.00	0.00
Marion Forks	0.26	0.03	0.00	0.00	0.17	0.00	0.00
McKenzie	0.14	0.02	0.00	0.00	0.20	0.00	0.00
South Santiam	0.17	0.03	0.00	0.00	0.21	0.00	0.00
Willamette	0.18	0.01	0.00	0.00	0.32	0.00	0.00
Round Butte	0.15	0.00	0.00	0.04	0.38	0.00	0.00
W Fk Hood River ^a	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Umatilla ^a	0.01	0.00	0.00	0.00	0.09	0.05	0.00
Lookingglass	0.00	0.00	0.00	0.01	0.11	0.01	0.00
Imnaha River	0.00	0.00	0.00	0.00	0.09	0.03	0.00
COHO SALMON							
CEDC (YB-Clack.	0.12	0.93	0.00	0.00	0.01	0.00	0.00
CEDC (YB-Sandy Stk)	0.10	1.10	0.00	0.00	0.01	0.00	0.00
CEDC (YB-Tanner	0.07	1.18	0.00	0.00	0.01	0.00	0.00
CEDC (SF Klask.)	0.10	0.96	0.00	0.00	0.21	0.00	0.00
CEDC (Blind Sl) ^a	0.09	1.24	0.00	0.00	0.01	0.00	0.00
CEDC (Tongue Pt) ^a	0.22	1.65	0.00	0.00	0.04	0.00	0.00
Big Creek	0.11	0.31	0.00	0.00	0.75	0.00	0.00
Bonneville	0.18	0.04	0.00	0.00	1.23	0.00	0.00
Sandy	0.13	0.06	0.00	0.00	0.66	0.00	0.00
Umatilla River	0.08	0.04	0.02	0.00	0.16	0.00	0.00
Yakima River ^a	0.04	0.01	0.02	0.00	0.02	0.00	0.00
SUMMER STEELHEAD							
Umatilla River ^a	0.07	0.00	0.03	0.00	0.31	0.01	0.00
Little Sheep Creek	0.09	0.00	0.09	0.00	0.23	0.00	0.00
Big Canyon Creek ^a	0.22	0.00	0.10	0.00	0.19	0.00	0.00
Spring Creek	0.17	0.00	0.14	0.00	0.18	0.00	0.00

a = Does not include data from all ten years.

Big Creek Hatchery

Big Creek Hatchery is located 2 miles south of Knappa off Highway 30 near the mouth of the Columbia River. The hatchery, originally built in 1939-41, rears and releases tule and Rogue fall chinook, coho salmon, and winter steelhead. The winter steelhead have not been marked with coded-wire tags for evaluation.

Tule stock fall chinook 1987 to 1996 broods percent survival averaged 0.13%, and ranged from 0.03% to 0.28% (Table 3). Survival has been consistently low over the last 10 brood years (Figure 2). Ocean catch was primarily in West Coast Vancouver Island and Washington Coastal fisheries (Table 8). Freshwater recoveries were mainly at hatcheries, with freshwater sport and lower river gillnet catch each composing 13% of the total freshwater recoveries (Table 9).

Experimental releases of Rogue River stock fall chinook at Big Creek began in 1983. Good survival and contribution rates to Oregon fisheries resulted in expansion of the program. Rogue River stock fall chinook, 1987 to 1996 broods, percent survival averaged 0.93%, and ranged from 0.17% to 2.25% (Table 3). Survival has generally declined over the last 10 brood years (Figure 2). Ocean catch was primarily in Oregon fisheries, with smaller contributions to California and Washington Coastal fisheries (Table 8). Freshwater recoveries were mainly at hatcheries, with freshwater sport and lower river gillnet catch composing 24% of the total freshwater recoveries (Table 9). Beginning with the 1995 brood the release site was switched to Klaskanine Hatchery, to reduce straying.

The 1989 to 1998 brood Big Creek stock coho released in Big Creek survived at an average rate of 1.40%, and ranged from 0.21% to 4.95% (Table 7). Coho survival was generally low for the 1990 to 1996 broods, but has increased since the 1997 brood (Figure 2). Ocean catch was mainly in Oregon and Washington coastal fisheries (Table 8). Freshwater recoveries were 64% hatchery returns and 36% sport and lower river gillnet catch (Table 9). The same coho stock released in the Tualatin River survived at an average rate of 0.04% for the 1991 to 1996 broods. Releases in the Tualatin River were discontinued after the 1996 brood.

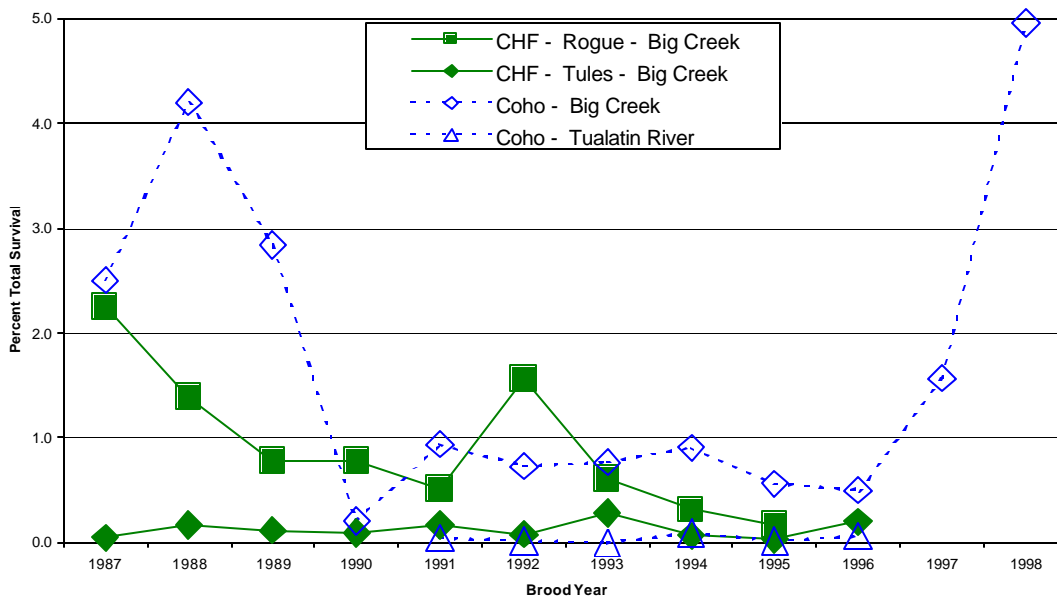


Figure 2. Percent survival by brood year for Big Creek Hatchery programs.

Klaskanine Hatchery

Klaskanine Hatchery is located 21 miles southeast of Astoria, Oregon on Highway 202 adjacent to the Klaskanine River. The hatchery, originally built in 1913, was expanded and remodeled in 1953. Budget cuts have reduced hatchery staffing to 1 person and eliminated all rearing programs. Historically, the hatchery reared tule fall chinook, coho and winter steelhead. Presently, the hatchery serves as an acclimation and adult recapture facility for Rogue stock fall chinook and Big Creek stock winter steelhead. The winter steelhead have not been marked with coded-wire tags for evaluation.

Rogue Stock fall chinook releases began with the 1995 brood. Average survival for the 1995 to 1996 brood years was 0.29%, which is comparable to the same stock released in other lower Columbia River areas (Appendix A).

The tule fall chinook program was discontinued after the 1988 brood year, and the coho program was discontinued after the 1994 brood year. Release and recovery data for Klaskanine Hatchery 1986 to 1988 brood fall chinook and 1988 to 1994 brood coho CWT groups is reported in Appendix A.

Clatsop Economic Development Commission (CEDC)

CEDC operates freshwater ponds and estuary net pens in Youngs Bay and adjacent areas near Astoria, Oregon. CEDC releases coho and chinook salmon in cooperation with ODFW hatcheries.

Tule fall chinook production was discontinued after the 1987 brood year. Experimental releases of Rogue stock fall chinook in Blind Slough and Tongue Point were begun with the 1995 brood year. Upriver Bright stock fall chinook were released in Youngs Bay (1994 brood) and at Tongue Point (1995 brood). Release and recovery data for CWT groups associated with all of these programs is reported in Appendix A.

Rogue River stock fall chinook released in Youngs Bay/South Fork Klaskanine River (1987 to 1996 broods) survived at an average rate of 0.89% and ranged from 0.10% to 3.02% (Table 3). Survival has generally declined over the last 10 brood years (Figure 3). Ocean catch was primarily in Oregon fisheries, with smaller contributions to California and Washington Coastal fisheries (Table 8). Freshwater recoveries were primarily in lower river gillnet fisheries (Table 9).

Release of Willamette Basin spring chinook by CEDC began with the 1988 brood. A variety of different Willamette Basin stocks have been used over the years. The original releases were in Youngs Bay and South Fork Klaskanine River. The program was expanded to Blind Slough and Tongue Point beginning with the 1994 brood year. Release and recovery data for Blind Slough and Tongue Point release CWT groups are reported in Appendix A. Spring chinook released in Youngs Bay (1988 to 1996 broods) survived at an average rate of 0.39% and ranged from 0.00% to 1.50% (Table 4). Spring chinook released in South Fork Klaskanine River (1988 to 1995 broods) survived at an average rate of 0.03% and ranged from 0.00% to 0.07% (Table 4). Generally, survival of spring chinook released in the estuary terminal areas was below 0.5% (Figure 3), and is less than the survival of spring chinook released at the Willamette Basin hatcheries (Table 4). The very few spring chinook released by CEDC that are recovered in the ocean are caught primarily in Alaskan ocean fisheries (Table 8). Freshwater recoveries are primarily in lower river gillnet fisheries, with a small number recovered at hatcheries (Table 9).

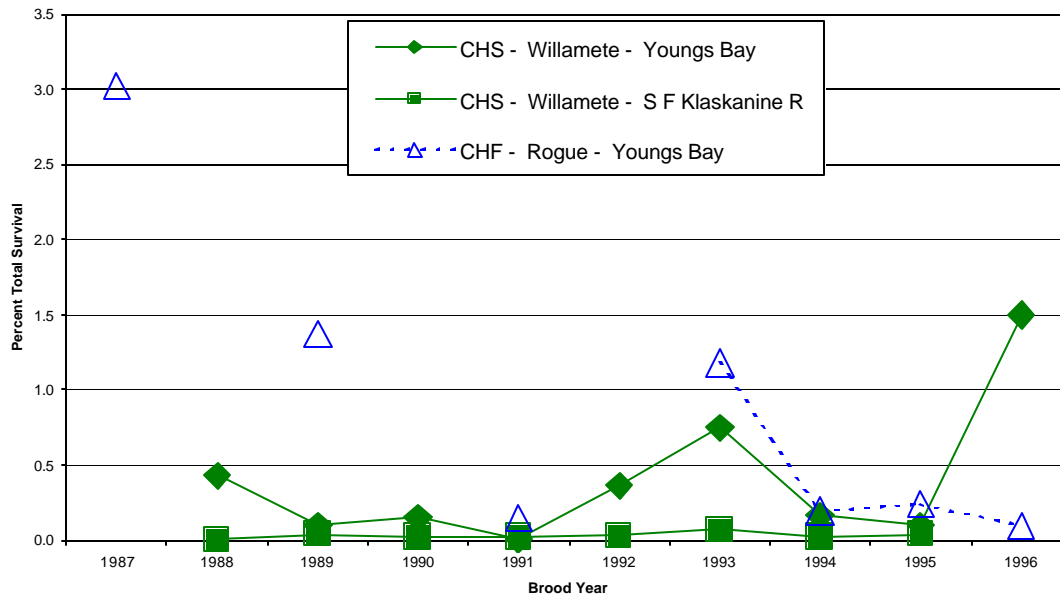


Figure 3. Percent survival by brood year for CEDC chinook programs.

Releases of coho salmon in Columbia Estuary terminal areas use a variety of stocks and release locations (Appendix A). Using data for five of the longer-term CEDC coho stock/release site data sets (brood years 1989 through 1998) 10 year average survival ranged from 1.20% to 2.08% (Table 7). Survival has been decreasing over the last 10 brood years, but improved with the 1998 brood year (Figure 4). Survival of coho released by CEDC is generally higher than that seen for the same stocks released from ODFW lower Columbia hatcheries (Table 7). Ocean catch of CEDC coho is very similar to that of coho salmon from ODFW lower Columbia hatcheries, mainly in Oregon and Washington coastal fisheries (Table 8). Percent survival to freshwater sport fisheries is very similar for CEDC and other ODFW Columbia Basin coho programs (Table 9). However, coho released by CEDC have much higher recoveries in gillnet fisheries and much lower recoveries at hatcheries than the same stocks released from ODFW Columbia Basin hatcheries (Table 9).

Gnat Creek Hatchery

Gnat Creek Hatchery is located east of Knappa off Highway 30 on Gnat Creek a tributary to the Lower Columbia River. Gnat Creek Hatchery released summer and winter steelhead and cutthroat trout, none of which were coded-wire tagged for evaluation. Due to budget cuts the hatchery was switched in 1996 to rearing Willamette Basin stock spring chinook for acclimation and release in lower Columbia River net pens in cooperation with CEDC. For discussion of these programs see the CEDC section above.

Eagle Creek National Fish Hatchery

Eagle Creek National Fish Hatchery (NFH) is located on Eagle Creek a tributary of the Clackamas River southeast of Portland. Eagle Creek NFH presently rears and releases coho salmon in Eagle Creek. Additional coho are reared for ODFW, and are transported to the CEDC net pens for acclimation in Youngs Bay near Astoria. For results of the Youngs Bay releases see the CEDC section above.

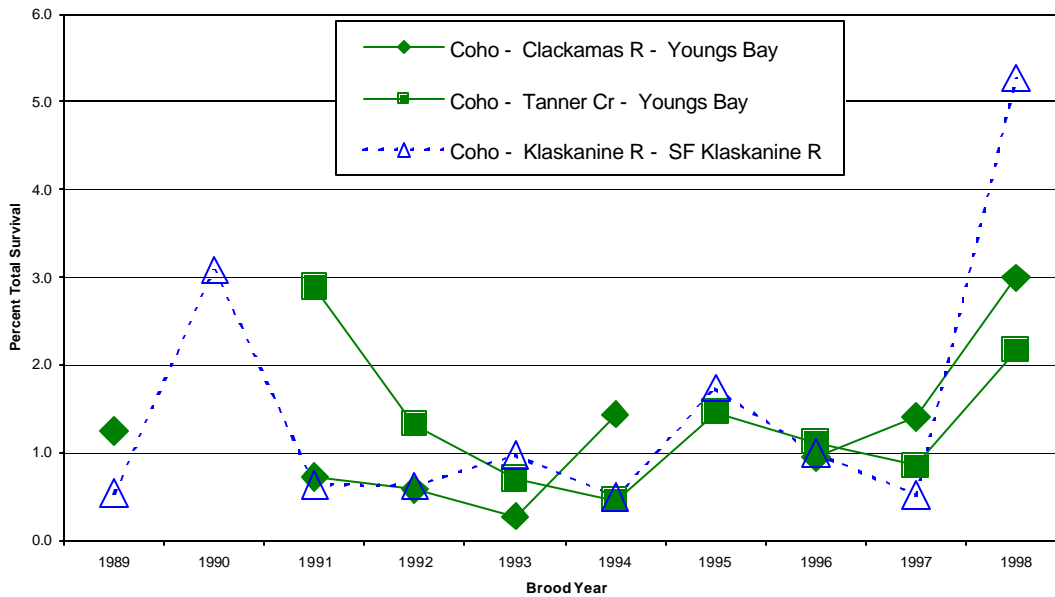


Figure 4. Percent survival by brood year for CEDC coho programs.

Clackamas Hatchery

Clackamas Hatchery is located on the Clackamas River 4 miles west of Estacada near McIver Park. Clackamas Hatchery rears and released spring chinook salmon, summer and winter steelhead. Due to water quality and quantity limits, eggs collected at Clackamas Hatchery are sent to other hatcheries for incubation and early rearing. Steelhead eggs go to Irrigon and Oak Springs hatcheries. Spring chinook eggs go to Willamette and Oxbow for incubation and then to Marion forks for rearing. Juveniles are then returned to Clackamas for final rearing and release. None of the Clackamas Hatchery summer and winter steelhead releases have been marked with coded-wire tags for evaluation.

The 1987 to 1996 brood Clackamas River stock spring chinook released in the Clackamas River survived at an average rate of 0.53% and ranged from 0.22% to 1.16% (Table 4). The same stock released in the Sandy River (1991 to 1996 broods) survived at an average rate of 0.17% and ranged from 0.05% to 0.37% (Table 4). For the 1987 to 1995 brood years Clackamas Hatchery spring chinook survival had 2 high survival broods (about 1.0%, 1988 and 1989), 2 low survival broods (about 0.2%, 1991 and 1992), and was fairly consistent at about 0.5% in the remaining years (Figure 5). The same stock of hatchery spring chinook released in the Sandy River showed a similar pattern in survival but the absolute values were lower (Figure 5). This is most likely the result of much lower levels of sampling for CWT spring chinook in the Sandy Basin.

Ocean recoveries of the two groups were fairly similar, predominately in Alaskan and Canadian (West Coast Vancouver Island and North Central British Columbia) fisheries (Table 8). Freshwater recoveries are mainly at hatcheries and fish traps, with freshwater sport and lower river gillnet fisheries accounting for 40% to 60% of the total freshwater recoveries for the Clackamas and Sandy release groups, respectively (Table 9).

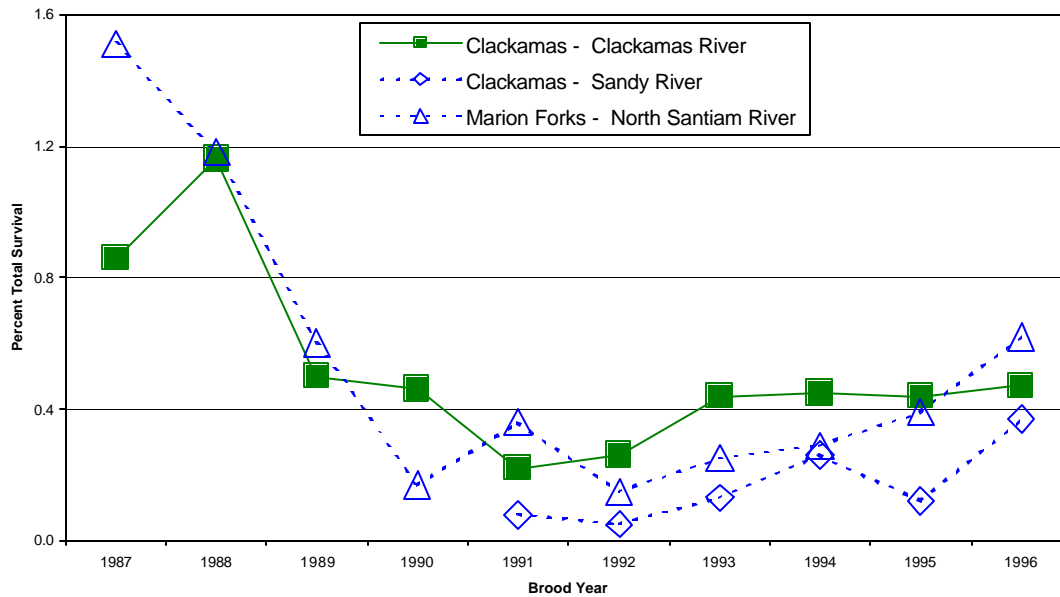


Figure 5. Percent survival by brood year for Clackamas and Marion Forks Hatchery programs.

Marion Forks Hatchery

Marion Forks Hatchery is located on the North Santiam River 10 miles east of Idana on Highway 22. Marion Forks Hatchery rears and releases spring chinook salmon, winter steelhead, rainbow and cutthroat trout. Although prior brood years of winter steelhead have been coded-wire tagged, none were tagged for the current 10 brood years. All other rainbow and cutthroat trout released by the Marion Forks Hatchery were not coded-wire tagged for evaluation.

The 1987 to 1996 brood years of Marion Forks spring chinook survived at an average rate of 0.55% and ranged from 0.15% to 1.51% (Table 4). During this time period this was the second highest average survival for all the Willamette Basin hatchery spring chinook programs. Survival for Marion Forks Hatchery spring chinook declined from the 1986 to 1990 brood years and has stayed below 0.4% until the 1996 brood year (Figure 5). There is an increasing trend in survival since the 10 year survival low of 0.15% for the 1992 brood (Figure 5).

Ocean recoveries of these spring chinook are almost exclusively in Alaskan and North Central British Columbia fisheries (Table 8). Marion Forks spring chinook had the highest average percent survival to freshwater sport and lower river gillnet fisheries, but the lowest average percent survival to hatchery returns of all the Willamette Basin hatchery spring chinook programs (Table 9). Freshwater catch (sport and gillnet combined) composed 63% of the average freshwater recoveries for Marion Forks Hatchery spring chinook. This is much higher than the 37% to 49% seen for the other Willamette Basin hatchery spring chinook programs (Table 9). This difference is most likely related to adult collection methods at the hatcheries. Marion Forks Hatchery only collects adult spring chinook in the fall. The other Willamette Basin spring chinook hatcheries initially open their adult traps in the summer, close them in late summer and then re-open the traps in the fall, just prior to spawning.

South Santiam Hatchery

South Santiam Hatchery is located below Foster Dam on the South Santiam River near Sweet Home. South Santiam Hatchery rears and releases spring chinook salmon and summer steelhead. Summer steelhead released by South Santiam Hatchery have not been coded-wire tagged to permit evaluation.

The 1987 to 1996 brood South Santiam spring chinook survived at an average rate of 0.49% and ranged from 0.18% to 1.27% (Table 4). Survival declined from the 1986 to 1992 brood years, but has shown a slight increasing trend since the 10 year survival low of 0.18% for the 1992 brood (Figure 6).

Ocean recoveries of these spring chinook are almost exclusively in Alaskan and North Central British Columbia fisheries (Table 8). South Santiam Hatchery spring chinook freshwater recoveries are mainly hatchery returns (Table 9). Freshwater catch (sport and lower river gillnet combined) composed 49% of the average freshwater recoveries for South Santiam Hatchery spring chinook.

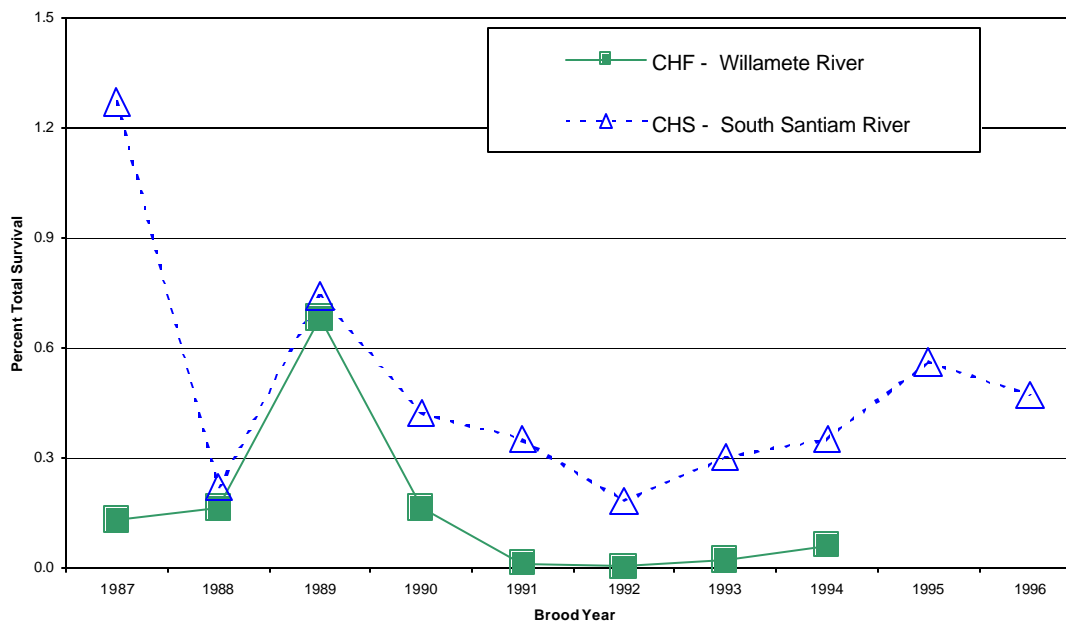


Figure 6. Percent survival by brood year for South Santiam Hatchery programs.

Stayton Rearing Pond

Stayton Pond, a refurbished gravel pit located south of Stayton, was operated as a satellite of the South Santiam Hatchery. Stayton Pond reared tule stock fall chinook, but production was discontinued after the 1994 brood year due to budget cuts and flood damage to the facility.

The 1987 to 1994 brood Stayton Pond fall chinook survived at an average rate of 0.15% and ranged from 0.00% to 0.68% (Table 3). Survival was consistently below 0.2% except for the 1989 brood year (Figure 6). Ocean recoveries were mostly in West Coast Vancouver Island and Washington Coastal fisheries (Table 8). Hatchery returns comprised 87% and freshwater sport 13% of freshwater recoveries (Table 9).

Roaring River Hatchery

Roaring River Hatchery is located 11 miles southeast of Scio off State Highway 226. The hatchery rears and releases winter steelhead and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

McKenzie Hatchery

McKenzie Hatchery is located on the McKenzie River 16 miles east of Springfield. The hatchery rears and releases spring chinook salmon and summer steelhead. None of the summer steelhead released from McKenzie Hatchery have been coded-wire tagged for evaluation.

The 1987 to 1996 brood McKenzie Hatchery spring chinook survived at an average rate of 0.43% and ranged from 0.11% to 1.12% (Table 4). Survival declined from the 1986 to 1990 brood years, but has shown a slight increasing trend since the 10 year survival low of 0.11% for the 1990 brood (Figure 7).

Ocean recoveries of these spring chinook are almost exclusively in Alaskan and Canadian (West Coast Vancouver Island and North Central British Columbia) fisheries (Table 8). McKenzie Hatchery spring chinook freshwater recoveries are mainly hatchery returns (Table 9). Freshwater catch (sport and lower river gillnet combined) composed 44% of the average freshwater recoveries for McKenzie Hatchery spring chinook.

McKenzie Hatchery was involved in a net pen acclimation experiment for spring chinook. The goal of the experiment was to determine the effect of both acclimated and direct smolt releases at several sites below Willamette Falls, on catch in the Lower Willamette fishery. The experiment involved releases for the 1994 to 1999 brood years, although some fish were also released below Willamette falls for the 1992 and 1993 broods. Results by tagcode are reported in Appendix A. For a discussion of the experiment see Schroeder et.al. (2001).

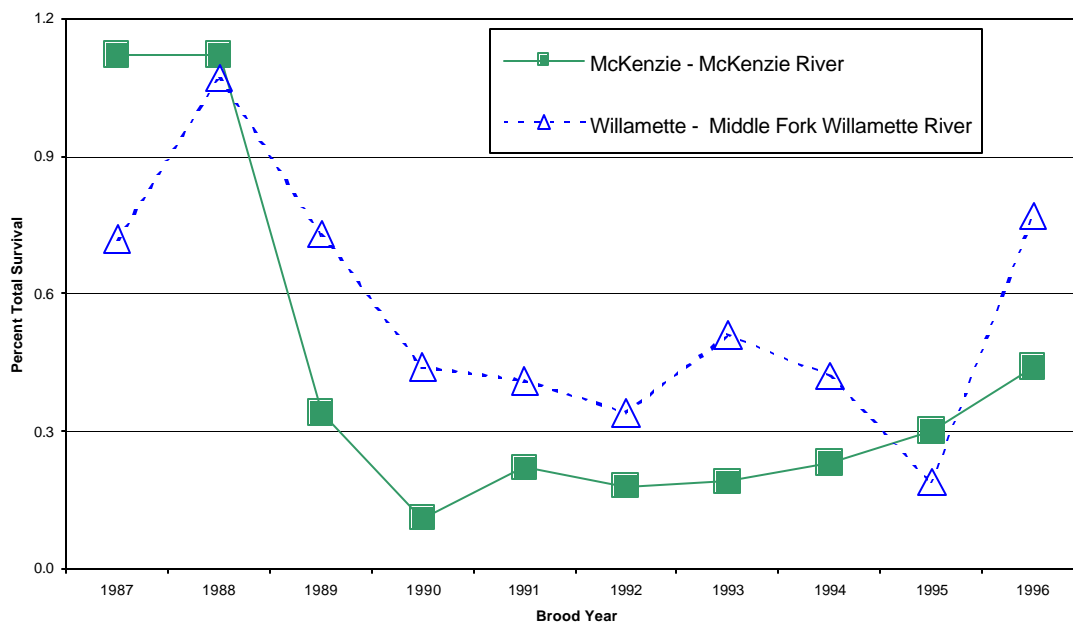


Figure 7. Percent survival by brood for Willamette & McKenzie Hatchery programs.

Leaburg Hatchery

Leaburg Hatchery is located on the McKenzie River off Highway 126, 18 miles east of Springfield. Leaburg Hatchery rears and releases summer steelhead and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

Willamette Hatchery

Willamette Hatchery is located on the Middle Fork Willamette River 1 mile east of Oakridge off Highway 58. Willamette Hatchery rears and releases spring chinook salmon, summer and winter steelhead and rainbow trout. None of the steelhead or rainbow trout released from Willamette Hatchery have been coded-wire tagged for evaluation.

The 1987 to 1996 brood Willamette Hatchery spring chinook survived at an average rate of 0.56% and ranged from 0.19% to 1.07% (Table 4). During this time period this was the highest average survival for all the Willamette Basin hatchery spring chinook programs. Survival declined from the 1987 to 1995 brood years, but increased substantially for the 1996 brood year, to 0.77% (Figure 7).

Ocean recoveries of these spring chinook are almost exclusively in Alaska and North Central British Columbia fisheries (Table 8). Willamette Hatchery spring chinook freshwater recoveries are mainly hatchery returns (Table 9). Freshwater catch (sport and lower river gillnet combined) composed 37% of the average freshwater recoveries for Willamette Hatchery spring chinook.

Sandy Hatchery

Sandy Hatchery is located on the Sandy River 1 mile northeast of the city of Sandy off Highway 26. Sandy Hatchery rears and releases coho salmon, rainbow and brook trout. Starting with the 1999 brood year Sandy Hatchery began acclimating and releasing a portion of the spring chinook reared at Clackamas Hatchery and released in the Sandy Basin. None of the rainbow or brook trout released by Sandy Hatchery were coded-wire tagged for evaluation.

The 1989 to 1998 brood years of Sandy River stock coho released in the Sandy River survived at an average rate of 1.13%, and ranged from 0.07% to 3.11% (Table 7). Coho survival was generally low for the 1990 to 1996 broods, but has increased since then (Figure 8). Ocean catch was mainly in Oregon and Washington coastal fisheries (Table 8). Sandy Hatchery coho freshwater recoveries are mainly hatchery returns (Table 9). Freshwater sport and lower river gillnet catch composed 22% of the average freshwater recoveries for Sandy Hatchery coho.

Cascade Hatchery

Cascade Hatchery is located off Highway 84 just above Bonneville Dam. Cascade Hatchery rears coho salmon that are acclimated and released in the Umatilla River and in upper Columbia River tributaries.

The 1989 to 1998 brood years of Tanner Creek stock coho released in the Umatilla River survived at an average rate of 0.38%, and ranged from 0.05% to 1.17% (Table 7). The 1989 to 1997 brood years released in the Yakima River survived at an average rate of 0.15%, and ranged from 0.05% to 0.43% (Table 7). Starting with the 1998 brood year the Yakima River releases were switched to releases in the Methow and Wenatchee Rivers. Survival for 1998 brood coho released from these two sites was 0.58% and 0.80% respectively (Appendix A). Survival for these coho

programs has been relatively low since the 1989 brood year (Figure 8), and is generally lower than the survival of the same stock released below Bonneville Dam (Table 7). These programs did show the increased survival in the 1998 brood seen for coho released below Bonneville Dam (Figures 2, 8 & 9).

Ocean catch of Tanner Creek stock coho released in the Umatilla and Yakima Rivers was mainly in Oregon and Washington coastal fisheries (Table 8). Freshwater recoveries of these coho were mainly sport and gillnet fisheries (Table 9). Unlike coho released below Bonneville Dam, the coho released above the dam contributed to gillnet fisheries above the dam, about 10% of the average total freshwater percent survival (Table 9). Percent survival to hatchery recovery for Tanner Creek stock coho released in the Umatilla and Yakima Rivers was lower than that for the same stock released below the dam (Table 9). This may be related to the sampling programs for CWT coho in the Umatilla and Yakima basin escapement.

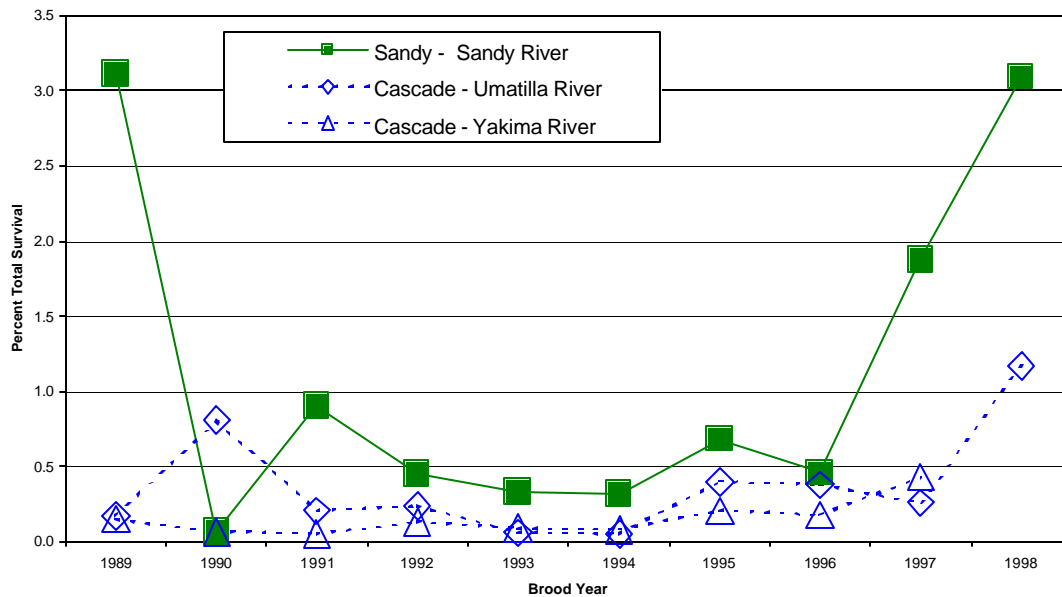


Figure 8. Percent survival by brood for Sandy & Cascade Hatchery coho programs.

Bonneville Hatchery

Bonneville Hatchery is located on the Columbia River off Highway 84 just below Bonneville Dam. Bonneville Hatchery rears and releases up-river bright fall chinook, sockeye and coho salmon. Bonneville Hatchery reared and released spring chinook salmon smolts until the 1992 brood year for Umatilla River releases, and the 1993 brood for releases in the West Fork Hood River. Appendix A reports CWT release and recovery data for the 1987 through 1993 broods for these programs.

Bonneville Hatchery tule stock fall chinook production was discontinued after the 1995 brood year. Brood years 1987 to 1995, released at Tanner Creek percent survival averaged 0.08%, and ranged from 0.02% to 0.22% (Table 3). Survival of these tule fall chinook was generally low and declining since the 1988 brood year (Figure 9). Ocean catch for these fish was in West Coast Vancouver Island and Washington Coastal fisheries (Table 8). Freshwater recoveries were almost exclusively hatchery returns (Table 9).

Bonneville Hatchery releases up-river bright stock fall chinook in Tanner Creek and in the Umatilla River. Average percent survival for the 1987 to 1996 broods, released in Tanner Creek was 0.22%, and for fish released in Umatilla River was 0.19% (Table 3). Survival has generally been low for both groups over this time period, except for a slightly increased survival for the 1993 brood release at Tanner Creek (Figure 9). Ocean catch for both groups was mainly in Alaskan and Canadian (West Coast Vancouver Island and North Central British Columbia) fisheries (Table 8). Freshwater recoveries were mainly hatchery returns for both groups, with freshwater catch (sport and gillnet combined) accounting for about 30% of the total average freshwater recoveries (Table 9). However, percent survival to gillnet fisheries above Bonneville Dam for fish released in the Umatilla was double that of fish released at Tanner Creek (Table 9).

The 1989 to 1998 brood years of Bonneville Hatchery stock coho survived at an average rate of 1.67%, and ranged from 0.42% to 6.14% (Table 7). Survival of Bonneville Hatchery coho generally declined from the 1988 to 1996 brood years, but has increased substantially since then (Figure 9). Ocean catch was mainly in Oregon and Washington coastal fisheries (Table 8). Bonneville Hatchery coho freshwater recoveries are mainly hatchery returns, with freshwater sport and lower river gillnet catch comprising 15% of the average freshwater recoveries (Table 9).

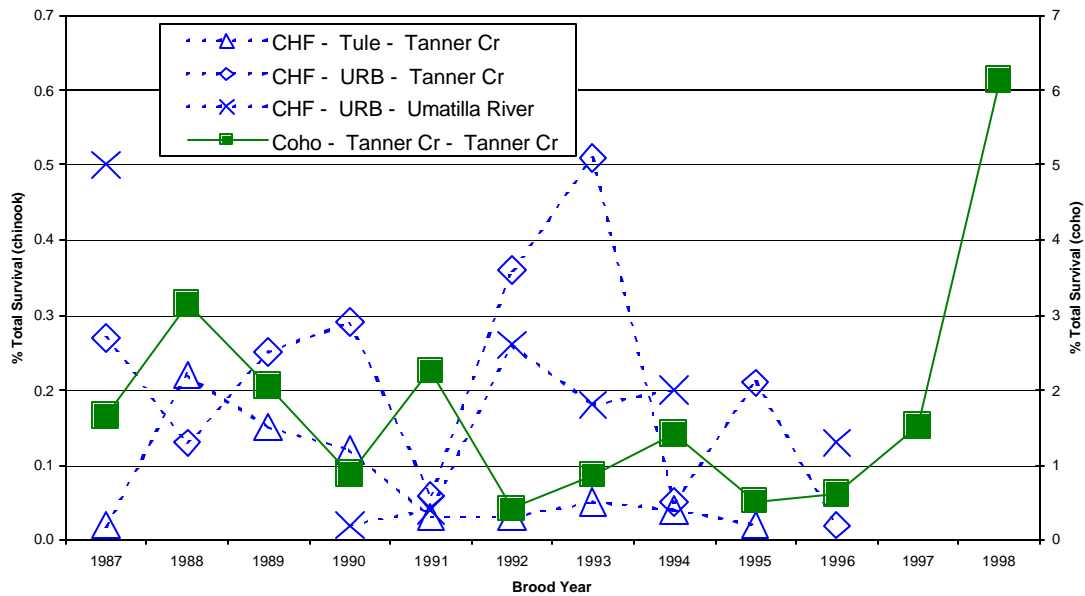


Figure 9. Percent survival by brood year for Bonneville Hatchery programs. URB = Up-River Bright stock.

Oxbow Hatchery

Oxbow Hatchery is located on the Columbia River 2 miles east of Cascade Locks off Highway 84. Oxbow Hatchery rears coho and spring chinook salmon. Coho reared by Oxbow Hatchery are released at Tanner Creek, Youngs Bay, or Umatilla River after acclimation and/or extended rearing. For results from these programs see the Bonneville, CEDC, and Cascade discussions above. The spring chinook from Oxbow are transferred to Clackamas Hatchery for rearing and release, results are reported under the Clackamas Hatchery section. Wahkeena Pond, located near Multnomah Falls State Park off Highway 84 was operated as a coho rearing satellite of Oxbow Hatchery through the 1992 brood. Release and recovery data for Wahkeena

Pond CWT coho is reported in Appendix A. Wahkeena pond is now being developed as a public fishing area instead of a hatchery rearing facility.

Round Butte Hatchery

Round Butte Hatchery is located at the base of Round Butte Dam on the Deschutes River east of Madras. Round Butte Hatchery rears and releases spring chinook, summer steelhead and brown trout. The summer steelhead and brown trout released from Round Butte Hatchery have not been coded-wire tagged for evaluation.

Percent survival for the 1987 to 1996 brood Deschutes River stock spring chinook released in the Deschutes River averaged 0.57%, and ranged from 0.08% to 1.71% (Table 5). Survival over this time frame has generally declined for this program (Figure 10). The very few ocean recoveries of Round Butte Hatchery spring chinook were in Alaska, Washington and British Columbia fisheries (Table 8, Appendix A). Freshwater recoveries were mainly hatchery returns, with freshwater catch (sport, gillnet, and tribal subsistence/ceremonial combined) accounting for about 33% of the total average freshwater recoveries (Table 9).

There are only 4 brood years of data available for Deschutes River stock spring chinook released in the West Fork Hood River (1991, and 1994 to 1996). Percent survival for these brood years averaged 0.01%, and ranged from 0.00% to 0.03% (Table 5). There have been 2 ocean recoveries for these fish and both were in Alaska waters (Appendix A). Freshwater recoveries were essentially all at hatcheries or fish traps (Table 9).

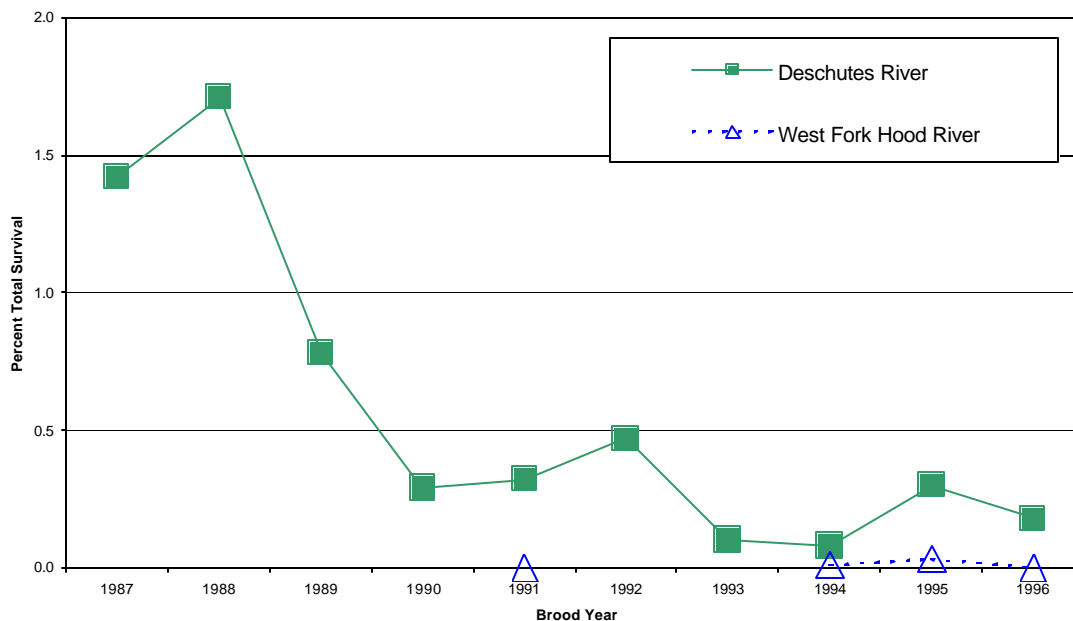


Figure 10. Percent survival by brood year for Round Butte Hatchery programs.

Oak Springs Hatchery

Oak Springs Hatchery is located on the Deschutes River 3 miles north of Maupin. Oak Springs Hatchery rears and releases summer steelhead, winter steelhead, and rainbow trout. The rainbow trout have not been coded-wire tagged for evaluation.

Average percent survival of the 1993 to 1995 brood Hood River stock winter steelhead reared at Oak Springs and released in East Fork Hood River was 0.26%,

and ranged from 0.05% to 0.38% (Table 6). There were only freshwater recoveries for this group, which were predominately in freshwater sport fisheries.

Wizard Falls Hatchery

Wizard Falls Hatchery is located on the Metolius River 2 miles north of Camp Sherman off Highway 20. Wizard Falls Hatchery rears and releases Atlantic and kokanee salmon, brown, brook and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

Fall River Hatchery

Fall River Hatchery is located on Fall River, a tributary of the Deschutes River southeast of Bend. Fall River Hatchery rears and releases cutthroat, brook, and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

Umatilla Hatchery

Umatilla Hatchery, constructed in 1990, is located on the Columbia River adjacent to Irrigon Hatchery. Umatilla Hatchery rears up-river bright fall chinook, Carson stock spring chinook, and summer steelhead trout. Starting with the 1991 brood year, Umatilla Hatchery took over production of spring and fall chinook salmon for the Umatilla River from Irrigon Hatchery, and production of summer steelhead for the Umatilla River from Oak Spring Hatchery.

Percent survival of the 1991 to 1996 brood years of Umatilla Hatchery up-river bright stock fall chinook averaged 0.05%, and ranged from 0.00% to 0.13% (Table 3). Ocean catch was primarily in Alaska and British Columbia fisheries (Table 8, Appendix A). Freshwater recoveries were mainly hatchery returns, with above Bonneville Dam gillnet catch accounting for 33% of the total average freshwater recoveries (Table 9).

Percent survival of the 1991 to 1996 brood years of Umatilla Hatchery Carson stock spring chinook averaged 0.16%, and ranged from 0.00% to 0.64% (Table 5). Survival was consistently below 0.1% until the 1995 brood year which jumped to 0.64% (Figure 11). The very few ocean recoveries were in Alaska and California fisheries (Appendix A). Freshwater recoveries were mainly hatchery returns, with recoveries on spawning grounds accounting for 33% of the total average freshwater recoveries (Table 9).

Percent survival of the 1991 to 1997 brood years of Umatilla Hatchery summer steelhead averaged 0.42%, and ranged from 0.08% to 0.98% (Table 6). Survival was about 0.4% except for the 1991 and 1994 brood years (Figure 11). The 1 ocean recovery was in a North Central British Columbia fishery (Appendix A). Freshwater recoveries were mainly hatchery returns, with catch (freshwater sport, and above Bonneville Dam gillnet) accounting for 24% of the total average freshwater recoveries (Table 9).

Irrigon Hatchery

Irrigon Hatchery is located on the Columbia River off Highway 730 near Irrigon. Irrigon rears and releases summer steelhead and rainbow trout. Starting with the 1991 brood year production of spring and fall chinook salmon for the Umatilla River was taken over by the new Umatilla Hatchery. Release and recovery data for Irrigon Hatchery fall and spring chinook salmon is reported in Appendix A.

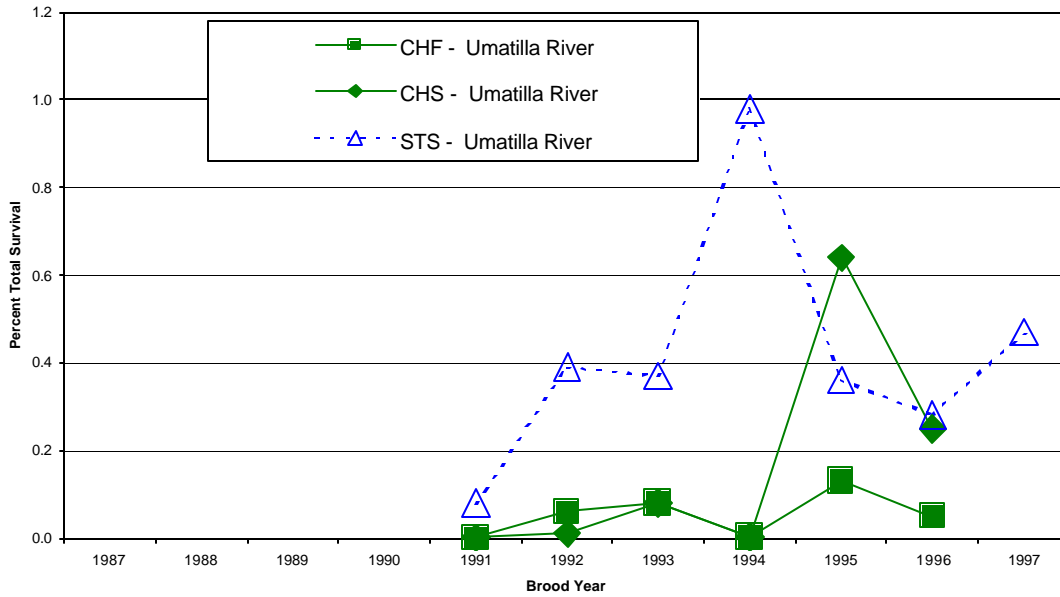


Figure 11. Percent survival by brood year for Umatilla Hatchery programs.

The 1988 to 1997 brood years Imnaha River stock summer steelhead reared at Irrigon Hatchery and released in Little Sheep Creek averaged 0.42% percent survival, and ranged from 0.01% to 1.04% (Table 6). Survival was generally between 0.2% and 0.5% except for two years of survival over 1.0% followed 1 year at 0.01% (Figure 12). The very few ocean recoveries were in British Columbia fisheries (Appendix A). Freshwater recoveries were mainly hatchery returns, with catch accounting for 44% of the total average freshwater recoveries (Table 9).

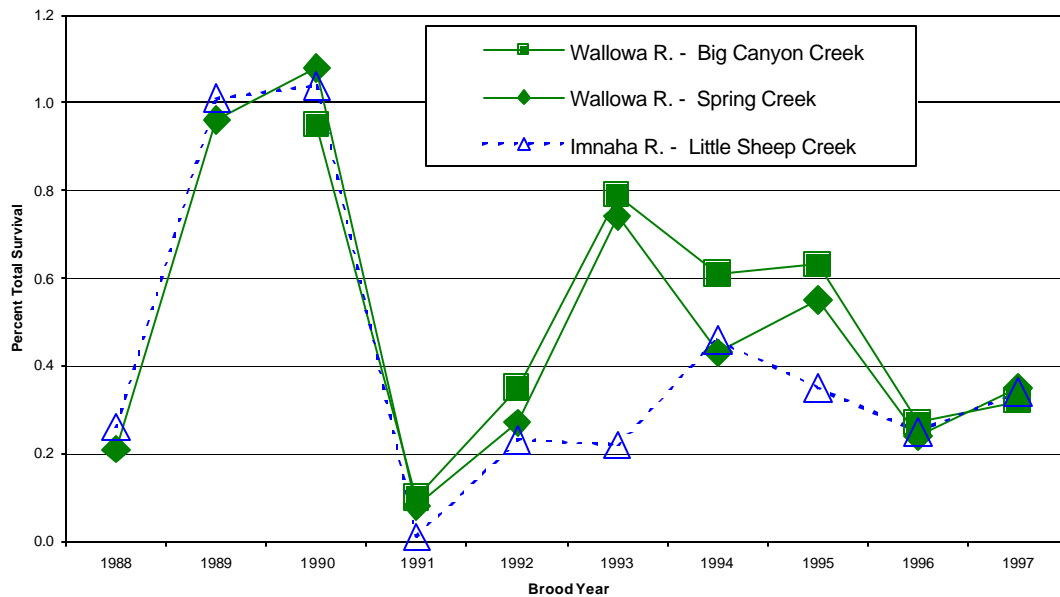


Figure 12. Percent survival by brood year for Irrigon/Wallowa Hatchery programs.

Lookingglass Hatchery

Lookingglass Hatchery is located on Lookingglass Creek, a tributary to the Grande Ronde River north of Elgin. Lookingglass Hatchery rears and releases spring chinook salmon. In recent years Lookingglass Hatchery has begun a spring chinook captive broodstock program, based on wild fingerlings collected in the Grande Ronde Basin.

Percent survival of the 1987 to 1996 brood years of Rapid River stock spring chinook released in Lookingglass Creek averaged 0.14%, and ranged from 0.03% to 0.35% (Table 5). Survival peaked with the 1988 brood, was consistently 0.1% or below for 1990 to 1994 broods, then increased beginning with the 1995 brood year (Figure 13). The very few ocean recoveries were in Oregon fisheries (Appendix A). Hatchery returns accounted for 85% of the total average freshwater recoveries (Table 9).

Percent survival of the 1987 to 1996 brood years of Imnaha stock spring chinook released in Imnaha River averaged 0.12%, and ranged from 0.01% to 0.35% (Table 5). Survival peaked with the 1988 brood, was consistently 0.1% or below for 1990 to 1994 broods, then increased beginning with the 1995 brood (Figure 13). The very few ocean recoveries were in Washington and California fisheries (Appendix A). Freshwater recoveries were mainly hatchery returns, with recoveries on spawning grounds accounting for 25% of the total average freshwater recoveries (Table 9).

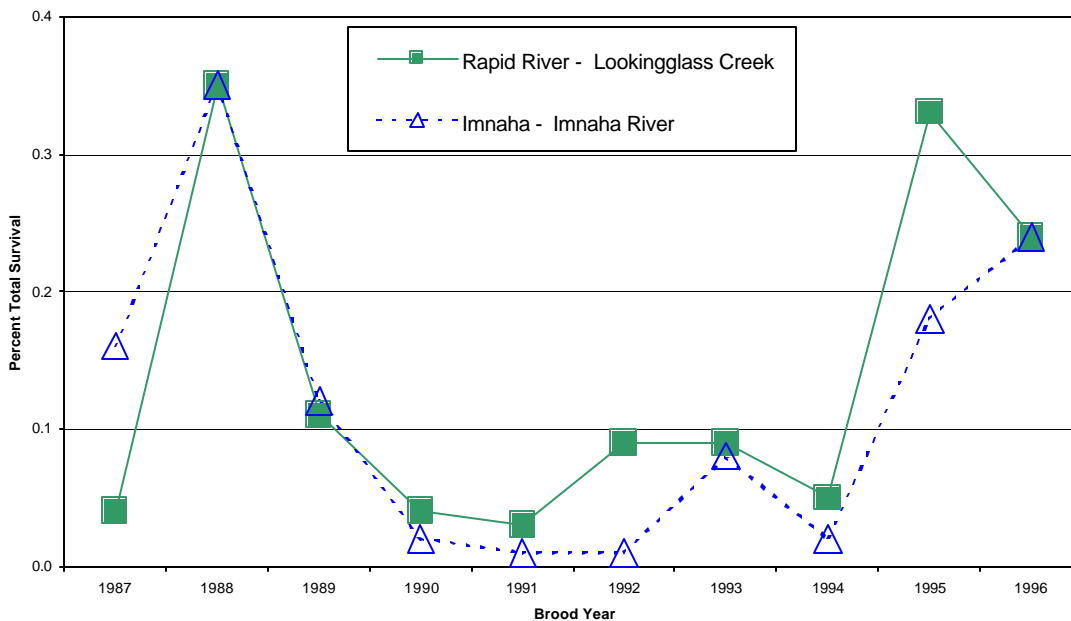


Figure 13. Percent survival by brood year for Lookingglass Hatchery programs.

Wallowa Hatchery

Wallowa Hatchery is located on the Wallowa River near Enterprise. The Wallowa Hatchery rears and releases summer steelhead and rainbow trout. The rainbow trout have not been tagged for evaluation.

The 1990 to 1997 brood years Wallowa stock summer steelhead reared at Irrigon and Wallowa hatcheries and released in Big Canyon Creek averaged 0.50% survival, and ranged from 0.10% to 0.95 (Table 6). Survival was variable for the first 4 brood years (1990 to 1993), but has generally declined since the 1993 brood year (Figure 12). The 5 ocean recoveries were in British Columbia (4) and Oregon (1) fisheries

(Appendix A). Freshwater recoveries were mainly in fisheries (sport and above Bonneville Dam gillnet catch), with hatchery returns accounting for 37% of the total average freshwater recoveries (Table 9).

The 1988 to 1997 brood years Wallowa stock summer steelhead reared at Irrigon, acclimated at Wallowa Hatchery and released in Spring Creek averaged 0.49% survival, and ranged from 0.08% to 1.08% (Table 6). Survival was variable for the 1987 through 1993 brood years, but has generally declined since the 1993 brood year (Figure 12). The very few ocean recoveries were in Alaska and British Columbia fisheries (Appendix A). Freshwater recoveries were mainly in fisheries (sport and above Bonneville Dam gillnet catch), with hatchery returns accounting for 37% of the total average freshwater recoveries (Table 9).

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APPENDIX A

Appendix Table A. Coded-wire-tagged salmon and steelhead released by ODFW in the Columbia Basin, release and recovery data. Chinook 1987-1996, steelhead 1988-1997, and coho 1989-1998 brood years. Stock sources: N = Native; H = Hatchery; M = Mixed. AK = Alaska, NCBC = North Central British Columbia, WCVI = West Coast Vancouver Island, GST = Georgia Strait, PS = Puget Sound, WA = Washington Coast, CA = California. Oregon ocean areas are displayed in Figure 1. URB = Columbia River Upriver Bright Stock

Hatchery,				Ocean Catch																							
Stock source (H, N, M)				Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries					% Surv.				
brood, tagcode	Stock	Release Site	Ad+CWT		Total	AK		NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+			
FALL CHINOOK SALMON																											
Big Creek (Tule):																											
H	1987	074559	Big Creek	Big Cr	04/05/88	52,980	954,332	3.04	0	0	5	0	5	3	0	3	0	0	0	0	0	0	6	5	0	0	0.05
H	1987	074560	Big Creek	Big Cr	04/05/88	51,721	931,643	3.04	0	0	3	0	0	10	4	0	3	0	0	0	0	0	7	4	0	0	0.06
H	1987	074561	Big Creek	Big Cr	04/25/88	52,744	611,983	4.65	0	0	0	0	0	9	0	0	0	0	0	0	0	0	3	5	0	0	0.03
H	1987	074562	Big Creek	Big Cr	04/25/88	51,851	601,619	4.65	0	0	5	0	0	1	0	0	0	0	0	0	0	0	3	4	0	0	0.03
H	1987	074563	Big Creek	Big Cr	05/10/88	52,227	2,896,303	5.32	0	0	5	0	5	2	0	0	0	0	0	0	0	1	7	3	0	0	0.04
H	1987	074601	Big Creek	Big Cr	05/10/88	51,501	2,856,040	5.32	0	0	14	0	5	2	0	0	0	2	0	0	0	0	4	4	0	0	0.06
H	1988	075009	Big Creek	Big Cr	04/17/89	53,481	1,952,443	3.07	0	0	16	0	0	15	0	0	2	0	0	0	1	22	13	0	0	0.13	
H	1988	075010	Big Creek	Big Cr	04/17/89	53,019	1,951,687	3.07	0	5	17	0	3	8	0	0	4	1	0	0	0	11	12	0	0	0.12	
H	1988	074335	Big Creek	Big Cr	04/28/89	53,000	657,699	3.88	0	2	11	0	0	16	0	0	4	0	0	0	0	12	9	0	0	0.10	
H	1988	074521	Big Creek	Big Cr	04/28/89	52,782	657,465	3.88	0	0	15	0	2	3	0	0	0	0	0	0	0	9	7	0	0	0.07	
H	1988	074337	Big Creek	Big Cr	05/08/89	51,707	2,678,130	5.82	0	0	25	0	9	11	0	0	0	0	0	0	4	31	25	0	0	0.20	
H	1988	074336	Big Creek	Big Cr	05/08/89	52,027	2,678,586	5.83	0	0	16	0	4	47	0	0	1	0	0	0	0	50	14	0	0	0.25	
H	1989	074256	Big Creek	Big Cr	04/20/90	26,506	897,812	4.82	0	0	4	0	0	14	0	0	3	0	0	0	0	13	4	0	0	0.14	
H	1989	074255	Big Creek	Big Cr	04/20/90	27,059	460,645	4.88	0	0	17	0	0	18	0	0	0	0	0	0	0	13	7	0	0	0.20	
H	1989	074259	Big Creek	Big Cr	05/05/90	27,201	2,734,370	6.02	0	0	8	0	0	23	0	0	7	0	0	0	1	8	10	0	0	0.21	
H	1989	074261	Big Creek	Big Cr	05/11/90	27,502	3,234,064	5.84	3	2	6	0	8	1	0	0	0	0	0	0	0	6	4	1	0	0.11	
H	1989	074759	Big Creek	Big Cr	05/31/90	26,698	604,487	8.10	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0.01
H	1989	074761	Big Creek	Big Cr	05/31/90	27,601	605,838	8.10	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2	0	0	0.02	
H	1989	074762	Big Creek	Big Cr	05/31/90	27,115	603,640	8.10	0	0	4	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0.03
H	1989	074901	Big Creek	Big Cr	05/31/90	26,907	605,980	8.10	0	0	4	0	0	2	0	0	0	0	0	0	0	1	3	0	0	0.04	
H	1990	074262	Big Creek	Big Cr	04/01/91	26,841	1,935,399	3.06	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.01	
H	1990	074401	Big Creek	Big Cr	04/07/91	25,732	1,923,163	3.13	0	0	12	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0.07	
H	1990	075519	Big Creek	Big Cr	04/25/91	53,151	1,187,057	4.66	0	0	3	0	0	5	0	0	0	0	0	0	1	14	6	0	0	0.05	
H	1990	075520	Big Creek	Big Cr	05/31/91	51,970	5,835,334	5.85	3	0	31	4	0	3	0	0	0	0	0	0	0	10	17	0	0	0.13	
H	1991	074947	Big Creek	Big Cr	03/30/92	26,473	1,377,150	3.43	0	6	12	0	0	5	0	0	0	0	0	0	2	9	3	0	0	0.14	
H	1991	074944	Big Creek	Big Cr	03/30/92	25,971	1,376,955	4.29	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0.02	
H	1991	075757	Big Creek	Big Cr	04/16/92	26,987	612,087	4.77	0	0	18	0	9	0	0	0	16	0	0	0	1	34	10	0	0	0.33	
H	1991	075758	Big Creek	Big Cr	04/16/92	27,598	613,253	5.06	0	0	16	0	0	0	0	0	0	0	0	0	3	31	6	0	0	0.20	
H	1991	075759	Big Creek	Big Cr	05/08/92	25,706	2,911,921	5.98	0	0	14	0	0	0	0	0	0	0	0	0	2	22	4	0	0	0.16	
H	1991	075760	Big Creek	Big Cr	05/08/92	27,266	2,913,560	6.04	0	0	7	0	0	1	0	0	0	0	0	0	3	39	7	0	0	0.21	
H	1992	076022	Big Creek	Big Cr	04/30/93	27,176	655,391	4.40	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0.02	
H	1992	076021	Big Creek	Big Cr	04/30/93	27,048	660,102	4.55	0	0	5	0	0	0	0	0	0	0	0	0	1	8	6	0	0	0.07	
H	1992	076024	Big Creek	Big Cr	05/17/93	26,064	2,853,284	6.24	0	0	0	0	0	0	0	0	0	0	0	0	3	7	3	0	0	0.05	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																										
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					% Surv.								
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+							
FALL CHINOOK SALMON (Continued)																															
Big Creek (Tule)(Continued):																															
H	1992	076023	Big Creek	Big Cr	06/01/93	25,678	3,732,284	6.31	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	9	0	0	0.11
H	1993	070547	Big Creek	Big Cr	04/15/94	52,289	1,240,973	4.77	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	36	14	0	0	0.11
H	1993	070548	Big Creek	Big Cr	05/16/94	53,136	5,784,742	6.05	6	25	13	1	2	19	0	0	3	0	0	0	0	0	0	0	4	64	30	2	0	0.32	
H	1994	070952	Big Creek	Big Cr	04/13/95	51,851	3,761,417	3.22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	5	1	0	0.02	
H	1994	076141	Big Creek	Big Cr	04/26/95	52,767	1,742,555	4.01	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	2	15	9	0	0	0.06	
H	1994	076144	Big Creek	Big Cr	05/22/95	54,138	5,684,812	6.18	0	0	8	0	0	3	0	0	0	0	0	0	0	0	0	0	3	25	14	0	0	0.10	
H	1995	070238	Big Creek	Big Cr	04/03/96	52,284	2,196,444	3.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00	
H	1995	071142	Big Creek	Big Cr	04/19/96	52,506	1,282,744	4.63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	10	0	0	0.04	
H	1995	070550	Big Creek	Big Cr	05/10/96	52,273	5,991,604	5.88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	8	0	0	0.04	
H	1996	071251	Big Creek	Big Cr	05/15/97	217,574	5,961,118	5.98	0	0	78	0	2	30	2	2	7	2	0	4	39	231	43	0	0	0	0	0	0.20		
Big Creek (Rogue):																															
H	1987	073535	Rogue R	Big Cr	05/19/88	10,829	11,197	5.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.09	
H	1987	073536	Rogue R	Big Cr	05/19/88	9,730	10,061	5.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1987	073537	Rogue R	Big Cr	05/19/88	10,486	10,843	5.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1987	073538	Rogue R	Big Cr	05/19/88	10,373	10,726	5.74	0	0	0	0	0	2	2	0	4	4	0	0	1	1	0	0	0	1	1	0	0	0.13	
H	1987	073539	Rogue R	Big Cr	05/19/88	10,433	10,788	5.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.04	
H	1987	074141	Rogue R	Big Cr	08/22/88	10,350	10,728	34.36	0	0	11	0	0	23	2	10	40	85	0	23	20	22	29	5	0	2.61					
H	1987	074142	Rogue R	Big Cr	08/22/88	10,088	10,456	34.36	0	0	10	0	0	12	2	13	44	91	8	5	20	14	42	0	0	2.59					
H	1987	074143	Rogue R	Big Cr	08/22/88	10,052	10,419	34.36	0	0	15	3	5	11	0	13	37	98	3	6	20	10	41	1	0	2.62					
H	1987	074144	Rogue R	Big Cr	08/22/88	10,143	10,513	34.36	0	2	0	0	0	21	5	19	37	48	7	11	21	26	32	1	0	2.27					
H	1987	074145	Rogue R	Big Cr	08/22/88	9,982	10,346	34.36	0	0	4	0	0	30	4	4	28	106	3	3	18	15	35	1	0	2.51					
H	1987	074136	Rogue R	Big Cr	10/04/88	9,433	9,777	44.90	0	0	22	0	0	44	8	24	64	91	2	20	36	59	79	4	0	4.80					
H	1987	074137	Rogue R	Big Cr	10/04/88	9,157	9,491	44.90	0	0	18	7	0	44	4	10	34	41	13	17	32	54	74	1	0	3.81					
H	1987	074138	Rogue R	Big Cr	10/04/88	9,244	9,581	44.90	0	0	17	0	0	42	14	18	44	95	12	27	23	39	103	5	0	4.75					
H	1987	074139	Rogue R	Big Cr	10/04/88	9,225	9,562	44.90	0	0	13	3	9	33	10	10	46	92	6	11	22	57	84	4	0	4.34					
H	1987	074140	Rogue R	Big Cr	10/04/88	9,046	9,376	44.90	0	0	25	0	0	63	6	31	32	73	3	27	21	43	63	4	0	4.32					
H	1988	073346	Rogue R	Big Cr	05/23/89	10,923	10,970	6.39	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.01		
H	1988	073540	Rogue R	Big Cr	05/23/89	10,402	10,446	6.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.02		
H	1988	074159	Rogue R	Big Cr	05/23/89	10,117	10,160	6.39	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.05		
H	1988	074160	Rogue R	Big Cr	05/23/89	10,261	10,305	6.39	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0.03		
H	1988	074161	Rogue R	Big Cr	05/23/89	10,070	10,113	6.39	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0	0	0	0	0	0	0.05		
H	1988	074162	Rogue R	Big Cr	08/21/89	10,409	10,440	35.43	0	0	5	6	0	22	5	10	38	31	0	6	14	62	49	0	0	2.38					
H	1988	074163	Rogue R	Big Cr	08/21/89	10,779	10,811	35.43	0	0	15	0	0	8	3	20	42	15	6	6	10	27	27	0	0	1.66					
H	1988	074201	Rogue R	Big Cr	08/21/89	10,556	10,588	35.43	0	0	16	4	0	13	2	10	34	10	3	8	12	63	23	1	0	1.89					
H	1988	074202	Rogue R	Big Cr	08/21/89	10,808	10,840	35.43	0	0	10	0	0	20	0	11	20	44	6	4	8	43	42	2	0	1.94					
H	1988	074203	Rogue R	Big Cr	08/21/89	9,914	9,944	35.43	0	0	0	0	0	22	2	7	35	13	0	6	11	50	42	0	0	1.90					
H	1988	074204	Rogue R	Big Cr	08/21/89	10,452	10,483	35.43	0	2	4	4	0	14	3	7	24	23	0	36	8	40	29	1	0	1.87					

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%				
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries									
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.	
FALL CHINOOK SALMON (Continued)																										
Big Creek (Rogue) (Continued):																										
H	1988	074205	Rogue R	Big Cr	08/21/89	10,300	10,331	35.43	0	0	0	0	0	7	2	5	16	22	3	3	8	69	48	1	0	1.79
H	1988	074206	Rogue R	Big Cr	08/21/89	9,635	9,664	35.43	0	2	24	0	0	16	14	19	34	35	2	2	15	61	42	0	0	2.76
H	1988	074207	Rogue R	Big Cr	08/21/89	10,382	10,413	35.43	0	0	4	0	0	41	0	11	52	20	3	7	8	36	32	0	0	2.06
H	1988	074208	Rogue R	Big Cr	08/21/89	10,326	10,357	35.43	0	0	10	0	0	20	2	10	50	34	6	16	14	60	37	0	0	2.51
H	1989	074338	Rogue R	Big Cr	06/05/90	10,067	27,703	7.31	0	0	0	0	0	0	0	0	9	4	0	0	1	5	4	0	0	0.23
H	1989	074339	Rogue R	Big Cr	06/05/90	10,132	27,770	7.31	0	0	0	0	0	0	0	0	8	0	0	0	3	5	3	0	0	0.19
H	1989	074340	Rogue R	Big Cr	06/05/90	10,040	27,676	7.31	0	0	0	0	0	2	0	0	10	0	0	0	2	1	0	0	0	0.15
H	1989	074341	Rogue R	Big Cr	06/05/90	9,859	27,490	7.31	0	0	5	0	0	0	0	0	8	0	0	0	0	0	1	0	0	0.14
H	1989	074342	Rogue R	Big Cr	06/05/90	10,058	27,695	7.31	0	0	0	0	0	0	0	0	7	0	0	0	0	2	8	0	0	0.17
H	1989	074343	Rogue R	Big Cr	06/05/90	9,904	27,537	7.31	0	0	0	0	0	2	1	0	6	0	0	4	1	0	0	1	0	0.15
H	1989	074344	Rogue R	Big Cr	06/05/90	9,841	27,471	7.31	0	0	0	0	0	2	0	0	16	0	0	4	0	2	1	0	0	0.25
H	1989	074345	Rogue R	Big Cr	06/05/90	10,167	27,807	7.31	0	0	0	0	0	4	0	0	6	0	0	6	1	1	2	0	0	0.20
H	1989	074346	Rogue R	Big Cr	06/05/90	10,547	28,198	7.31	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0.06
H	1989	074511	Rogue R	Big Cr	08/17/90	10,176	22,184	31.28	0	0	0	0	0	5	2	0	62	3	0	0	10	23	33	4	0	1.40
H	1989	074512	Rogue R	Big Cr	08/17/90	10,387	22,397	31.28	0	0	3	0	0	15	4	5	100	3	0	0	15	28	24	1	0	1.91
H	1989	074513	Rogue R	Big Cr	08/17/90	10,561	22,574	31.28	0	0	3	3	0	16	2	10	90	3	0	2	7	44	44	1	0	2.13
H	1989	074514	Rogue R	Big Cr	08/17/90	10,583	22,596	31.28	0	3	5	0	0	22	0	3	98	0	0	10	12	49	31	1	0	2.21
H	1989	074515	Rogue R	Big Cr	08/17/90	10,392	22,402	31.28	0	0	0	0	0	32	0	4	97	9	0	10	14	45	35	3	0	2.40
H	1989	074516	Rogue R	Big Cr	08/17/90	9,977	21,982	31.28	0	0	0	0	0	14	0	0	63	2	0	6	12	32	17	3	0	1.49
H	1990	075650	Rogue R	Big Cr	07/05/91	51,183	249,042	12.22	0	0	0	0	0	15	3	0	44	7	0	6	24	39	35	6	0	0.35
H	1990	075651	Rogue R	Big Cr	08/12/91	50,783	300,645	25.06	0	0	0	0	0	20	4	0	83	0	0	5	39	96	93	16	0	0.70
H	1990	075652	Rogue R	Big Cr	08/23/91	51,043	236,247	35.71	0	0	0	0	0	19	7	4	227	4	3	14	51	147	183	22	0	1.33
H	1991	075716	Rogue R	Big Cr	08/06/92	52,014	217,625	20.90	0	0	0	0	0	0	0	0	7	0	0	10	10	43	66	0	0	0.26
H	1991	075717	Rogue R	Big Cr	08/14/92	52,017	297,258	23.70	0	0	4	0	0	0	0	0	21	0	0	15	9	74	108	2	0	0.45
H	1991	075653	Rogue R	Big Cr	08/26/92	51,786	248,504	30.60	0	0	4	0	0	4	0	6	39	4	0	2	19	125	208	3	0	0.80
H	1992	075737	Rogue R	Big Cr	08/25/93	51,797	242,691	27.82	2	0	2	4	0	4	0	14	181	13	4	51	45	271	181	11	0	1.51
H	1992	070232	Rogue R	Big Cr	08/25/93	52,453	202,027	27.99	0	0	0	3	0	22	0	28	204	27	3	27	44	274	197	16	0	1.61
H	1993	070755	Rogue R	Big Cr	08/04/94	54,731	553,793	23.97	0	0	0	0	0	3	0	0	48	11	3	14	45	74	104	5	0	0.56
H	1993	070756	Rogue R	Big Cr	08/22/94	54,317	250,878	29.82	0	1	0	0	0	1	0	0	89	12	0	36	53	69	119	4	0	0.71
H	1994	070540	Rogue R	Big Cr	08/11/95	26,051	166,503	22.10	0	0	0	0	0	6	0	0	20	16	0	0	5	21	27	1	0	0.37
H	1994	070541	Rogue R	Big Cr	08/11/95	26,215	166,707	22.21	0	4	0	0	0	0	0	0	18	6	0	0	5	19	27	9	0	0.34
H	1994	070542	Rogue R	Big Cr	08/29/95	26,881	175,032	29.41	0	0	0	0	0	0	0	0	22	5	0	0	0	20	44	2	0	0.35
H	1994	070543	Rogue R	Big Cr	08/30/95	26,178	500,356	29.06	0	0	0	0	0	0	0	3	23	9	0	0	6	12	18	4	0	0.29
H	1995	071352	Rogue R	Big Cr	08/26/96	26,791	521,952	31.72	0	0	0	0	0	0	2	0	7	8	0	0	1	9	19	0	0	0.17
H	1995	071353	Rogue R	Klaskanine R NF	07/31/96	25,322	26,178	20.43	0	0	0	0	0	1	0	0	2	4	0	0	1	19	23	1	0	0.20

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	% Surv.						
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries											
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+				
FALL CHINOOK SALMON (Continued)																												
Bonneville (Tule):																												
H	1987	074553	Tanner Cr	Tanner Cr	03/16/88	52,058	493,345	3.24	0	0	0	0	5	11	0	0	0	0	0	0	0	0	0	9	1	0	0	0.05
H	1987	074554	Tanner Cr	Tanner Cr	03/16/88	53,069	502,920	3.24	0	0	24	0	0	7	0	0	0	6	0	0	2	2	1	0	0	0	0.08	
H	1987	074555	Tanner Cr	Tanner Cr	04/18/88	51,605	491,613	5.17	0	0	4	0	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0.02	
H	1987	074556	Tanner Cr	Tanner Cr	04/18/88	52,223	497,499	5.17	0	0	9	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0.02	
H	1987	074557	Tanner Cr	Tanner Cr	04/30/88	52,854	4,021,189	4.97	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1987	074558	Tanner Cr	Tanner Cr	04/30/88	53,870	4,098,429	4.97	0	0	4	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0.02	
H	1988	074958	Tanner Cr	Tanner Cr	03/20/89	52,727	898,818	3.35	0	0	22	0	8	18	0	0	11	0	3	0	5	38	10	0	0	0	0.22	
H	1988	074960	Tanner Cr	Tanner Cr	03/20/89	52,981	895,229	3.35	0	2	7	0	8	6	0	0	0	2	0	0	6	40	7	0	0	0	0.15	
H	1988	074963	Tanner Cr	Tanner Cr	04/13/89	51,181	623,609	4.48	0	1	10	0	0	6	0	0	2	0	0	0	2	27	8	0	0	0	0.11	
H	1988	075003	Tanner Cr	Tanner Cr	04/13/89	52,242	622,985	4.48	0	0	26	0	2	9	0	0	3	0	0	0	4	24	10	0	0	0	0.15	
H	1988	075005	Tanner Cr	Tanner Cr	05/02/89	53,773	4,308,420	5.99	0	0	25	0	35	21	0	0	3	5	0	0	1	46	12	0	0	0	0.28	
H	1988	075006	Tanner Cr	Tanner Cr	05/02/89	53,384	4,288,951	5.99	0	0	11	3	0	36	0	2	1	3	0	0	6	31	8	1	0	0	0.19	
H	1989	074252	Tanner Cr	Tanner Cr	05/07/90	26,112	2,010,023	5.32	0	0	13	0	0	3	2	0	0	0	0	0	0	6	6	1	0	0	0.12	
H	1989	074755	Tanner Cr	Tanner Cr	05/07/90	26,768	308,610	5.60	0	3	10	0	0	0	0	0	0	0	0	0	0	2	5	0	0	0	0.07	
H	1989	074756	Tanner Cr	Tanner Cr	05/07/90	26,936	328,373	5.61	0	0	0	0	0	4	0	0	4	0	0	0	1	5	1	1	0	0	0.06	
H	1989	074250	Tanner Cr	Tanner Cr	05/07/90	25,922	2,236,864	5.65	0	0	18	0	8	11	1	0	0	0	0	0	0	8	10	0	0	0	0.22	
H	1989	074747	Tanner Cr	Tanner Cr	05/07/90	27,046	715,324	6.89	0	0	0	3	0	4	0	0	0	0	0	0	1	12	7	0	0	0	0.10	
H	1989	074750	Tanner Cr	Tanner Cr	05/07/90	27,354	379,804	7.16	0	0	3	0	7	6	0	0	0	0	0	0	2	10	2	0	0	0	0.11	
H	1989	074749	Tanner Cr	Tanner Cr	05/07/90	26,755	396,836	7.53	0	0	12	0	8	6	0	0	0	0	0	0	1	12	5	0	0	0	0.16	
H	1989	074752	Tanner Cr	Tanner Cr	05/07/90	27,192	378,363	7.73	0	0	8	0	0	7	0	0	0	0	0	0	0	11	4	0	0	0	0.11	
H	1990	074402	Tanner Cr	Tanner Cr	05/10/91	25,336	1,143,105	6.02	0	0	0	0	0	5	0	0	0	0	0	0	0	3	2	1	0	0	0.04	
H	1990	074404	Tanner Cr	Tanner Cr	05/10/91	24,634	1,143,104	6.36	0	0	9	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0.08	
H	1990	074407	Big Creek	Tanner Cr	05/24/91	25,382	1,290,411	8.04	0	0	24	0	0	8	0	0	0	0	0	0	8	12	6	0	0	0	0.23	
H	1990	074408	Big Creek	Tanner Cr	05/24/91	24,976	1,290,410	8.06	0	0	3	0	0	3	0	0	0	0	0	0	2	8	9	1	0	0	0.10	
H	1991	075753	Big Creek	Tanner Cr	05/01/92	26,705	2,151,279	6.54	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	0	0	0	0.02	
H	1991	075754	Big Creek	Tanner Cr	05/01/92	26,461	2,151,278	6.54	0	0	3	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0.03	
H	1991	075755	Big Creek	Tanner Cr	05/14/92	26,564	1,727,639	6.65	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0.02	
H	1991	075756	Big Creek	Tanner Cr	05/14/92	26,875	1,727,639	6.65	0	0	0	0	0	0	0	0	9	0	0	0	0	3	3	0	0	0	0.06	
H	1992	071537	Tanner Cr	Tanner Cr	05/19/93	26,861	535,948	7.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1992	075942	Tanner Cr	Tanner Cr	06/01/93	53,487	5,028,917	6.79	0	0	0	0	0	0	0	0	0	0	0	0	1	12	1	1	0	0	0.03	
H	1992	076020	Tanner Cr	Tanner Cr	06/11/93	26,953	1,017,412	7.24	0	0	0	0	0	0	0	0	2	0	0	0	0	9	0	0	0	0	0.04	
H	1993	076143	Tanner Cr	Tanner Cr	05/19/94	52,175	5,866,287	6.85	0	0	2	0	0	0	0	0	0	0	0	0	3	12	9	0	0	0	0.05	
H	1994	070561	Tanner Cr	Tanner Cr	03/15/95	25,204	382,376	3.31	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0.01	
H	1994	070562	Tanner Cr	Tanner Cr	04/14/95	26,944	505,966	5.00	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.01	
H	1994	070560	Tanner Cr	Tanner Cr	05/15/95	26,197	248,819	5.50	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0.02	
H	1995	070544	Tanner Cr	Tanner Cr	03/15/96	27,454	882,260	3.41	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0.02	
H	1995	071144	Tanner Cr	Tanner Cr	04/15/96	26,991	1,858,378	5.24	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0.03	
H	1995	070545	Tanner Cr	Tanner Cr	05/15/96	26,765	991,075	6.44	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0.02	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%				
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries									
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.	
FALL CHINOOK SALMON (Continued)																										
Bonneville (Tule) (Continued):																										
H	1994	070120	Tule (WA)	Tanner Cr	03/15/95	27,155	1,751,566	3.24	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0.03			
H	1994	070121	Tule (WA)	Tanner Cr	04/14/95	26,824	3,567,065	4.80	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0.06			
H	1994	070122	Tule (WA)	Tanner Cr	05/15/95	26,747	1,784,239	6.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02			
H	1995	071155	Tule (WA)	Tanner Cr	03/15/96	26,090	940,053	2.99	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.03			
H	1995	072925	Tule (WA)	Tanner Cr	04/15/96	23,737	1,895,407	4.67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02			
H	1995	074731	Tule (WA)	Tanner Cr	05/15/96	26,012	984,415	6.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00			
Bonneville (URB):																										
M	1987	074254	Columbia (URB)	Tanner Cr	06/01/88	53,333	3,172,317	5.22	0	3	0	0	0	0	0	0	0	0	0	0	2	4	14	14	0	0.07
M	1987	074303	Columbia (URB)	Tanner Cr	08/08/88	53,014	2,050,842	11.45	39	24	33	5	7	5	0	0	0	0	0	0	8	37	99	24	2	0.53
M	1987	074304	Columbia (URB)	Tanner Cr	11/03/88	52,809	517,269	34.62	14	29	36	0	0	6	0	3	0	0	0	0	6	29	67	10	3	0.38
M	1987	073555	Columbia (URB)	Tanner Cr	03/07/89	24,352	65,431	50.96	4	44	34	2	0	22	0	0	3	2	0	0	21	27	78	19	0	1.05
M	1988	075030	Columbia (URB)	Tanner Cr	06/26/89	50,424	51,192	6.66	0	6	8	0	0	3	0	0	0	0	0	0	6	6	22	4	0	0.11
M	1988	075033	Columbia (URB)	Tanner Cr	06/26/89	49,742	50,500	6.66	9	18	3	0	0	0	0	0	0	0	0	0	6	15	16	5	1	0.15
M	1989	075408	Columbia (URB)	Tanner Cr	07/02/90	49,100	49,727	6.26	26	15	9	0	0	3	0	0	0	0	0	0	3	13	32	14	1	0.24
M	1989	075409	Columbia (URB)	Tanner Cr	07/02/90	49,282	49,911	6.26	54	11	13	0	0	1	0	0	0	0	0	0	7	11	22	11	0	0.26
H	1990	071416	Columbia (URB)	Tanner Cr	06/27/91	96,085	117,011	7.51	16	17	7	0	5	0	0	0	0	0	0	0	1	13	51	24	0	0.14
H	1990	071417	Columbia (URB)	Tanner Cr	06/28/91	98,211	119,120	7.42	31	11	5	0	0	0	0	0	0	0	0	0	1	14	35	33	1	0.13
H	1990	075521	Columbia (URB)	Tanner Cr	07/22/91	52,810	4,631,842	9.55	19	20	7	0	0	2	0	0	0	0	0	0	5	6	55	42	2	0.30
H	1991	076112	Columbia (URB)	Tanner Cr	07/15/92	35,162	1,051,028	9.05	4	0	0	0	0	0	0	0	0	0	0	0	0	2	10	6	1	0.07
H	1991	076110	Columbia (URB)	Tanner Cr	07/15/92	35,219	1,051,028	9.20	3	0	0	0	0	0	0	0	0	0	0	0	1	4	1	7	0	0.05
H	1991	076109	Columbia (URB)	Tanner Cr	07/15/92	31,782	1,051,028	9.29	7	4	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0.07
H	1992	070433	Columbia (URB)	Tanner Cr	07/21/93	97,104	4,030,615	9.00	47	7	15	0	0	6	0	0	8	0	0	0	34	69	143	22	2	0.36
H	1993	075814	Columbia (URB)	Tanner Cr	06/14/94	49,055	794,970	6.76	37	18	3	0	0	0	0	0	0	0	0	0	9	48	64	22	0	0.41
H	1993	075815	Columbia (URB)	Tanner Cr	06/14/94	50,112	795,198	6.95	45	16	4	0	0	0	0	0	3	0	0	0	14	62	80	31	0	0.51
H	1993	074954	Columbia (URB)	Tanner Cr	07/28/94	53,174	2,071,787	9.28	49	22	5	0	0	2	0	0	0	0	0	0	13	47	95	29	0	0.49
H	1993	075816	Columbia (URB)	Tanner Cr	07/28/94	51,593	2,071,787	9.28	51	32	5	0	0	0	0	0	0	0	0	0	17	57	99	24	3	0.56
H	1994	070820	Columbia (URB)	Tanner Cr	06/01/95	53,726	757,624	5.04	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	1	0	0.01
H	1994	070926	Columbia (URB)	Tanner Cr	06/01/95	49,768	418,179	5.06	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	3	0	0.02
H	1994	070819	Columbia (URB)	Tanner Cr	06/01/95	53,472	419,015	5.54	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0.01
H	1994	076361	Columbia (URB)	Tanner Cr	07/24/95	76,816	4,886,853	9.27	10	10	0	0	0	0	0	0	0	0	0	0	1	2	13	8	0	0.06
H	1995	070921	Columbia (URB)	Tanner Cr	06/12/96	53,525	428,887	5.45	34	6	1	0	0	0	0	0	0	0	0	0	5	10	40	25	2	0.23
H	1995	070927	Columbia (URB)	Tanner Cr	06/12/96	53,281	428,888	5.67	56	12	0	0	0	3	0	0	0	0	0	0	4	16	64	33	5	0.36
H	1995	071154	Columbia (URB)	Tanner Cr	06/12/96	53,223	428,887	5.67	71	11	0	0	0	3	0	0	0	0	0	0	2	24	82	51	3	0.46
H	1995	091712	Columbia (URB)	Tanner Cr	07/31/96	79,953	4,893,902	10.00	39	6	0	0	1	0	0	0	0	0	0	0	4	14	45	30	0	0.17
H	1996	092118	Columbia (URB)	Tanner Cr	06/03/97	52,693	502,638	2.90	14	0	0	0	0	2	0	0	0	0	0	0	1	11	12	0	0	0.08
H	1996	092119	Columbia (URB)	Tanner Cr	07/31/97	53,506	6,577,692	8.14	6	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	0	0.02

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%						
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries											
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.			
FALL CHINOOK SALMON (Continued)																												
Bonneville (URB) (Continued):																												
M	1988	075034	Columbia (URB)	Mid-Columbia R	06/26/89	50,127	50,379	7.35	8	0	4	4	0	0	0	0	0	0	0	0	0	0	5	8	16	14	0	0.12
M	1988	075036	Columbia (URB)	Mid-Columbia R	06/26/89	50,923	51,179	7.35	3	3	25	0	0	3	0	0	0	0	0	0	0	0	4	24	32	9	0	0.20
M	1989	075406	Columbia (URB)	Mid-Columbia R	07/02/90	46,470	49,743	6.41	18	15	15	0	0	2	0	0	0	0	0	0	0	17	8	27	10	2	0.25	
M	1989	075407	Columbia (URB)	Mid-Columbia R	07/02/90	46,657	49,943	6.41	43	24	44	0	0	2	0	0	0	0	0	0	0	12	16	27	21	2	0.41	
H	1990	074649	Columbia (URB)	Mid-Columbia R	06/27/91	94,213	423,744	7.31	31	22	6	0	0	0	0	0	0	0	0	0	0	2	19	50	23	0	0.16	
H	1990	075654	Columbia (URB)	Mid-Columbia R	06/28/91	96,358	424,944	7.50	32	16	16	0	0	0	0	0	0	0	0	0	0	2	14	52	39	0	0.18	
H	1993	070818	Columbia (URB)	Hanford Reach	06/17/94	479,106	496,746	7.28	93	42	7	0	0	2	0	0	9	0	0	0	0	58	287	270	95	2	0.18	
H	1993	070816	Columbia (URB)	Ringold Pnd (WA)	07/04/94	208,105	792,077	8.25	67	66	2	1	0	1	0	0	0	0	0	0	0	26	208	231	83	1	0.33	
H	1993	070817	Columbia (URB)	Ringold Pnd (WA)	07/06/94	217,184	3,466,415	8.32	64	38	10	0	0	0	0	0	0	0	0	0	0	25	156	215	56	1	0.26	
H	1987	074539	Washington URB	Umatilla R	11/04/88	4,438	4,823	46.28	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0.43	
H	1987	074540	Washington URB	Umatilla R	11/04/88	4,289	4,660	46.28	0	0	3	0	0	1	0	0	0	0	0	0	0	0	1	2	3	0	0.23	
H	1987	074541	Washington URB	Umatilla R	11/04/88	4,533	4,925	46.28	2	4	13	0	0	0	0	0	0	0	0	0	0	4	1	4	0	0.62		
H	1987	074536	Washington URB	Umatilla R	11/04/88	24,656	26,858	52.73	13	18	14	0	0	0	0	0	0	0	0	0	0	2	12	35	8	0	0.41	
H	1987	074537	Washington URB	Umatilla R	11/04/88	23,403	25,493	52.73	37	11	32	0	0	13	0	0	0	3	0	2	1	10	36	5	0	0.64		
H	1987	074538	Washington URB	Umatilla R	11/04/88	25,089	27,330	52.73	9	3	17	0	0	11	0	0	0	15	0	0	2	8	40	19	2	0.50		
H	1990	075618	Columbia (URB)	Umatilla R	03/17/92	26,178	97,801	60.47	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	
H	1990	075619	Columbia (URB)	Umatilla R	03/19/92	26,160	122,639	60.47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0.02	
H	1991	071460	Columbia (URB)	Umatilla R	03/18/93	23,863	68,492	49.84	0	0	3	0	0	0	0	0	0	0	0	0	0	3	1	0	1	0	0.03	
H	1991	071461	Columbia (URB)	Umatilla R	03/18/93	23,239	66,345	52.14	0	4	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	1	0.06	
H	1992	070255	Columbia (URB)	Umatilla R	03/23/94	23,699	233,629	43.61	0	0	7	0	0	0	0	0	2	0	0	0	0	34	13	12	1	0	0.29	
H	1992	070252	Columbia (URB)	Umatilla R	04/19/94	23,470	49,824	53.35	0	0	0	0	0	0	0	0	0	0	0	0	0	15	12	1	0	0	0.12	
H	1993	070659	Columbia (URB)	Umatilla R	04/07/95	24,374	115,271	55.25	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	2	0	0.12	
H	1993	070658	Columbia (URB)	Umatilla R	04/07/95	24,865	111,817	58.08	7	0	0	0	0	0	0	0	0	0	0	0	0	47	5	2	2	0	0.25	
H	1994	071037	Columbia (URB)	Umatilla R	04/05/96	27,397	204,022	64.70	2	0	0	0	0	0	0	0	0	0	0	0	0	57	2	15	0	0	0.28	
H	1994	071038	Columbia (URB)	Umatilla R	04/18/96	28,521	217,294	64.70	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1	12	3	0	0.13	
H	1996	092037	Columbia (URB)	Umatilla R	03/13/98	27,402	256,910	42.00	2	0	0	0	0	0	0	0	0	0	0	0	0	4	4	14	11	0	0.13	
CEDC Fisheries (Tules):																												
H	1987	074006	Big Creek	Klask & Youngs R	05/16/88	44,529	2,774,357	7.48	0	0	6	0	2	0	0	0	3	0	0	0	0	0	5	3	0	0	0.04	
H	1987	074008	Big Creek	Klask & Youngs R	05/19/88	47,876	52,040	6.27	0	0	23	0	0	4	0	0	0	0	0	0	0	0	10	14	0	0	0.11	
H	1987	074007	Big Creek	Klask & Youngs R	05/19/88	47,255	253,053	7.79	0	0	0	7	0	7	0	0	0	0	0	0	0	0	10	4	0	0	0.06	
CEDC Fisheries (URB):																												
H	1994	071235	Columbia (URB)	Youngs R	07/18/95	50,608	199,088	19.45	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0.02	
H	1995	091711	Columbia (URB)	Tongue Point	07/15/96	46,186	97,866	16.79	13	3	0	0	0	0	0	0	0	0	0	0	0	2	120	2	0	0.30		
H	1996	092137	Columbia (URB)	Tongue Point	07/15/97	51,897	201,849	18.82	3	0	4	0	0	0	0	0	0	0	0	0	0	2	38	4	2	0	0.10	

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%						
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries					Surv.						
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+				
FALL CHINOOK SALMON (Continued)																												
CEDC Fisheries (Rogue):																												
H	1995	071351	Rogue R	Blind Slough	07/15/96	27,231	27,380	22.77	0	0	0	0	0	0	0	0	0	0	0	14	0	3	2	47	141	6	0	0.78
H	1996	092145	Rogue R	Blind Slough	07/17/97	27,413	27,413	14.37	0	0	0	0	0	0	0	0	0	0	0	5	0	4	0	7	4	0	0	0.07
H	1987	074245	Rogue R	Klaskanine R, SF	08/05/88	26,481	79,770	29.45	0	0	12	0	0	55	5	9	113	262	15	39	23	86	154	28	0	0	3.02	
H	1995	071350	Rogue R	Tongue Point	07/15/96	26,354	26,792	20.60	0	0	0	0	0	0	4	0	3	2	0	0	3	34	22	2	0	0	0.27	
H	1996	092146	Rogue R	Tongue Point	07/17/97	27,427	27,482	18.82	0	0	0	0	0	0	5	0	3	3	0	0	1	8	18	0	0	0	0	0.14
H	1989	074639	Rogue R	Youngs R	08/01/90	9,896	25,606	13.83	0	0	6	0	0	2	0	0	51	0	0	0	2	37	30	4	0	0	1.33	
H	1989	074640	Rogue R	Youngs R	08/01/90	9,884	25,568	13.83	0	0	0	0	0	2	0	0	50	4	0	0	11	24	42	0	0	0	1.35	
H	1989	074641	Rogue R	Youngs R	08/01/90	10,404	25,529	13.83	0	0	0	0	0	9	1	4	31	9	0	0	5	11	27	1	0	0	0.94	
H	1989	074642	Rogue R	Youngs R	08/01/90	9,699	25,095	13.83	0	0	0	0	0	0	1	4	54	3	0	8	12	28	40	0	0	0	1.55	
H	1989	074643	Rogue R	Youngs R	08/01/90	10,453	25,913	13.83	0	0	7	0	0	6	9	3	67	0	0	5	7	37	37	0	0	0	1.70	
H	1991	071427	Rogue R	Youngs R	08/03/92	25,467	56,467	33.10	0	0	0	0	0	0	0	0	0	0	0	0	10	12	15	0	0	0	0.15	
H	1993	070757	Rogue R	Youngs R	07/20/94	25,351	337,915	22.43	0	0	0	0	0	3	0	0	48	4	3	26	38	77	94	5	0	0	1.18	
H	1994	070742	Rogue R	Youngs R	06/27/95	49,826	107,892	24.87	0	0	0	0	0	2	0	0	7	6	0	8	6	62	37	5	0	0	0.27	
H	1994	071421	Rogue R	Youngs R	07/17/95	19,514	707,127	11.45	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	0	0	0	0.04	
H	1994	070931	Rogue R	Youngs R	07/18/95	42,854	115,702	32.82	0	0	0	0	0	2	0	0	18	10	6	0	3	37	42	1	0	0	0.28	
H	1994	070928	Rogue R	Youngs R	07/18/95	49,657	77,100	33.30	0	0	0	0	0	0	0	0	26	2	0	5	9	27	35	3	0	0	0.22	
H	1994	070930	Rogue R	Youngs R	07/18/95	44,123	127,936	38.37	0	0	0	0	0	0	0	2	51	10	3	5	15	97	57	1	0	0	0.55	
H	1994	070929	Rogue R	Youngs R	07/18/95	43,518	116,030	41.54	4	4	0	0	0	0	0	0	35	8	0	3	10	89	57	11	0	0	0.51	
H	1995	071341	Rogue R	Youngs R	07/16/96	45,148	154,593	31.48	0	0	0	0	0	3	0	0	0	4	0	6	5	43	68	6	0	0	0.30	
H	1995	071342	Rogue R	Youngs R	07/16/96	57,523	64,679	34.86	0	0	0	0	0	10	0	4	21	15	0	3	8	131	184	8	0	0	0.67	
H	1995	071354	Rogue R	Youngs R	07/17/96	26,934	329,976	14.25	0	0	0	0	0	0	0	0	7	0	0	1	0	10	13	0	0	0	0.12	
H	1996	071339	Rogue R	Youngs R	06/17/97	52,956	53,442	11.93	0	0	0	0	0	0	0	20	0	0	0	0	6	36	18	0	0	0	0.15	
H	1996	092136	Rogue R	Youngs R	07/17/97	52,468	116,680	21.19	0	0	0	0	0	1	0	0	0	1	0	0	3	60	14	0	0	0	0.15	
H	1996	071340	Rogue R	Youngs R	07/17/97	52,618	53,765	24.65	0	0	0	0	0	0	0	0	0	0	0	0	1	9	16	0	0	0	0.05	
H	1996	071338	Rogue R	Youngs R	07/17/97	50,371	50,868	25.06	0	0	0	0	0	1	0	0	0	0	0	0	2	10	6	0	0	0	0.04	
H	1996	092135	Rogue R	Youngs R	07/17/97	51,270	188,948	25.34	0	0	3	0	0	2	0	0	0	0	0	0	3	18	13	1	0	0	0.08	
Irrigon:																												
M	1987	075007	Washington URB	Umatilla R	05/06/88	198,285	1,886,757	6.64	27	35	11	3	0	2	0	0	0	0	0	0	14	15	33	5	0	0	0.07	
M	1988	074646	Washington URB	Umatilla R	05/16/89	52,228	797,904	6.05	14	4	9	0	0	0	0	0	0	0	0	0	3	12	17	2	0	0	0.12	
M	1988	074647	Washington URB	Umatilla R	05/16/89	49,771	797,903	6.05	7	17	5	0	0	0	0	0	0	0	0	0	4	6	13	11	0	0	0.13	
M	1988	074648	Washington URB	Umatilla R	05/16/89	52,244	797,903	6.05	7	9	11	0	0	0	0	0	0	0	0	0	1	13	7	5	0	0	0.10	
H	1988	074758	Washington URB	Umatilla R	10/18/89	26,790	27,071	41.23	0	4	6	0	0	0	0	0	0	0	0	0	0	1	9	5	1	0	0.10	
H	1988	074760	Washington URB	Umatilla R	10/18/89	24,285	25,428	41.23	3	7	3	0	0	2	0	0	0	0	0	0	0	1	6	1	0	0	0.09	
H	1988	074763	Washington URB	Umatilla R	10/18/89	25,350	25,633	41.23	3	6	0	0	0	0	0	0	0	0	0	0	0	3	6	0	0	0	0.07	
H	1988	074753	Washington URB	Umatilla R	10/18/89	26,358	26,770	41.61	3	6	0	0	0	0	0	0	2	3	0	0	0	4	7	6	1	0	0.12	
H	1988	074754	Washington URB	Umatilla R	10/18/89	25,028	26,617	41.61	0	4	0	0	0	2	0	0	0	0	0	0	6	6	3	5	0	0	0.10	
H	1988	074757	Washington URB	Umatilla R	10/18/89	25,438	25,438	41.61	0	0	0	4	0	0	0	0	0	0	0	0	2	4	8	1	0	0	0.07	

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%					
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries										
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.		
FALL CHINOOK SALMON (Continued)																											
Irrigon (Continued):																											
M	1989	075403	Columbia (URB)	Umatilla R	05/23/90	52,612	131,101	4.77	8	25	12	0	0	0	0	0	0	0	0	0	0	0	0.22				
M	1989	075404	Columbia (URB)	Umatilla R	05/23/90	53,160	131,100	4.77	8	14	19	0	0	4	0	0	0	0	0	0	0	0	0.21				
M	1989	075405	Columbia (URB)	Umatilla R	05/23/90	53,248	131,099	4.77	9	16	9	0	4	0	0	0	0	0	0	0	0	0	0.13				
H	1989	075325	Columbia (URB)	Umatilla R	10/16/90	23,396	25,311	49.30	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0.03				
H	1989	075326	Columbia (URB)	Umatilla R	10/16/90	21,929	23,724	49.30	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0.11				
H	1989	075327	Columbia (URB)	Umatilla R	10/16/90	21,101	22,828	49.30	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0.06				
H	1989	075322	Columbia (URB)	Umatilla R	10/16/90	23,413	25,472	51.54	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0.05				
H	1989	075323	Columbia (URB)	Umatilla R	10/16/90	23,617	25,694	51.54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
H	1989	075324	Columbia (URB)	Umatilla R	10/16/90	23,420	25,480	51.54	0	4	9	0	0	0	0	0	0	0	0	0	0	0	0.07				
H	1990	075225	Columbia (URB)	Umatilla R	05/08/91	52,252	1,343,311	5.53	17	0	0	0	0	0	0	0	0	0	0	0	1	2	65	10	0	0.18	
H	1990	075226	Columbia (URB)	Umatilla R	05/08/91	51,728	1,343,042	5.53	13	3	13	0	0	0	0	0	0	0	0	0	0	0	6	51	10	0	0.19
H	1990	075450	Columbia (URB)	Umatilla R	05/08/91	51,814	52,326	5.53	12	29	13	0	0	0	0	0	0	0	0	0	1	10	38	26	0	0.25	
H	1990	075451	Columbia (URB)	Umatilla R	05/08/91	52,444	52,706	5.53	22	11	36	0	0	4	0	0	0	0	0	0	5	9	70	7	0	0.31	
H	1990	070016	Columbia (URB)	Umatilla R	05/10/91	48,301	99,225	6.21	29	7	14	0	0	3	0	0	0	0	0	0	1	12	70	10	1	0.30	
H	1990	075328	Columbia (URB)	Umatilla R	05/10/91	48,266	100,642	62.13	27	8	12	0	0	0	0	3	0	0	0	0	3	12	93	7	0	0.34	
H	1990	075449	Columbia (URB)	Umatilla R	05/10/91	48,481	99,962	62.13	12	16	10	0	0	0	0	0	0	0	0	0	7	3	42	21	1	0.23	
H	1990	075560	Columbia (URB)	Umatilla R	05/13/91	25,720	25,862	5.27	17	8	3	0	0	0	0	0	0	0	0	0	6	2	11	16	0	0.24	
H	1990	075561	Columbia (URB)	Umatilla R	05/13/91	25,425	25,708	5.27	2	4	9	0	0	0	0	0	0	0	0	0	0	8	9	13	0	0.18	
H	1990	075562	Columbia (URB)	Umatilla R	05/13/91	22,309	23,295	5.27	7	8	0	0	0	2	0	0	0	0	0	0	0	8	12	2	0	0.17	
H	1990	075563	Columbia (URB)	Umatilla R	05/13/91	26,173	26,481	5.63	4	13	0	0	0	0	0	0	0	0	0	0	0	5	12	4	0	0.15	
H	1990	075601	Columbia (URB)	Umatilla R	05/13/91	24,762	26,585	5.63	9	7	13	0	0	0	0	0	0	0	0	0	1	9	49	8	0	0.39	
H	1990	075602	Columbia (URB)	Umatilla R	05/13/91	25,476	26,606	5.63	4	17	3	0	0	0	0	0	0	0	0	0	2	8	13	6	0	0.22	
Klaskanine:																											
H	1987	074602	Big Cr (Tule)	Klaskanine R, NF	04/14/88	49,227	419,707	2.28	0	0	5	0	0	4	0	0	0	0	0	0	0	0	0	0	0.02		
H	1987	074603	Big Cr (Tule)	Klaskanine R, NF	04/14/88	50,040	426,640	2.28	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.00	
H	1987	074604	Big Cr (Tule)	Klaskanine R, NF	05/10/88	52,162	1,454,643	4.61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0.01	
H	1987	074605	Big Cr (Tule)	Klaskanine R, NF	05/10/88	52,117	1,453,366	4.61	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	0.01	
H	1988	075023	Big Cr (Tule)	Klaskanine R, NF	04/21/89	52,609	439,184	3.00	0	1	14	4	0	13	0	0	0	0	0	0	0	2	1	0	0	0.07	
H	1988	075024	Big Cr (Tule)	Klaskanine R, NF	04/21/89	51,522	439,183	3.00	0	0	6	0	9	8	0	4	0	0	0	0	0	3	9	0	0	0.08	
H	1988	075025	Big Cr (Tule)	Klaskanine R, NF	05/05/89	52,403	1,576,340	4.21	0	0	14	0	0	0	0	1	0	0	0	0	0	11	2	0	0	0.05	
H	1988	075027	Big Cr (Tule)	Klaskanine R, NF	05/05/89	52,653	1,576,340	4.21	0	0	45	0	0	12	0	0	4	0	0	0	0	8	5	0	0	0.14	
H	1996	092143	Rogue R	Klaskanine R, NF	10/31/97	9,593	195,247	32.86	0	0	0	0	0	1	0	0	0	0	0	0	0	1	18	2	0	0.23	
H	1996	092144	Rogue R	Klaskanine R, NF	10/31/97	27,222	408,713	32.86	0	0	1	0	0	4	0	0	2	8	0	3	0	30	68	6	0	0.45	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%		
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries							
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+
FALL CHINOOK SALMON (Continued)																								
Stayton Pond:																								
H	1987	074526	Tanner Cr	Willamette R	05/07/88	39,715	1,039,050	8.22	0	0	14	0	0	8	0	0	0	0	3	23	3	0	0.13	
H	1987	074527	Tanner Cr	Willamette R	05/07/88	37,631	984,516	8.22	0	0	15	0	0	9	0	0	3	0	0	24	15	0	0.18	
H	1987	074528	Tanner Cr	Willamette R	05/07/88	39,003	1,020,416	8.22	0	0	12	0	0	14	2	0	0	0	0	11	6	0	0.12	
H	1987	074529	Tanner Cr	Willamette R	05/07/88	38,224	1,000,052	8.22	0	0	15	0	0	3	0	4	2	5	0	3	11	12	0	0.14
H	1987	074530	Tanner Cr	Willamette R	05/07/88	38,767	1,014,243	8.22	0	0	14	2	0	7	0	0	0	0	0	11	0	0	0.09	
H	1988	075012	Tanner Cr	Willamette R	05/03/89	35,973	951,526	7.21	0	1	8	0	0	6	0	0	1	0	3	21	5	0	0.13	
H	1988	075015	Tanner Cr	Willamette R	05/03/89	34,933	924,040	7.21	0	0	15	0	0	10	0	0	0	0	0	24	6	0	0.17	
H	1988	075017	Tanner Cr	Willamette R	05/03/89	34,259	906,211	7.21	0	1	2	0	0	8	0	0	0	4	0	12	3	0	0.11	
H	1988	075018	Tanner Cr	Willamette R	05/03/89	34,351	908,626	7.21	0	0	19	4	0	9	0	0	7	0	0	31	9	0	0.25	
H	1988	075020	Tanner Cr	Willamette R	05/03/89	34,203	904,729	7.21	0	0	3	3	5	7	0	0	2	0	0	21	8	0	0.15	
H	1989	075218	Tanner Cr	Willamette R	05/11/90	46,422	1,160,558	10.40	0	0	45	4	2	57	0	2	14	0	0	85	25	1	0.57	
H	1989	075219	Tanner Cr	Willamette R	05/11/90	47,029	1,175,728	10.40	0	0	34	0	0	66	0	7	14	2	0	85	32	0	0.57	
H	1989	075220	Tanner Cr	Willamette R	05/11/90	46,908	1,172,703	10.40	0	9	39	12	4	120	4	5	7	3	0	75	22	0	0.70	
H	1989	075221	Tanner Cr	Willamette R	05/11/90	46,874	1,171,876	10.40	0	0	64	7	16	69	0	0	16	5	0	113	30	0	0.77	
H	1989	075222	Tanner Cr	Willamette R	05/11/90	47,551	1,188,787	10.40	0	0	98	4	8	88	7	5	15	0	0	95	23	0	0.80	
H	1990	075227	Tanner Cr	Willamette R	05/09/91	39,127	1,897,990	8.11	0	0	27	0	5	0	0	4	0	0	6	21	9	0	0.18	
H	1990	075228	Tanner Cr	Willamette R	05/09/91	37,988	1,842,767	8.11	0	0	19	0	0	9	0	0	0	0	10	23	0	0	0.16	
H	1990	075229	Tanner Cr	Willamette R	05/09/91	40,149	1,947,585	8.11	0	0	18	0	0	7	4	0	6	0	0	17	0	0	0.14	
H	1990	075230	Tanner Cr	Willamette R	05/09/91	39,540	1,918,027	8.11	0	0	3	0	13	4	3	0	0	0	0	22	1	0	0.14	
H	1990	075231	Tanner Cr	Willamette R	05/09/91	39,383	1,910,410	8.11	0	0	9	0	0	17	0	0	3	0	0	28	2	0	0.16	
H	1991	071601	Tanner Cr	Willamette R	05/02/92	35,861	2,057,967	8.22	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.01	
H	1991	071602	Tanner Cr	Willamette R	05/02/92	40,237	2,032,995	8.22	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00	
H	1991	071603	Tanner Cr	Willamette R	05/02/92	40,142	1,991,864	8.22	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.00	
H	1991	071604	Tanner Cr	Willamette R	05/02/92	40,903	2,013,522	8.22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	075905	Tanner Cr	Willamette R	05/02/92	39,286	1,995,947	8.22	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0.01	
H	1992	070221	Tanner Cr	Willamette R	05/05/93	41,255	1,007,956	8.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1992	070222	Tanner Cr	Willamette R	05/05/93	42,110	1,026,744	8.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1992	070223	Tanner Cr	Willamette R	05/05/93	40,543	989,309	8.57	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0.01	
H	1992	070224	Tanner Cr	Willamette R	05/05/93	41,091	1,001,111	8.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1992	076321	Tanner Cr	Willamette R	05/05/93	41,307	1,006,420	8.57	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00	
H	1993	070516	Tanner Cr	Willamette R	05/12/94	39,468	1,186,737	8.83	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0.01	
H	1993	070517	Tanner Cr	Willamette R	05/12/94	38,822	1,166,435	8.83	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0.02	
H	1993	070518	Tanner Cr	Willamette R	05/12/94	39,011	1,171,734	8.83	0	0	0	0	0	0	0	0	0	0	2	1	2	0	0.01	
H	1993	070519	Tanner Cr	Willamette R	05/12/94	38,794	1,164,984	8.83	0	0	0	0	0	3	0	0	0	0	0	5	3	0	0.03	
H	1993	070520	Tanner Cr	Willamette R	05/12/94	38,424	1,154,229	8.83	0	0	4	0	0	0	0	0	0	0	0	3	3	0	0.03	
H	1994	070852	Tanner Cr	Willamette R	05/04/95	206,717	10,667,979	7.43	0	0	23	0	0	15	0	0	4	2	0	5	56	24	0	0.06

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%			
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries								
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	
FALL CHINOOK SALMON (Continued)																									
Stayton Pond (Continued):																									
H	1992	075657	Tanner Cr	Tanner Cr	04/26/93	55,442	56,442	6.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1993	070235	Tanner Cr	Tanner Cr	05/02/94	53,383	55,057	7.78	0	0	0	0	0	0	0	0	0	0	1	20	2	0	0	0.04	
H	1994	075812	Tanner Cr	Tanner Cr	04/24/95	52,482	52,935	6.44	0	0	13	0	0	0	0	4	0	0	1	40	10	0	0	0.13	
H	1992	075658	Tanner Cr	Santiam R & N Fk	05/05/93	51,429	1,254,750	6.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1993	070234	Tanner Cr	Santiam R & N Fk	05/12/94	46,981	1,402,112	8.13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.00	
H	1994	070432	Tanner Cr	Santiam R & N Fk	05/04/95	53,689	54,086	6.73	0	4	12	0	0	0	0	2	0	0	0	14	4	0	0	0.07	
Umatilla:																									
H	1991	071434	Columbia (URB)	Umatilla R	05/18/92	31,224	306,802	6.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	071438	Columbia (URB)	Umatilla R	05/18/92	30,924	301,831	7.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	071436	Columbia (URB)	Umatilla R	05/18/92	30,365	302,555	7.33	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.00	
H	1991	071433	Columbia (URB)	Umatilla R	05/18/92	29,066	303,878	7.43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	071435	Columbia (URB)	Umatilla R	05/18/92	30,326	297,331	7.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	071437	Columbia (URB)	Umatilla R	05/18/92	30,508	223,830	8.22	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.00	
H	1991	071430	Columbia (URB)	Umatilla R	05/19/92	32,287	281,350	6.97	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0.01	
H	1991	071432	Columbia (URB)	Umatilla R	05/19/92	29,425	191,257	7.78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	071431	Columbia (URB)	Umatilla R	05/19/92	28,951	182,931	8.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1991	071429	Columbia (URB)	Umatilla R	05/20/92	31,892	286,578	6.42	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.00	
H	1992	076334	Columbia (URB)	Umatilla R	05/24/93	29,958	282,175	6.67	3	0	0	0	0	0	0	0	0	2	3	1	1	0	0.03		
H	1992	076331	Columbia (URB)	Umatilla R	05/24/93	29,537	282,125	6.77	5	0	0	0	0	0	0	0	0	2	4	7	1	0	0.06		
H	1992	070127	Columbia (URB)	Umatilla R	05/24/93	27,092	269,336	7.15	6	0	0	0	0	6	0	0	0	0	3	3	1	0	0.07		
H	1992	076330	Columbia (URB)	Umatilla R	05/24/93	28,964	292,895	7.20	10	0	0	0	0	0	0	0	0	3	2	4	5	0	0.08		
H	1992	076332	Columbia (URB)	Umatilla R	05/24/93	29,451	277,931	7.37	0	0	0	0	0	0	0	0	0	4	3	14	0	0	0.07		
H	1992	076333	Columbia (URB)	Umatilla R	05/24/93	29,718	273,662	7.52	3	0	0	0	0	0	0	0	0	4	7	11	0	0	0.08		
H	1992	070125	Columbia (URB)	Umatilla R	05/25/93	29,360	272,496	7.63	0	0	9	0	0	0	0	0	0	2	5	3	0	0	0.06		
H	1992	076329	Columbia (URB)	Umatilla R	05/25/93	30,706	203,731	7.63	3	0	0	0	0	0	0	0	0	1	4	11	0	0	0.06		
H	1992	076335	Columbia (URB)	Umatilla R	05/25/93	30,462	207,565	7.63	0	4	0	0	0	0	0	0	0	2	7	3	1	0	0.06		
H	1992	070126	Columbia (URB)	Umatilla R	05/25/93	29,594	268,001	7.65	3	0	0	0	0	0	0	0	0	0	6	12	0	0	0.07		
H	1993	070719	Washington URB	Umatilla R	05/23/94	31,658	327,700	6.25	7	6	0	0	0	0	0	0	0	4	4	6	0	0	0.09		
H	1993	070721	Washington URB	Umatilla R	05/23/94	28,474	306,105	6.59	6	0	0	0	0	0	0	0	0	0	5	4	0	0	0.05		
H	1993	070723	Washington URB	Umatilla R	05/23/94	30,447	326,408	6.64	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0.03		
H	1993	070722	Washington URB	Umatilla R	05/23/94	30,950	303,843	6.66	6	0	0	0	0	0	0	0	0	2	9	9	1	0	0.09		
H	1993	070720	Washington URB	Umatilla R	05/23/94	30,528	314,518	6.93	3	9	0	0	0	0	0	0	0	2	13	15	0	0	0.14		
H	1993	070663	Washington URB	Umatilla R	05/23/94	31,162	322,867	7.19	9	0	0	0	0	0	0	0	0	2	0	4	1	0	0.05		
H	1993	070718	Washington URB	Umatilla R	05/24/94	31,040	279,965	7.06	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0.01		
H	1993	070662	Washington URB	Umatilla R	05/24/94	31,239	280,046	7.54	2	0	0	0	0	0	0	0	0	0	17	13	4	0	0.12		
H	1993	070717	Washington URB	Umatilla R	05/24/94	32,481	190,439	7.55	7	0	0	0	0	2	0	0	0	2	14	15	3	0	0.13		
H	1993	070716	Washington URB	Umatilla R	05/24/94	30,502	191,321	7.66	10	8	0	0	0	0	0	0	0	0	6	2	0	0	0.09		

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%	
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5
FALL CHINOOK SALMON (Continued)																							
Umatilla (Continued):																							
H	1994	071017	Washington URB	Umatilla R	05/31/95	29,736	271,129	6.67	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071025	Washington URB	Umatilla R	05/31/95	29,784	274,110	6.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071020	Washington URB	Umatilla R	05/31/95	29,460	275,613	6.89	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071018	Washington URB	Umatilla R	05/31/95	29,132	241,342	6.95	0	0	0	0	0	0	0	0	0	0	0	1	4	0.02	
H	1994	071022	Washington URB	Umatilla R	05/31/95	28,472	280,406	7.18	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071023	Washington URB	Umatilla R	05/31/95	28,623	287,313	7.18	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071019	Washington URB	Umatilla R	05/31/95	29,353	286,459	7.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071024	Washington URB	Umatilla R	05/31/95	30,204	151,943	7.26	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071021	Washington URB	Umatilla R	05/31/95	29,327	152,098	7.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071026	Washington URB	Umatilla R	05/31/95	30,106	245,885	7.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1994	071039	Washington URB	Umatilla R	04/18/96	23,238	48,499	85.58	0	0	0	0	0	0	0	0	0	0	2	0	0	0.01	
H	1994	071041	Washington URB	Umatilla R	04/18/96	23,343	47,125	85.58	0	0	0	0	0	0	0	0	0	0	12	0	0	0.05	
H	1994	071040	Washington URB	Umatilla R	04/18/96	23,442	47,463	96.51	0	0	0	0	0	0	0	0	0	0	7	1	0	0.04	
H	1995	071320	Washington URB	Umatilla R	05/30/96	30,015	303,803	6.52	3	6	0	0	0	0	0	0	0	0	1	3	7	0.08	
H	1995	071321	Washington URB	Umatilla R	05/30/96	28,997	299,233	6.63	2	0	0	0	0	0	0	0	0	0	3	1	7	0.06	
H	1995	071325	Washington URB	Umatilla R	05/30/96	30,220	300,895	6.72	0	2	0	0	0	0	0	0	0	0	1	1	1	0.03	
H	1995	071324	Washington URB	Umatilla R	05/30/96	30,243	272,594	6.82	5	0	0	0	0	0	0	0	0	0	1	4	16	0.14	
H	1995	071323	Washington URB	Umatilla R	05/30/96	29,914	300,377	7.21	0	0	0	0	0	0	1	0	0	0	0	3	13	0.07	
H	1995	071328	Washington URB	Umatilla R	05/30/96	30,455	181,709	7.51	6	0	0	0	0	0	0	0	0	0	2	0	12	0.08	
H	1995	071322	Washington URB	Umatilla R	05/30/96	29,646	266,913	7.92	7	0	0	0	0	0	0	0	0	0	3	7	11	0.10	
H	1995	071326	Washington URB	Umatilla R	05/30/96	30,238	181,291	8.02	19	0	0	0	0	0	0	0	0	0	0	11	9	0.14	
H	1995	071157	Washington URB	Umatilla R	05/31/96	29,852	393,339	6.22	0	0	0	0	0	0	0	0	0	0	2	5	6	0.05	
H	1995	071327	Washington URB	Umatilla R	05/31/96	28,476	460,259	6.52	3	0	0	0	0	0	0	0	0	0	2	4	3	0.05	
H	1995	071358	Washington URB	Umatilla R	03/25/97	25,983	51,112	55.31	15	2	0	0	0	0	0	0	0	0	18	13	29	0.55	
H	1995	091807	Washington URB	Umatilla R	03/25/97	25,258	51,066	55.31	31	14	0	0	0	4	0	0	0	0	0	22	8	0.74	
H	1995	071359	Washington URB	Umatilla R	03/25/97	25,232	50,865	56.00	19	7	3	0	0	10	0	0	0	0	0	29	6	0.84	
H	1995	091729	Washington URB	Umatilla R	03/25/97	25,250	53,993	59.68	37	5	1	0	0	3	0	0	0	0	0	13	10	0.70	
H	1995	091748	Washington URB	Umatilla R	03/25/97	25,260	51,917	59.68	53	2	6	0	0	5	0	0	3	0	0	24	21	1.27	
H	1995	070953	Columbia (URB)	Umatilla R	03/30/97	29,983	169,478	33.11	5	0	0	0	0	0	0	0	0	0	0	0	0	0.02	
H	1995	070954	Columbia (URB)	Umatilla R	03/30/97	30,344	91,490	33.85	0	0	0	0	0	0	0	0	0	0	1	2	3	0.03	
H	1996	092133	Washington URB	Umatilla R	05/29/97	33,273	394,250	6.42	2	4	3	0	0	0	0	0	0	0	2	2	2	0.05	
H	1996	092127	Washington URB	Umatilla R	05/29/97	32,764	195,031	6.46	0	0	0	0	0	0	0	0	0	0	1	3	10	0.05	
H	1996	092134	Washington URB	Umatilla R	05/29/97	33,640	311,016	6.71	4	3	0	0	0	0	0	0	0	0	0	37	0	0.14	
H	1996	092132	Washington URB	Umatilla R	05/29/97	31,382	304,993	6.79	0	0	0	0	0	0	0	0	0	0	2	4	3	0.03	
H	1996	092128	Washington URB	Umatilla R	05/29/97	29,732	194,562	6.90	0	0	0	0	0	0	0	0	0	0	1	3	2	0.02	
H	1996	092131	Washington URB	Umatilla R	05/30/97	31,844	395,493	6.68	0	0	0	0	0	2	0	0	0	0	1	1	2	0.02	
H	1996	092126	Washington URB	Umatilla R	05/30/97	33,555	197,028	6.75	0	0	0	0	0	0	0	0	0	0	3	6	6	0.04	
H	1996	092129	Washington URB	Umatilla R	05/30/97	33,161	294,417	7.13	0	0	0	0	0	0	0	0	0	0	0	2	4	0.02	

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%			
stock, (source H, N, M),		Release Date	Release Site	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries								
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.
FALL CHINOOK SALMON (Continued)																									
Umatilla (Continued):																									
H	1996	092130	Washington URB	Umatilla R	05/30/97	32,464	294,043	7.27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02		
H	1996	071158	Washington URB	Umatilla R	04/17/98	21,547	89,106	58.15	3	0	4	0	0	2	0	0	0	0	0	0	0	0	0.19		
H	1996	076127	Washington URB	Umatilla R	04/17/98	22,783	89,994	58.15	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0.20		
SPRING CHINOOK SALMON																									
Bonneville:																									
H	1987	074427	Lookingglass	Umatilla R	11/08/88	25,987	26,109	40.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06		
H	1987	074429	Lookingglass	Umatilla R	11/08/88	24,070	24,183	40.86	0	0	0	0	0	0	0	0	0	0	0	0	2	21	5	0.12	
H	1987	074430	Lookingglass	Umatilla R	11/08/88	25,356	25,475	40.86	0	0	0	0	0	0	0	0	0	0	0	0	0	21	1	0.09	
H	1987	074420	Lookingglass	Umatilla R	11/10/88	410	416	21.19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1987	074423	Lookingglass	Umatilla R	11/10/88	393	399	21.19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.25	
H	1987	074424	Lookingglass	Umatilla R	11/10/88	376	381	21.19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.27	
H	1987	074439	Lookingglass	Umatilla R	03/28/89	27,585	28,153	42.00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	76	12	0.32
H	1987	074440	Lookingglass	Umatilla R	03/28/89	27,550	28,116	42.00	0	0	0	0	2	0	0	0	0	0	0	0	0	3	84	3	0.33
H	1987	074443	Lookingglass	Umatilla R	03/28/89	24,165	24,663	42.00	0	0	0	0	0	0	0	0	0	0	0	0	2	2	74	7	0.35
H	1987	074433	Lookingglass	Umatilla R	05/23/89	25,427	26,135	43.19	0	0	0	0	0	0	0	0	0	0	0	0	0	5	85	0	0.35
H	1987	074434	Lookingglass	Umatilla R	05/23/89	27,004	27,756	43.19	0	0	0	0	0	0	0	0	0	0	0	0	2	57	8	0.25	
H	1987	074436	Lookingglass	Umatilla R	05/23/89	25,386	26,093	43.19	0	0	0	0	0	0	0	0	0	0	0	0	3	54	8	0.26	
H	1988	075063	Lookingglass	Umatilla R	10/13/89	24,801	24,968	37.79	0	0	0	0	0	0	0	0	0	0	0	1	2	9	4	0.06	
H	1988	075101	Lookingglass	Umatilla R	10/13/89	28,109	28,299	37.79	0	0	0	0	0	0	0	0	0	0	0	0	1	0	12	12	0.09
H	1988	075102	Lookingglass	Umatilla R	10/13/89	27,299	27,483	37.79	0	0	0	0	0	0	0	0	0	0	0	0	1	2	10	7	0.07
H	1988	075103	Lookingglass	Umatilla R	10/13/89	27,137	27,287	37.79	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	6	0.05
H	1988	075104	Lookingglass	Umatilla R	10/13/89	28,560	28,718	37.79	0	0	0	0	0	0	0	0	0	0	0	0	0	5	18	6	0.10
H	1988	075105	Lookingglass	Umatilla R	10/13/89	27,695	27,848	37.79	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	4	0.03
H	1988	075106	Lookingglass	Umatilla R	03/22/90	26,638	38,224	50.39	0	0	0	0	0	0	0	0	0	0	0	0	3	2	67	35	0.40
H	1988	075107	Lookingglass	Umatilla R	03/22/90	26,160	37,538	50.39	0	0	0	0	0	0	0	0	0	0	0	0	0	1	86	48	0.52
H	1988	075108	Lookingglass	Umatilla R	03/22/90	26,888	38,583	50.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	43	0.37
H	1988	075109	Lookingglass	Umatilla R	03/23/90	25,611	39,012	47.24	0	0	0	0	0	0	0	0	0	0	0	0	3	2	72	64	0.55
H	1988	075110	Lookingglass	Umatilla R	03/23/90	26,307	40,072	47.24	0	0	0	0	1	0	0	0	0	0	0	0	0	6	85	67	0.60
H	1988	075111	Lookingglass	Umatilla R	03/23/90	25,172	38,343	47.24	0	0	0	0	0	0	0	0	0	0	0	0	2	3	52	48	0.42
H	1989	074508	Lookingglass	Umatilla R	10/26/90	25,876	26,050	33.84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0.01
H	1989	074509	Lookingglass	Umatilla R	10/26/90	26,104	26,280	33.84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1989	074510	Lookingglass	Umatilla R	10/26/90	25,497	25,669	33.84	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00
H	1989	074505	Lookingglass	Umatilla R	10/26/90	26,670	26,757	39.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0.01
H	1989	074506	Lookingglass	Umatilla R	10/26/90	26,717	26,804	39.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
H	1989	074507	Lookingglass	Umatilla R	10/26/90	26,788	26,876	39.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1989	075114	Lookingglass	Umatilla R	03/26/91	25,947	33,473	44.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	2	0.17
H	1989	075115	Lookingglass	Umatilla R	03/26/91	25,921	33,440	44.90	0	0	0	0	0	0	0	0	0	0	0	0	1	2	32	1	0.14

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%	
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries						
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5
SPRING CHINOOK SALMON (Continued)																							
Bonneville (Continued):																							
H	1989	075116	Lookingglass	Umatilla R	03/26/91	26,039	33,592	44.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18
H	1989	075442	Lookingglass	Umatilla R	03/27/91	24,441	32,032	38.43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11
H	1989	075440	Lookingglass	Umatilla R	03/28/91	24,365	31,932	38.43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09
H	1989	075441	Lookingglass	Umatilla R	03/28/91	24,559	32,186	38.43	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13
H	1990	075829	Lookingglass	Umatilla R	11/08/91	25,499	26,020	26.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
H	1990	075830	Lookingglass	Umatilla R	11/08/91	25,382	25,899	26.99	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0.02
H	1990	075831	Lookingglass	Umatilla R	11/08/91	26,029	26,561	26.99	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0.01
H	1990	075826	Lookingglass	Umatilla R	11/08/91	26,769	27,039	27.49	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0.02
H	1990	075827	Lookingglass	Umatilla R	11/08/91	26,737	27,007	27.49	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0.02
H	1990	075828	Lookingglass	Umatilla R	11/08/91	26,827	27,097	27.49	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0.02
H	1990	075835	Lookingglass	Umatilla R	04/21/92	26,570	36,351	49.30	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0.01
H	1990	075836	Lookingglass	Umatilla R	04/21/92	26,426	36,154	49.30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0.01
H	1990	075837	Lookingglass	Umatilla R	04/21/92	26,750	36,596	49.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1990	075832	Lookingglass	Umatilla R	04/21/92	25,503	32,994	53.35	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
H	1990	075833	Lookingglass	Umatilla R	04/21/92	25,472	32,953	53.35	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0.03
H	1990	075834	Lookingglass	Umatilla R	04/21/92	25,493	32,982	53.35	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0.01
H	1991	076047	Carson (WA)	Umatilla R	11/03/92	17,269	17,667	44.91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1991	076046	Carson (WA)	Umatilla R	11/03/92	24,221	24,715	45.36	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00
H	1991	076045	Carson (WA)	Umatilla R	11/03/92	24,638	24,638	45.82	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0.02
H	1991	076044	Carson (WA)	Umatilla R	11/04/92	15,423	15,730	34.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1991	076042	Carson (WA)	Umatilla R	11/04/92	25,104	25,104	34.89	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
H	1991	076043	Carson (WA)	Umatilla R	11/04/92	24,992	25,075	34.89	0	0	0	0	0	0	0	0	0	0	0	1	3	3	0.03
H	1991	071456	Carson (WA)	Umatilla R	03/22/93	20,022	46,112	31.72	0	0	0	0	0	0	0	0	0	0	0	0	3	6	0.04
H	1991	071455	Carson (WA)	Umatilla R	03/23/93	19,951	45,430	30.65	0	0	0	0	0	0	0	0	0	0	0	1	3	6	0.05
H	1992	075944	Carson (WA)	Umatilla R	03/25/94	20,109	103,980	36.28	0	0	0	0	0	0	0	0	0	0	0	2	96	7	0.52
H	1992	075945	Carson (WA)	Umatilla R	03/25/94	20,219	99,676	37.17	0	0	0	0	0	0	0	0	0	0	0	3	81	4	0.44
H	1992	070250	Carson (WA)	Umatilla R	03/25/94	26,716	99,616	38.76	0	0	0	0	0	0	0	0	0	0	0	5	117	7	0.48
H	1992	070251	Carson (WA)	Umatilla R	03/25/94	26,305	101,830	38.76	0	0	0	0	0	0	0	0	0	0	1	6	121	5	0.51
H	1987	074258	Lookingglass	Hood R, W Fk	03/09/89	52,248	134,317	42.38	0	0	0	0	0	0	0	0	0	0	0	0	28	7	0.07
H	1988	075223	Lookingglass	Hood R, W Fk	03/14/90	52,891	193,193	44.90	0	0	0	0	0	0	0	0	0	0	0	0	78	30	0.20
H	1989	075530	Lookingglass	Hood R, W Fk	03/25/91	52,068	125,327	44.90	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0.03
H	1990	075659	Lookingglass	Hood R, W Fk	04/02/92	52,732	163,295	45.40	0	0	0	0	0	0	0	0	0	0	0	0	13	4	0.03
N	1991	073335	Deschutes R	Hood R, W Fk	04/01/93	39,739	40,317	40.14	0	0	0	0	0	0	0	0	0	0	1	0	8	0	0.02
N	1993	070549	Deschutes R	Hood R, W Fk	04/05/95	42,861	170,004	33.82	0	0	0	0	0	0	0	0	0	0	1	0	17	0	0.04
CEDC Fisheries:																							
H	1994	071237	S Santiam R	Blind Slough	02/29/96	52,369	199,389	45.77	2	0	0	0	0	0	0	0	0	0	0	1	21	37	0.12
H	1995	091716	M Willamette R	Blind Slough	03/05/97	58,002	171,229	29.88	10	0	0	0	0	0	0	0	0	0	0	0	45	93	0.26

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%		
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					Surv.	
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+
SPRING CHINOOK SALMON (Continued)																								
CEDC Fisheries (Continued):																								
H	1996	092217	M Willamette R	Blind Slough	03/03/98	44,452	198,034	36.00	0	0	0	0	0	0	0	0	0	0	0	22	26	0	0.11	
H	1996	092036	M Willamette R	Blind Slough	04/01/98	23,319	25,396	39.10	3	0	0	0	0	0	0	0	0	0	0	91	85	0	0.77	
H	1996	092035	M Willamette R	Blind Slough	04/01/98	24,203	25,284	47.25	4	0	0	0	0	0	0	0	0	0	0	52	51	0	0.44	
H	1988	074460	M Willamette R	Klaskanine R, SF	06/01/89	28,050	116,079	9.45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00	
H	1989	075232	M Willamette R	Klaskanine R, SF	06/11/90	27,491	118,674	7.56	0	0	0	0	0	1	0	0	0	0	0	1	8	0	0.04	
H	1990	075603	Clackamas R	Klaskanine R, SF	06/14/91	26,472	119,627	8.95	0	0	4	0	0	0	0	0	0	0	0	0	1	0	0.02	
H	1991	071425	M Willamette R	Klaskanine R, SF	06/05/92	26,630	74,517	11.90	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0.02	
H	1992	076146	N Santiam R	Klaskanine R, SF	03/01/94	24,668	109,974	48.77	0	2	0	0	0	0	0	0	0	0	0	4	1	0	0.03	
H	1993	070351	M Willamette R	Klaskanine R, SF	02/07/95	51,829	86,978	31.48	0	0	0	0	0	0	0	0	0	0	4	1	12	19	0	0.07
H	1994	071119	S Santiam R	Klaskanine R, SF	01/31/96	52,205	76,618	30.83	0	0	0	0	0	0	0	0	0	0	0	5	7	0	0.02	
H	1995	071337	M Willamette R	Klaskanine R, SF	03/04/97	25,149	76,821	28.35	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0.04	
H	1994	071238	S Santiam R	Tongue Point	02/05/96	52,119	100,138	44.86	3	0	0	0	0	0	0	0	0	0	0	10	18	0	0.06	
H	1994	071236	S Santiam R	Tongue Point	02/29/96	48,281	142,181	41.96	7	0	0	0	0	0	0	0	0	0	0	12	17	0	0.07	
H	1995	091717	M Willamette R	Tongue Point	03/05/97	51,461	151,905	27.32	5	0	0	0	0	0	0	0	0	0	0	38	70	2	0.22	
H	1995	091718	M Willamette R	Tongue Point	04/04/97	50,309	149,889	31.07	18	0	0	0	0	0	0	0	0	0	0	21	69	4	0.22	
H	1996	092218	M Willamette R	Tongue Point	03/03/98	46,710	128,314	32.87	9	0	0	0	0	0	0	0	0	0	1	1	92	104	0	0.44
H	1996	092219	M Willamette R	Tongue Point	04/01/98	43,987	125,456	33.35	15	0	0	0	0	0	0	0	0	0	4	198	244	0	1.05	
H	1988	073563	M Willamette R	Youngs R	07/25/89	25,914	109,204	15.64	2	0	0	0	0	0	0	0	0	0	0	10	10	0	0.08	
H	1988	074504	M Willamette R	Youngs R	03/06/90	26,670	54,309	62.99	10	3	0	0	2	0	0	0	0	0	0	75	212	3	1.14	
H	1989	075233	M Willamette R	Youngs R	07/25/90	28,688	221,790	29.07	5	0	0	0	0	0	0	0	0	0	4	16	3	0	0.10	
H	1990	075604	Clackamas R	Youngs R	07/20/91	26,597	210,867	30.64	0	0	0	0	0	0	0	0	0	0	0	5	6	0	0.04	
H	1990	075454	Clackamas R	Youngs R	02/20/92	22,592	31,667	87.21	17	6	0	0	8	0	0	0	0	2	1	29	129	6	0.88	
H	1991	071426	M Willamette R	Youngs R	06/23/92	26,352	301,786	26.80	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00	
H	1992	070318	N Santiam R	Youngs R	03/08/94	26,418	301,361	50.96	2	3	0	0	0	0	0	0	0	1	2	67	21	0	0.36	
H	1993	070345	M Willamette R	Youngs R	02/09/95	39,519	79,336	37.45	10	2	0	0	5	0	0	0	0	1	3	118	91	4	0.59	
H	1993	070343	M Willamette R	Youngs R	03/07/95	52,446	156,519	56.00	28	10	0	0	0	0	0	0	0	26	5	196	201	2	0.89	
H	1993	070344	M Willamette R	Youngs R	03/30/95	52,224	127,367	61.21	33	1	0	0	0	0	0	0	0	12	1	132	168	10	0.68	
H	1994	071121	S Santiam R	Youngs R	02/05/96	53,685	142,976	38.41	3	0	0	0	0	0	0	0	0	0	1	29	36	0	0.13	
H	1994	071122	S Santiam R	Youngs R	02/29/96	51,737	133,517	42.75	3	0	0	0	0	0	0	0	0	0	0	32	23	0	0.11	
H	1994	071120	Clackamas R	Youngs R	03/21/96	41,085	97,945	45.31	10	0	0	0	0	0	0	0	0	2	36	60	3	0.27		
H	1995	091737	M Willamette R	Youngs R	02/01/97	49,944	100,680	24.87	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.00	
H	1995	091738	M Willamette R	Youngs R	03/05/97	49,341	96,540	29.63	2	0	0	0	0	0	0	0	0	0	0	15	14	0	0.06	
H	1995	091739	M Willamette R	Youngs R	04/04/97	50,208	95,396	31.07	5	0	0	0	0	0	0	0	0	0	0	17	46	0	0.14	
H	1995	091740	M Willamette R	Youngs R	04/04/97	50,139	94,612	35.71	2	0	0	0	0	0	0	0	0	0	0	43	61	0	0.21	
H	1996	092216	M Willamette R	Youngs R	03/03/98	50,865	149,878	39.10	10	0	0	0	0	0	0	0	0	0	1	104	89	0	0.40	
H	1996	092214	M Willamette R	Youngs R	04/01/98	47,147	153,265	37.80	31	0	0	0	0	0	4	0	0	0	1	347	344	0	1.54	
H	1996	092215	M Willamette R	Youngs R	04/01/98	49,392	153,139	47.25	49	0	2	0	0	3	0	0	0	0	1	572	628	0	2.54	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																		% Surv.						
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries											
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+					
SPRING CHINOOK SALMON (Continued)																													
Clackamas:																													
H	1987	075052	Clackamas R	Clackamas R	09/27/88	56,076	503,632	44.90	11	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	36	38	0	0.16
H	1987	074653	Clackamas R	Clackamas R	03/14/89	5,795	625,310	46.75	9	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	37	1	1.43
H	1988	075201	Clackamas R	Clackamas R	08/14/89	28,856	397,502	40.86	13	0	11	0	0	11	0	6	0	0	0	0	0	0	0	1	12	47	9	0	0.38
H	1988	075202	Clackamas R	Clackamas R	09/12/89	31,363	323,283	43.61	14	9	0	0	4	10	0	0	0	0	0	0	0	0	0	0	12	29	8	0	0.27
H	1988	075203	Clackamas R	Clackamas R	03/12/90	16,280	290,926	40.49	27	8	18	4	2	38	0	3	3	0	0	0	0	0	2	8	86	154	1	2.17	
H	1988	075205	Clackamas R	Clackamas R	03/12/90	15,333	272,542	43.61	24	7	11	0	4	16	0	0	2	0	0	0	0	0	1	6	135	137	4	2.26	
H	1989	075436	Clackamas R	Clackamas R	08/15/90	26,743	157,653	41.61	3	0	3	0	0	3	0	0	0	0	0	0	0	0	1	4	28	4	0	0.17	
H	1989	075437	Clackamas R	Clackamas R	08/15/90	26,773	157,331	41.61	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	29	7	0	0.21	
H	1989	075438	Clackamas R	Clackamas R	09/14/90	25,546	158,511	54.64	8	0	7	0	0	7	0	0	2	0	0	0	0	0	0	0	0	15	9	0	0.19
H	1989	075439	Clackamas R	Clackamas R	09/14/90	26,641	159,663	54.64	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	25	9	1	0.21	
H	1989	075349	Clackamas R	Clackamas R	03/18/91	15,818	248,316	39.44	14	1	3	0	4	0	0	0	4	0	0	0	0	0	0	2	25	80	4	0.87	
H	1989	075350	Clackamas R	Clackamas R	03/18/91	15,456	248,207	39.44	18	4	14	0	0	0	0	0	0	0	0	0	0	0	0	1	30	66	9	0.92	
H	1990	075452	Clackamas R	Clackamas R	08/05/91	49,085	308,340	33.59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	19	7	0	0.06		
H	1990	075346	Clackamas R	Clackamas R	09/03/91	50,949	315,000	50.39	11	0	2	0	0	0	0	0	0	0	0	0	0	0	5	48	34	0	0.20		
H	1990	075661	Clackamas R	Clackamas R	03/16/92	34,495	412,274	51.54	12	6	9	0	0	0	1	0	0	0	0	0	0	0	0	7	147	149	0	0.96	
H	1991	075811	Clackamas R	Clackamas R	08/24/92	45,463	302,092	32.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0.01	
H	1991	070017	Clackamas R	Clackamas R	08/24/92	43,091	282,079	38.43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.01	
H	1991	075735	Clackamas R	Clackamas R	03/29/93	30,427	447,387	31.07	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	95	43	0	0.49	
H	1992	075903	Clackamas R	Clackamas R	08/13/93	46,472	300,602	39.78	0	3	4	0	0	0	0	0	0	0	0	0	3	0	20	56	2	0	0.19		
H	1992	075902	Clackamas R	Clackamas R	09/13/93	52,297	297,112	52.13	0	0	0	0	0	0	0	0	6	0	0	0	0	1	4	39	5	0	0.11		
H	1992	070346	Clackamas R	Clackamas R	04/04/94	28,594	239,158	25.48	2	0	0	0	7	0	0	0	5	0	0	0	0	1	0	76	58	1	0.52		
H	1993	070231	Clackamas R	Clackamas R	08/08/94	51,497	317,468	40.46	0	0	2	0	0	0	0	0	2	0	0	0	0	0	9	64	7	0	0.16		
H	1993	070361	Clackamas R	Clackamas R	08/11/94	51,100	335,055	32.15	0	0	0	0	0	0	0	0	3	4	0	0	0	0	5	47	12	0	0.14		
H	1993	070446	Clackamas R	Clackamas R	04/03/95	29,005	361,702	31.92	12	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	98	170	0	0.97	
H	1994	071518	Clackamas R	Clackamas R	08/07/95	24,761	345,103	29.06	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0.03	
H	1994	074522	Clackamas R	Clackamas R	08/07/95	25,946	267,698	30.22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0.04	
H	1994	070859	Clackamas R	Clackamas R	03/19/96	25,985	379,140	41.20	19	8	0	0	0	3	0	0	3	0	0	0	0	3	1	117	137	1	1.12		
H	1995	070237	Clackamas R	Clackamas R	08/14/96	45,475	615,580	43.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	25	4	0	0.08		
H	1995	071357	Clackamas R	Clackamas R	03/31/97	29,211	390,111	33.35	33	0	0	0	0	6	3	0	0	0	0	0	0	0	1	101	149	4	1.02		
H	1996	092116	Clackamas R	Clackamas R	08/12/97	32,774	683,121	39.78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	7	2	0	0.05		
H	1996	092318	Clackamas R	Clackamas R	03/19/98	31,007	487,334	38.12	30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	193	101	0	1.05		
H	1987	074654	M Willamette R	Clackamas R	03/09/89	15,417	303,953	47.74	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	76	1	0.98	
H	1991	075655	Clackamas R	Sandy R	03/16/93	51,764	371,484	33.10	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	31	3	0	0.08		
H	1992	070354	Clackamas R	Sandy R	03/22/94	25,177	344,893	37.48	3	0	4	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0.05		
H	1993	070553	Clackamas R	Sandy R	03/15/95	23,927	459,479	45.31	6	4	0	0	0	2	0	0	3	0	0	0	0	0	0	5	12	0	0.13		
H	1994	071151	Clackamas R	Sandy R	03/15/96	23,634	421,768	48.77	26	0	12	0	0	0	0	0	3	0	0	0	0	0	0	11	9	0	0.26		
H	1995	075333	Clackamas R	Sandy R	03/20/97	23,280	429,117	42.59	5	0	2	0	0	2	0	0	0	0	0	0	0	0	0	10	10	0	0.12		
H	1996	092063	Clackamas R	Sandy R	03/19/98	25,001	358,769	44.91	76	0	0	0	0	3	0	0	0	0	0	0	0	0	0	5	8	0	0.37		

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%	
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries						
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5
SPRING CHINOOK SALMON (Continued)																							
Irrigon:																							
H	1987	074523	Rapid R (ID)	Lookingglass Cr	05/13/88	42,697	47,837	15.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1987	074524	Rapid R (ID)	Lookingglass Cr	05/13/88	41,703	46,723	15.48	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
H	1987	074525	Rapid R (ID)	Lookingglass Cr	05/13/88	41,524	46,522	15.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1988	074534	Rapid R (ID)	Lookingglass Cr	05/15/89	41,667	42,322	12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1988	074634	Rapid R (ID)	Lookingglass Cr	05/15/89	41,267	42,322	12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1988	074736	Rapid R (ID)	Lookingglass Cr	05/15/89	40,234	42,056	12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Lookingglass:																							
M	1987	074544	Imnaha R	Imnaha R	04/05/89	45,195	47,616	28.34	0	0	0	0	0	0	0	0	0	0	20	47	18	0	0.19
M	1987	074545	Imnaha R	Imnaha R	04/05/89	45,394	47,251	28.34	0	0	0	0	0	0	0	0	0	2	10	31	11	0	0.12
M	1987	074546	Imnaha R	Imnaha R	04/05/89	44,002	47,453	28.34	0	0	0	0	0	0	0	0	0	0	15	49	11	0	0.17
M	1988	074733	Imnaha R	Imnaha R	03/31/90	65,002	76,019	24.78	0	0	0	0	0	0	0	0	0	0	42	81	78	0	0.31
M	1988	074734	Imnaha R	Imnaha R	03/31/90	61,609	73,341	24.78	0	0	0	0	0	0	0	0	0	0	51	93	77	0	0.36
M	1988	074729	Imnaha R	Imnaha R	03/31/90	48,878	49,272	35.99	0	0	0	0	0	0	0	0	0	2	24	98	67	1	0.40
M	1988	074730	Imnaha R	Imnaha R	03/31/90	50,779	51,163	35.99	0	0	0	0	0	0	0	0	0	1	23	67	79	1	0.34
M	1989	075046	Imnaha R	Imnaha R	03/22/91	42,834	79,611	20.16	0	0	0	0	0	0	0	0	0	0	3	39	3	0	0.11
M	1989	075045	Imnaha R	Imnaha R	03/22/91	42,804	79,654	20.43	0	0	0	0	0	0	0	0	0	0	2	29	15	0	0.11
M	1989	075043	Imnaha R	Imnaha R	03/22/91	40,770	56,848	27.49	0	0	0	0	0	0	0	0	0	0	9	38	5	0	0.13
M	1989	075040	Imnaha R	Imnaha R	03/22/91	41,582	51,557	29.26	0	0	0	0	0	0	0	0	0	0	13	38	4	0	0.13
M	1990	075848	Imnaha R	Imnaha R	03/30/92	42,444	43,555	21.00	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.01
M	1990	075849	Imnaha R	Imnaha R	03/30/92	43,433	43,547	21.00	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.01
M	1990	075844	Imnaha R	Imnaha R	03/30/92	42,208	42,894	21.60	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.00
M	1990	075845	Imnaha R	Imnaha R	03/30/92	42,902	42,902	21.60	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0.02
M	1990	075846	Imnaha R	Imnaha R	03/30/92	45,075	45,256	41.23	0	0	0	0	0	0	0	0	0	1	6	14	0	0	0.05
M	1990	075847	Imnaha R	Imnaha R	03/30/92	43,315	44,346	41.23	0	0	0	0	0	0	0	0	0	0	7	6	1	0	0.03
M	1991	071540	Imnaha R	Imnaha R	04/12/93	49,077	49,470	18.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
M	1991	071541	Imnaha R	Imnaha R	04/12/93	49,365	49,465	18.90	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
M	1991	071538	Imnaha R	Imnaha R	04/12/93	29,330	29,548	37.80	0	0	0	0	0	0	0	0	0	0	6	1	1	0	0.03
M	1991	071539	Imnaha R	Imnaha R	04/12/93	29,114	29,176	37.80	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00
M	1992	076362	Imnaha R	Imnaha R	04/11/94	81,997	84,013	17.65	0	0	0	0	0	0	0	0	0	0	1	18	4	0	0.03
M	1992	076363	Imnaha R	Imnaha R	04/11/94	80,404	83,900	18.90	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0.00
M	1992	070117	Imnaha R	Imnaha R	04/11/94	81,508	83,930	22.23	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.00
M	1992	070116	Imnaha R	Imnaha R	04/11/94	78,785	83,334	22.34	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.01
M	1992	070118	Imnaha R	Imnaha R	04/11/94	49,471	52,075	29.84	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00
M	1992	070119	Imnaha R	Imnaha R	04/11/94	49,682	51,365	30.64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
M	1993	070746	Imnaha R	Imnaha R	03/28/95	72,015	72,959	18.36	0	0	0	0	0	0	0	0	0	0	5	16	14	0	0.05
M	1993	070748	Imnaha R	Imnaha R	03/28/95	75,831	77,318	19.53	0	0	0	0	0	0	0	0	3	0	1	42	8	0	0.07
M	1993	070745	Imnaha R	Imnaha R	03/28/95	77,200	77,952	20.41	0	0	0	0	0	0	0	0	0	0	2	35	19	0	0.07

Appendix Table A. Continued.

STOCK GROUP,			Ocean Catch																			%			
stock, (source H, N, M),		Release	Number Released		Size	Oregon Areas													Freshwater Recoveries						
brood, tagcode	Hatchery	Date	Ad+CWT	Total	(gm)	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	6+	Surv.		
SPRING CHINOOK SALMON (Continued)																									
Lookingglass (Continued):																									
M	1993	070751	Imnaha R	Imnaha R	03/28/95	47,084	48,723	25.74	0	0	0	0	0	0	0	0	0	0	14	41	11	0	0.14		
M	1993	070750	Imnaha R	Imnaha R	03/28/95	49,576	50,222	26.19	0	0	0	0	0	0	0	0	0	0	1	5	24	8	0	0.08	
M	1993	070747	Imnaha R	Imnaha R	04/24/95	64,414	67,130	22.13	0	0	0	0	0	0	0	0	0	0	9	26	7	0	0.07		
M	1994	071229	Imnaha R	Imnaha R	04/03/96	22,069	22,840	22.32	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.00	
M	1994	071228	Imnaha R	Imnaha R	04/03/96	22,643	22,915	23.36	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.01	
M	1994	071230	Imnaha R	Imnaha R	04/03/96	10,695	10,887	23.85	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0.02	
M	1994	071225	Imnaha R	Imnaha R	04/03/96	13,635	13,839	25.74	0	0	0	0	0	0	0	0	0	0	1	7	2	0	0	0.07	
M	1994	071226	Imnaha R	Imnaha R	04/03/96	13,376	13,890	25.89	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.01	
M	1994	071227	Imnaha R	Imnaha R	04/03/96	6,847	6,869	27.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
M	1995	091719	Imnaha R	Imnaha R	04/07/97	4,924	4,980	19.72	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0.16	
M	1995	091723	Imnaha R	Imnaha R	04/07/97	15,858	16,588	19.72	0	0	0	0	0	0	0	0	0	0	9	16	1	0	0	0.16	
M	1995	091722	Imnaha R	Imnaha R	04/07/97	12,749	12,835	21.91	0	0	0	0	0	0	0	0	0	0	13	15	3	0	0	0.24	
M	1995	091721	Imnaha R	Imnaha R	04/07/97	9,742	9,896	29.84	0	0	0	0	0	0	0	0	0	0	1	8	5	3	0	0	0.17
M	1995	091720	Imnaha R	Imnaha R	04/07/97	6,390	6,613	32.17	0	0	0	0	0	0	0	0	0	0	0	1	8	1	0	0	0.16
	1996	092202	Imnaha R	Imnaha R	04/06/98	8,596	9,514	19.06	0	0	0	0	0	0	0	0	0	0	2	15	0	0	0	0.20	
	1996	092206	Imnaha R	Imnaha R	04/06/98	18,691	19,874	19.38	0	0	0	0	0	0	0	0	0	0	5	58	0	0	0	0.34	
	1996	092201	Imnaha R	Imnaha R	04/06/98	9,000	9,493	19.55	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0.20	
	1996	092205	Imnaha R	Imnaha R	04/06/98	18,028	19,055	19.55	0	0	0	0	0	0	0	0	0	0	1	36	0	0	0	0.21	
	1996	092163	Imnaha R	Imnaha R	04/06/98	6,619	6,996	27.66	0	0	0	0	0	0	0	0	0	0	2	18	0	0	0	0.30	
	1996	092203	Imnaha R	Imnaha R	04/06/98	12,670	14,023	29.45	0	0	0	0	0	0	0	0	0	0	1	26	0	0	0	0.21	
	1996	092124	Imnaha R	Imnaha R	04/06/98	1,698	1,806	31.28	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0.18	
	1996	092204	Imnaha R	Imnaha R	04/06/98	11,630	12,367	31.28	0	0	0	0	0	0	0	0	0	0	1	24	0	0	0	0.21	
H	1987	074630	Rapid R (ID)	Lookingglass Cr	09/23/88	43,220	44,225	20.90	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.01	
H	1987	074631	Rapid R (ID)	Lookingglass Cr	09/23/88	40,399	41,339	20.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1987	074632	Rapid R (ID)	Lookingglass Cr	11/01/88	42,837	43,176	21.70	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0.01	
H	1987	074633	Rapid R (ID)	Lookingglass Cr	11/01/88	42,796	43,134	21.70	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.00	
H	1987	074531	Rapid R (ID)	Lookingglass Cr	04/03/89	43,390	43,561	23.26	0	0	0	0	0	0	0	0	0	0	0	12	7	0	0	0.04	
H	1987	074532	Rapid R (ID)	Lookingglass Cr	04/03/89	42,987	43,157	23.26	0	0	0	0	0	0	0	0	0	0	1	10	8	0	0	0.04	
H	1987	074535	Rapid R (ID)	Lookingglass Cr	04/03/89	43,283	50,591	32.86	0	0	0	0	0	0	0	0	0	0	2	0	23	15	0	0.09	
H	1987	074533	Rapid R (ID)	Lookingglass Cr	04/03/89	43,287	50,491	33.84	0	0	0	0	0	0	0	0	0	0	1	1	13	20	1	0.08	
H	1988	074740	Rapid R (ID)	Lookingglass Cr	04/02/90	41,780	258,974	22.45	0	0	0	0	0	0	0	0	0	0	0	6	64	69	0	0.33	
H	1988	074739	Rapid R (ID)	Lookingglass Cr	04/02/90	42,187	257,822	22.68	0	0	0	0	0	0	0	0	0	0	0	3	73	70	0	0.35	
H	1988	074745	Rapid R (ID)	Lookingglass Cr	04/02/90	43,479	51,508	34.89	0	0	0	0	0	0	0	0	0	0	18	147	45	0	0	0.48	
H	1988	074743	Rapid R (ID)	Lookingglass Cr	04/02/90	43,788	51,335	37.17	0	0	0	0	0	0	0	0	0	0	1	15	92	59	0	0.38	
H	1989	075053	Rapid R (ID)	Lookingglass Cr	04/01/91	42,705	118,145	21.80	0	0	0	0	0	0	0	0	0	0	1	0	47	4	0	0.12	
H	1989	075054	Rapid R (ID)	Lookingglass Cr	04/01/91	43,450	118,564	22.23	0	0	0	0	0	0	0	0	0	0	0	0	41	4	0	0.10	
H	1989	075048	Rapid R (ID)	Lookingglass Cr	04/01/91	42,698	47,416	32.39	0	0	0	0	0	0	0	0	0	0	0	38	2	0	0	0.09	
H	1989	075051	Rapid R (ID)	Lookingglass Cr	04/01/91	42,859	47,509	33.35	0	0	0	0	0	0	0	0	0	0	2	39	0	0	0	0.10	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%				
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries					Surv.				
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+		
SPRING CHINOOK SALMON (Continued)																										
Lookingglass (Continued):																										
H	1990	075306	Rapid R (ID)	Lookingglass Cr	04/01/92	43,738	425,445	23.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
H	1990	075305	Rapid R (ID)	Lookingglass Cr	04/01/92	43,631	424,069	23.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H	1990	074746	Rapid R (ID)	Lookingglass Cr	04/01/92	39,623	50,595	46.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
H	1990	075055	Rapid R (ID)	Lookingglass Cr	04/01/92	40,123	50,759	47.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
H	1991	071548	Rapid R (ID)	Lookingglass Cr	04/07/93	35,011	35,152	22.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
H	1991	071550	Rapid R (ID)	Lookingglass Cr	04/07/93	35,351	35,626	22.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1991	071551	Rapid R (ID)	Lookingglass Cr	04/07/93	35,460	35,626	22.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
H	1991	071546	Rapid R (ID)	Lookingglass Cr	04/07/93	35,580	35,662	22.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
H	1991	071547	Rapid R (ID)	Lookingglass Cr	04/07/93	35,583	35,662	22.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1991	071553	Rapid R (ID)	Lookingglass Cr	04/07/93	34,812	35,093	22.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
H	1991	071555	Rapid R (ID)	Lookingglass Cr	04/07/93	34,822	34,965	22.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H	1991	071552	Rapid R (ID)	Lookingglass Cr	04/07/93	36,445	36,738	22.91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
H	1991	071554	Rapid R (ID)	Lookingglass Cr	04/07/93	35,190	35,190	22.91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1991	071556	Rapid R (ID)	Lookingglass Cr	04/07/93	35,176	35,176	22.91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1991	071557	Rapid R (ID)	Lookingglass Cr	04/07/93	34,753	34,962	23.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1991	071558	Rapid R (ID)	Lookingglass Cr	04/07/93	23,063	23,155	23.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
H	1991	071549	Rapid R (ID)	Lookingglass Cr	04/07/93	35,002	35,212	23.26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1992	070441	Rapid R (ID)	Lookingglass Cr	04/10/94	74,132	76,403	22.23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08
H	1992	075307	Rapid R (ID)	Lookingglass Cr	04/10/94	68,959	71,133	22.23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13
H	1992	075308	Rapid R (ID)	Lookingglass Cr	04/10/94	68,693	71,371	22.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12
H	1992	070434	Rapid R (ID)	Lookingglass Cr	04/10/94	80,275	83,838	22.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
H	1992	070439	Rapid R (ID)	Lookingglass Cr	04/10/94	79,827	81,285	23.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09
H	1992	070436	Rapid R (ID)	Lookingglass Cr	04/10/94	77,160	81,071	23.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11
H	1992	070437	Rapid R (ID)	Lookingglass Cr	04/10/94	79,481	81,158	24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.17
H	1992	070447	Rapid R (ID)	Lookingglass Cr	04/10/94	32,160	34,522	24.51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13
H	1992	070448	Rapid R (ID)	Lookingglass Cr	04/10/94	33,231	34,647	24.65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13
H	1992	070440	Rapid R (ID)	Lookingglass Cr	05/06/94	67,540	69,068	27.16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
H	1992	070438	Rapid R (ID)	Lookingglass Cr	05/06/94	77,722	80,627	28.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
H	1993	070824	Rapid R (ID)	Lookingglass Cr	04/05/95	77,133	85,980	20.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09
H	1993	070829	Rapid R (ID)	Lookingglass Cr	04/05/95	87,087	88,189	20.23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07
H	1993	070828	Rapid R (ID)	Lookingglass Cr	04/05/95	85,509	87,745	20.98	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12
H	1993	070825	Rapid R (ID)	Lookingglass Cr	04/05/95	75,678	86,299	21.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08
H	1993	070823	Rapid R (ID)	Lookingglass Cr	04/06/95	84,234	86,934	19.79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H	1993	070827	Rapid R (ID)	Lookingglass Cr	04/06/95	86,435	88,097	20.32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15
H	1993	070826	Rapid R (ID)	Lookingglass Cr	04/06/95	65,983	66,204	21.27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12
H	1993	070822	Rapid R (ID)	Lookingglass Cr	04/06/95	68,559	68,782	21.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07
H	1994	071234	Rapid R (ID)	Lookingglass Cr	04/05/96	32,997	34,786	22.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
H	1994	071232	Rapid R (ID)	Lookingglass Cr	04/05/96	34,379	35,292	22.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																						
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries					% Surv.					
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+			
SPRING CHINOOK SALMON (Continued)																											
McKenzie (Continued):																											
H	1993	070849	McKenzie R	Willamette R	03/08/95	26,957	42,075	51.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	
H	1993	070847	McKenzie R	Willamette R	03/08/95	31,139	43,208	52.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0.01	
H	1993	070836	McKenzie R	Willamette R	03/08/95	19,899	30,662	52.68	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0.07	
H	1994	071045	Clackamas R	Willamette R	11/08/95	33,666	33,666	50.91	12	0	0	0	0	0	0	5	0	0	0	0	0	0	5	14	5	0.12	
H	1994	071046	Clackamas R	Willamette R	11/08/95	25,317	25,624	52.08	9	0	2	0	0	0	0	0	0	0	0	0	0	0	1	15	16	0.17	
H	1994	071047	Clackamas R	Willamette R	11/08/95	30,543	32,842	53.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0.02	
H	1994	071048	Clackamas R	Willamette R	11/09/95	28,853	31,917	53.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0.01	
H	1995	091761	McKenzie R	Willamette R	03/13/97	29,020	42,067	44.91	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	4	0.08	
H	1995	091763	McKenzie R	Willamette R	03/13/97	29,888	42,720	50.96	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0.02	
H	1996	092231	McKenzie R	Willamette R	11/06/97	31,356	31,716	54.58	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	21	0.11	
H	1996	092228	McKenzie R	Willamette R	11/06/97	30,368	31,088	57.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	30	0.19	
H	1996	092229	McKenzie R	Willamette R	11/06/97	30,916	32,016	58.15	22	0	0	0	0	0	0	0	0	0	0	0	0	0	1	45	8	0.25	
H	1996	092230	McKenzie R	Willamette R	11/06/97	30,273	31,692	61.21	13	0	0	0	0	0	0	0	0	0	0	0	0	0	6	25	18	0.20	
H	1996	092232	McKenzie R	Willamette R	03/13/98	36,135	41,175	50.40	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9	39	0.16	
H	1996	092233	McKenzie R	Willamette R	03/13/98	30,798	35,783	53.36	5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11	4	0.07	
H	1994	071050	Clackamas R	Clackamas R	03/15/96	39,454	40,014	55.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	5	0.03	
H	1994	071051	Clackamas R	Clackamas R	03/15/96	39,457	39,655	59.60	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.03	
H	1994	071049	Clackamas R	Clackamas R	03/15/96	41,471	42,078	61.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0.01	
H	1994	071243	Clackamas R	Clackamas R	03/15/96	38,087	38,240	61.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0.02	
H	1995	091758	McKenzie R	Clackamas R	11/08/96	29,049	29,491	56.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	19	0.12	
H	1995	091759	McKenzie R	Clackamas R	11/08/96	29,407	29,525	57.42	6	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	7	0.08	
H	1995	091756	McKenzie R	Clackamas R	11/08/96	29,610	29,942	63.88	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	6	0.12	
H	1995	091757	McKenzie R	Clackamas R	11/08/96	28,955	29,792	63.88	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	48	0	0.18	
H	1995	091754	McKenzie R	Clackamas R	11/08/96	33,415	34,916	64.80	9	0	0	0	0	0	0	0	0	0	0	0	0	0	5	52	18	0.25	
H	1995	091755	McKenzie R	Clackamas R	11/08/96	27,699	29,937	65.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	31	4	0.17
H	1995	091801	M Willamette R	Clackamas R	03/13/97	30,529	42,561	47.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	11	0.08	
H	1995	091760	McKenzie R	Clackamas R	03/13/97	30,170	39,085	49.84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
H	1995	091762	McKenzie R	Clackamas R	03/13/97	30,120	32,307	50.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0.01	
H	1995	091802	M Willamette R	Clackamas R	03/13/97	24,996	31,016	55.31	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8	0.05	
H	1996	092239	McKenzie R	Clackamas R	03/12/98	39,106	41,718	44.04	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	94	0.54	
H	1996	092236	McKenzie R	Clackamas R	03/12/98	37,178	41,924	48.25	19	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	31	63	0.31
H	1996	092237	McKenzie R	Clackamas R	03/12/98	36,825	39,251	48.25	10	2	1	0	0	0	0	0	0	0	0	0	0	0	1	14	40	0.18	
H	1996	092238	McKenzie R	Clackamas R	03/12/98	39,168	41,695	48.25	18	0	1	0	0	0	0	0	0	0	0	0	0	0	0	46	75	0.36	
H	1996	092235	McKenzie R	Clackamas R	03/12/98	36,118	41,596	52.74	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	42	0.27	
H	1996	092234	McKenzie R	Clackamas R	03/12/98	34,071	38,218	54.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	9	0.14	
H	1996	092245	McKenzie R	Mohawk R	02/05/98	35,455	42,301	45.82	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	35	61	0.29	
H	1995	076048	S Santiam R	Molalla R	03/18/97	19,881	63,890	44.91	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0.04	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																											
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					% Surv.									
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+								
SPRING CHINOOK SALMON (Continued)																																
Round Butte:																																
H	1987	074623	Deschutes R	Deschutes R	04/17/89	27,322	29,528	71.99	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	41	260	13	0	1.20
H	1987	074622	Deschutes R	Deschutes R	04/18/89	26,546	28,186	62.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	58	292	33	0	1.51
H	1987	074626	Deschutes R	Deschutes R	05/04/89	19,971	20,458	42.78	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	8	15	243	19	0	1.50
H	1987	074624	Deschutes R	Deschutes R	05/04/89	19,396	20,473	47.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	58	205	30	0	1.58
H	1987	074625	Deschutes R	Deschutes R	05/04/89	19,608	20,408	48.77	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	19	221	18	0	1.37
M	1988	075062	Deschutes R	Deschutes R	04/19/90	28,093	28,608	75.59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	66	200	11	0	1.04
M	1988	075061	Deschutes R	Deschutes R	04/20/90	28,821	29,590	69.77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	64	137	7	0	0.77
M	1988	075058	Deschutes R	Deschutes R	05/16/90	23,673	66,964	42.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	73	388	38	0	2.11
M	1988	075059	Deschutes R	Deschutes R	05/16/90	20,757	67,634	46.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	70	266	32	0	1.79
M	1988	075060	Deschutes R	Deschutes R	05/16/90	20,901	66,651	51.54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	68	307	30	0	1.95
H	1989	075361	Deschutes R	Deschutes R	04/23/91	29,220	29,959	74.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	26	247	5	0	0.96
H	1989	075362	Deschutes R	Deschutes R	04/23/91	29,220	29,958	74.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21	196	12	0	0.79
H	1989	075402	Deschutes R	Deschutes R	05/14/91	20,873	71,737	43.19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	93	2	0	0.48
H	1989	075363	Deschutes R	Deschutes R	05/14/91	20,230	68,504	47.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	172	5	0	0.95
H	1989	075401	Deschutes R	Deschutes R	05/14/91	20,664	70,733	47.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	148	5	0	0.83
M	1990	075649	Deschutes R	Deschutes R	04/20/92	27,603	28,575	68.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	51	1	0	0.25
M	1990	075648	Deschutes R	Deschutes R	04/28/92	28,003	28,575	70.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	42	1	0	0.19
M	1990	075645	Deschutes R	Deschutes R	05/20/92	20,852	70,511	46.28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	49	1	0	0.35
M	1990	075646	Deschutes R	Deschutes R	05/20/92	21,154	71,804	46.28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	21	54	2	0	0.37
M	1990	075647	Deschutes R	Deschutes R	05/20/92	21,308	71,314	46.28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	39	1	0	0.22
	1991	075008	Deschutes R	Deschutes R	04/07/93	24,411	24,735	74.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16	159	2	0	0.73
	1991	075939	Deschutes R	Deschutes R	04/27/93	20,302	22,020	45.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	46	0	0	0.26
	1991	075948	Deschutes R	Deschutes R	04/27/93	49,402	49,600	45.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	121	1	0	0.26
	1991	075938	Deschutes R	Deschutes R	04/27/93	21,351	21,589	46.28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	50	0	0	0.25
	1991	075947	Deschutes R	Deschutes R	04/27/93	48,734	49,127	46.28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	115	0	0	0.25
	1991	075940	Deschutes R	Deschutes R	04/27/93	20,425	21,122	52.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	54	0	0	0.29
	1991	075949	Deschutes R	Deschutes R	04/27/93	45,423	47,713	52.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	123	3	0	0.30
	1992	070230	Deschutes R	Deschutes R	04/18/94	26,128	26,580	75.59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0.01
	1992	070228	Deschutes R	Deschutes R	05/05/94	68,887	70,996	48.77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	289	29	0	0.57
	1992	070229	Deschutes R	Deschutes R	05/05/94	67,956	68,998	51.54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	300	20	0	0.58
	1992	070227	Deschutes R	Deschutes R	05/05/94	69,753	70,995	52.73	0	0	0	0	0	0	3	0	0	0	2	0	0	1	59	227	12	0	1	59	227	12	0	0.44
	1993	070529	Deschutes R	Deschutes R	04/17/95	27,987	29,318	79.58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	18	0	0	0.09
	1993	070526	Deschutes R	Deschutes R	05/16/95	67,314	69,446	52.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13	61	0	0	0.11
	1993	070527	Deschutes R	Deschutes R	05/16/95	67,037	70,042	52.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	44	0	0	0.08
	1993	070528	Deschutes R	Deschutes R	05/16/95	68,294	70,413	56.63	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	15	58	0	0	0.11
	1994	070936	Deschutes R	Deschutes R	04/25/96	25,654	25,680	42.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0.04
	1994	070937	Deschutes R	Deschutes R	04/25/96	18,171	19,239	57.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0.03
	1994	070938	Deschutes R	Deschutes R	05/09/96	93,755	95,545	41.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	45	0	0	0.05

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%		
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries							
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+
SPRING CHINOOK SALMON (Continued)																								
Round Butte (Continued):																								
1994	070934	Deschutes R	Deschutes R	05/09/96	62,407	63,932	54.58	0	0	0	0	0	0	0	0	0	0	0	8	72	1	0	0.13	
1994	070933	Deschutes R	Deschutes R	05/09/96	60,082	63,445	58.08	0	0	0	0	0	0	0	0	0	0	0	10	49	0	0	0.10	
1994	070935	Deschutes R	Deschutes R	05/09/96	60,427	65,625	62.91	0	0	0	0	0	0	0	0	0	0	0	8	61	0	0	0.11	
1995	091745	Deschutes R	Deschutes R	04/15/97	25,938	26,280	41.61	0	0	0	0	0	0	0	0	0	0	0	17	104	1	0	0.47	
1995	091744	Deschutes R	Deschutes R	04/15/97	14,910	15,061	69.78	0	0	0	0	0	0	0	0	0	0	0	2	72	0	0	0.50	
1995	091746	Deschutes R	Deschutes R	05/12/97	90,474	92,208	41.23	0	0	0	0	3	0	0	0	0	0	0	14	342	2	0	0.40	
1995	091743	Deschutes R	Deschutes R	05/12/97	62,530	63,418	57.42	0	0	0	0	0	0	0	0	0	0	0	3	63	3	0	0.11	
1995	091741	Deschutes R	Deschutes R	05/12/97	61,232	61,732	62.13	0	0	0	0	0	0	0	0	0	0	0	11	204	2	0	0.35	
1995	091742	Deschutes R	Deschutes R	05/12/97	61,102	61,995	63.00	0	0	0	0	0	0	0	0	0	0	0	6	116	0	0	0.20	
1996	092224	Deschutes R	Deschutes R	04/13/98	30,875	31,699	37.80	0	0	0	0	0	0	0	0	0	0	0	26	149	15	0	0.62	
1996	092223	Deschutes R	Deschutes R	04/13/98	15,216	16,397	52.74	0	0	0	0	0	0	0	0	0	0	0	10	82	11	0	0.68	
1996	092225	Deschutes R	Deschutes R	05/12/98	89,579	96,633	41.23	0	0	0	0	0	0	0	0	0	0	0	3	24	0	0	0.03	
1996	092222	Deschutes R	Deschutes R	05/12/98	61,326	64,149	45.36	0	0	0	0	0	0	0	0	0	0	0	8	33	4	0	0.07	
1996	092220	Deschutes R	Deschutes R	05/12/98	57,619	60,145	50.40	3	0	0	0	0	0	0	0	0	0	0	18	103	3	0	0.22	
1996	092221	Deschutes R	Deschutes R	05/12/98	62,075	63,213	56.00	0	0	0	0	0	0	0	0	0	0	0	6	59	5	0	0.11	
1991	075022	Deschutes R	Hood R, W Fk	04/09/93	28,133	28,810	67.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
1994	071130	Deschutes R	Hood R, W Fk	05/09/96	121,296	127,156	45.77	0	0	0	0	0	0	0	0	0	0	2	0	6	0	0	0.01	
1995	091806	Deschutes R	Hood R, W Fk	04/21/97	55,155	56,103	54.00	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0.02	
1995	091747	Deschutes R	Hood R, W Fk	04/21/97	44,338	46,369	57.42	0	0	0	0	0	0	0	0	0	0	1	1	17	0	0	0.04	
1996	092226	Deschutes R	Hood R, W Fk	04/22/98	58,233	62,929	46.76	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00	
1996	092227	Deschutes R	Hood R, W Fk	04/22/98	62,886	63,730	46.76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
South Santiam:																								
H	1987	075041	S Santiam R	Santiam R, S Fk	11/15/88	24,640	25,481	60.47	31	19	0	0	4	2	3	0	0	0	0	4	164	86	1	1.27
H	1988	075208	S Santiam R	Santiam R, S Fk	11/15/89	33,177	479,297	62.13	8	5	2	0	0	0	0	0	0	0	0	0	10	38	0	0.19
H	1988	075210	S Santiam R	Santiam R, S Fk	03/06/90	14,486	144,636	54.64	5	9	0	0	0	0	0	0	0	0	18	9	19	0	0.41	
H	1988	075211	S Santiam R	Santiam R, S Fk	03/06/90	16,355	147,002	54.64	10	2	0	0	0	0	0	0	0	0	1	0	1	5	5	0.15
H	1989	075501	S Santiam R	Santiam R, S Fk	11/19/90	127,939	402,459	48.25	139	20	26	0	0	2	0	0	0	0	1	11	285	283	6	0.60
H	1989	075502	S Santiam R	Santiam R, S Fk	03/05/91	129,140	400,083	42.78	107	7	39	0	14	31	0	0	1	0	10	2	333	364	8	0.71
H	1989	075504	S Santiam R	Santiam R, S Fk	03/06/91	96,647	299,715	43.61	100	36	35	0	0	42	0	0	0	0	22	2	390	293	12	0.96
H	1990	075626	S Santiam R	Santiam R, S Fk	11/13/91	158,403	478,559	47.24	96	23	16	0	0	9	1	0	0	0	3	48	581	784	8	0.99
H	1990	075628	S Santiam R	Santiam R, S Fk	03/03/92	95,559	291,930	58.90	6	0	0	0	0	0	0	0	0	0	4	0	62	73	1	0.16
H	1990	075627	S Santiam R	Santiam R, S Fk	03/05/92	159,796	483,249	55.99	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0.00
H	1991	071457	S Santiam R	Santiam R, S Fk	11/13/92	162,055	499,788	54.64	37	13	0	0	0	0	0	0	0	0	0	0	205	72	2	0.20
H	1991	071458	S Santiam R	Santiam R, S Fk	03/17/93	149,899	482,190	53.36	41	10	5	0	3	0	0	0	0	0	0	0	174	164	6	0.27
H	1991	071459	S Santiam R	Santiam R, S Fk	03/17/93	94,811	309,583	53.36	40	21	9	0	1	0	0	0	0	0	23	2	357	215	3	0.71
H	1992	071535	S Santiam R	Santiam R, S Fk	11/08/93	25,482	241,614	53.99	4	0	0	0	0	0	0	0	0	0	0	1	22	20	0	0.18
H	1992	071536	S Santiam R	Santiam R, S Fk	11/08/93	25,351	241,248	53.99	7	0	0	0	0	0	0	0	0	0	0	15	21	20	1	0.25

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%				
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries									
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.	
SPRING CHINOOK SALMON (Continued)																										
South Santiam (Continued):																										
H	1992	076123	S Santiam R	Santiam R, S Fk	02/28/94	24,838	223,068	54.64	5	0	0	0	3	0	0	0	0	0	0	0	17	15	1	0.17		
H	1992	076122	S Santiam R	Santiam R, S Fk	03/08/94	29,318	239,363	55.99	0	0	0	0	0	0	0	0	0	0	0	0	11	22	1	0.12		
H	1993	070233	S Santiam R	Santiam R, S Fk	11/09/94	47,628	217,625	48.72	4	4	0	0	0	0	0	0	0	0	0	0	19	16	2	0.09		
H	1993	070442	S Santiam R	Santiam R, S Fk	02/10/95	31,162	252,944	56.63	8	0	0	0	0	2	0	0	0	0	0	3	6	53	41	0	0.36	
H	1993	070443	S Santiam R	Santiam R, S Fk	03/10/95	31,602	448,669	62.91	4	2	0	0	0	0	0	0	0	0	0	0	2	42	65	0	0.36	
H	1994	071153	S Santiam R	Santiam R, S Fk	11/09/95	50,366	377,611	55.93	7	0	1	0	0	0	0	0	0	0	0	0	1	17	5	0	0.06	
H	1994	070858	S Santiam R	Santiam R, S Fk	02/13/96	30,533	286,827	59.60	32	0	0	0	0	0	0	0	2	0	0	0	3	1	92	35	0	0.54
H	1994	070857	S Santiam R	Santiam R, S Fk	03/12/96	30,113	417,989	52.68	14	1	0	0	0	0	0	2	0	0	0	0	1	70	58	0	0.48	
H	1995	070741	S Santiam R	Santiam R, S Fk	11/07/96	50,011	214,098	57.42	4	0	0	0	0	0	0	0	0	0	0	0	16	18	0	0.08		
H	1995	071256	S Santiam R	Santiam R, S Fk	02/11/97	25,952	26,428	49.84	21	0	0	0	0	0	0	0	0	0	0	0	114	61	0	0.76		
H	1995	071257	S Santiam R	Santiam R, S Fk	03/13/97	29,051	406,149	54.00	31	2	0	0	0	0	0	0	0	0	0	3	91	104	0	0.80		
H	1996	092120	S Santiam R	Santiam R, S Fk	11/01/97	52,336	299,569	54.64	9	1	1	0	0	0	0	0	0	0	0	9	94	62	0	0.34		
H	1996	092157	S Santiam R	Santiam R, S Fk	02/18/98	29,508	300,234	55.31	7	0	0	0	0	0	0	0	0	0	0	1	24	45	0	0.26		
H	1996	092158	S Santiam R	Santiam R, S Fk	03/30/98	31,269	379,084	42.39	36	0	0	0	0	0	0	0	0	0	0	1	64	127	0	0.73		
H	1987	075042	S Santiam R	Willamette R	11/17/88	25,178	111,693	57.41	54	12	3	0	0	0	0	2	0	0	0	0	15	100	70	2	1.02	
Umatilla:																										
H	1991	071451	Carson (WA)	Umatilla R	05/11/92	52,128	98,617	11.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071449	Carson (WA)	Umatilla R	05/11/92	51,518	109,528	11.84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071452	Carson (WA)	Umatilla R	05/11/92	51,659	108,652	12.32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071450	Carson (WA)	Umatilla R	05/12/92	51,271	109,997	12.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071447	Carson (WA)	Umatilla R	05/12/92	50,047	104,670	12.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071448	Carson (WA)	Umatilla R	05/12/92	51,707	104,929	12.49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071445	Carson (WA)	Umatilla R	05/12/92	49,498	63,305	14.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071444	Carson (WA)	Umatilla R	05/12/92	48,051	63,585	14.54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071443	Carson (WA)	Umatilla R	05/13/92	50,611	97,013	14.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071446	Carson (WA)	Umatilla R	05/13/92	50,045	95,456	14.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	071543	Carson (WA)	Umatilla R	11/05/92	25,633	50,680	23.26	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0.01		
H	1991	071542	Carson (WA)	Umatilla R	11/05/92	26,135	50,736	23.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	075739	Carson (WA)	Umatilla R	03/23/93	21,499	50,311	55.31	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0.01		
H	1991	075740	Carson (WA)	Umatilla R	03/23/93	20,880	50,109	56.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	075742	Carson (WA)	Umatilla R	03/24/93	20,307	54,015	52.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1991	075741	Carson (WA)	Umatilla R	03/24/93	21,157	54,347	54.65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1992	076132	Carson (WA)	Umatilla R	06/01/93	52,893	113,852	15.91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1992	076133	Carson (WA)	Umatilla R	06/01/93	52,335	116,316	16.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1992	076134	Carson (WA)	Umatilla R	06/01/93	51,963	111,333	16.55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1992	076135	Carson (WA)	Umatilla R	06/01/93	51,680	109,473	16.61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1992	076137	Carson (WA)	Umatilla R	06/02/93	52,172	111,103	16.73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%	
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries						
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5
SPRING CHINOOK SALMON (Continued)																							
Umatilla (Continued):																							
H	1992	076136	Carson (WA)	Umatilla R	06/02/93	52,588	105,290	16.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1992	070216	Carson (WA)	Umatilla R	11/16/93	36,102	47,867	21.80	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0.01
H	1992	070159	Carson (WA)	Umatilla R	11/16/93	34,541	49,694	22.34	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00
H	1992	070162	Carson (WA)	Umatilla R	11/16/93	35,467	48,343	22.45	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0.03
H	1992	070161	Carson (WA)	Umatilla R	11/17/93	35,657	52,211	21.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1992	070160	Carson (WA)	Umatilla R	11/17/93	35,408	49,081	21.70	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0.01
H	1992	070163	Carson (WA)	Umatilla R	11/17/93	36,157	49,318	21.80	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.00
H	1992	070158	Carson (WA)	Umatilla R	11/17/93	34,130	41,244	23.62	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0.01
H	1992	070156	Carson (WA)	Umatilla R	11/17/93	33,999	42,734	24.12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1992	070155	Carson (WA)	Umatilla R	11/17/93	35,710	40,661	24.51	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0.01
H	1992	070157	Carson (WA)	Umatilla R	11/17/93	34,857	39,656	25.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1992	070219	Carson (WA)	Umatilla R	03/21/94	20,971	52,620	51.54	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0.05
H	1992	070217	Carson (WA)	Umatilla R	03/21/94	20,070	51,210	53.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1992	070218	Carson (WA)	Umatilla R	03/21/94	19,920	49,375	55.99	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0.07
H	1992	070220	Carson (WA)	Umatilla R	03/22/94	20,982	51,938	53.99	0	0	0	0	0	0	0	0	0	0	0	24	1	0	0.12
H	1993	070734	Carson (WA)	Umatilla R	05/20/94	49,726	140,255	14.76	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.00
H	1993	070735	Carson (WA)	Umatilla R	05/20/94	52,298	142,237	14.76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1993	070738	Carson (WA)	Umatilla R	05/20/94	51,042	138,665	14.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1993	070739	Carson (WA)	Umatilla R	05/20/94	52,317	135,990	14.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1993	070736	Carson (WA)	Umatilla R	05/20/94	52,636	140,227	15.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1993	070737	Carson (WA)	Umatilla R	05/20/94	53,172	142,003	15.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1993	070726	Carson (WA)	Umatilla R	11/15/94	35,156	39,551	43.16	0	0	0	0	0	0	0	0	0	1	1	9	1	0	0.03
H	1993	070733	Carson (WA)	Umatilla R	11/15/94	34,220	34,668	47.20	0	0	0	0	0	0	0	0	0	0	4	10	1	0	0.04
H	1993	070728	Carson (WA)	Umatilla R	11/15/94	34,808	38,234	47.69	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0.01
H	1993	070729	Carson (WA)	Umatilla R	11/15/94	35,160	40,383	48.20	0	0	0	0	0	0	0	0	3	0	1	4	0	0	0.02
H	1993	070725	Carson (WA)	Umatilla R	11/15/94	34,824	39,517	48.72	0	0	0	0	0	0	0	0	0	1	4	4	1	0	0.03
H	1993	070727	Carson (WA)	Umatilla R	11/15/94	34,790	39,487	49.25	0	0	0	0	0	0	0	0	0	1	0	5	1	0	0.02
H	1993	070724	Carson (WA)	Umatilla R	11/15/94	34,124	39,548	50.34	0	0	0	0	0	0	0	0	0	0	3	4	1	0	0.02
H	1993	070731	Carson (WA)	Umatilla R	11/15/94	35,750	37,096	58.08	0	0	0	0	0	0	0	0	0	0	3	13	0	0	0.04
H	1993	070732	Carson (WA)	Umatilla R	11/15/94	32,251	32,700	61.21	0	0	0	0	0	0	0	0	0	0	4	9	0	0	0.04
H	1993	070730	Carson (WA)	Umatilla R	11/15/94	34,915	37,073	62.91	0	0	0	0	0	0	0	0	0	1	6	9	0	0	0.05
H	1993	070660	Carson (WA)	Umatilla R	03/13/95	23,607	74,735	32.61	0	0	0	0	0	0	0	0	3	4	1	33	3	0	0.19
H	1993	070651	Carson (WA)	Umatilla R	03/13/95	18,864	49,001	54.58	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0.01
H	1993	070653	Carson (WA)	Umatilla R	03/13/95	18,175	44,188	55.25	0	0	0	0	0	0	0	0	2	4	2	0	0	0	0.04
H	1993	071454	Carson (WA)	Umatilla R	03/13/95	15,661	40,685	55.93	0	0	0	0	0	0	0	0	0	0	1	3	1	0	0.03
H	1993	070654	Carson (WA)	Umatilla R	03/13/95	19,091	47,846	57.34	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.01
H	1993	071453	Carson (WA)	Umatilla R	03/13/95	20,315	50,007	60.40	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0.01
H	1993	070652	Carson (WA)	Umatilla R	03/13/95	19,052	44,077	61.21	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0.04

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%							
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries													
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+	Surv.					
SPRING CHINOOK SALMON (Continued)																														
Umatilla (Continued):																														
H	1993	070661	Carson (WA)	Umatilla R	04/14/95	28,765	74,921	39.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	77	7	0	0.32
H	1993	070649	Carson (WA)	Umatilla R	04/21/95	22,189	123,257	43.16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	67	8	0	0.37
H	1993	070650	Carson (WA)	Umatilla R	04/21/95	24,088	124,614	44.42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	60	12	0	0.35
H	1994	071028	Carson (WA)	Umatilla R	03/13/96	18,844	45,887	41.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1994	071033	Carson (WA)	Umatilla R	03/13/96	19,583	56,709	47.69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1994	071027	Carson (WA)	Umatilla R	03/13/96	19,622	49,032	50.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.01
H	1994	071029	Carson (WA)	Umatilla R	03/13/96	19,258	49,121	50.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1994	071031	Carson (WA)	Umatilla R	03/13/96	20,066	60,137	51.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1994	071032	Carson (WA)	Umatilla R	03/13/96	19,874	57,076	52.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0.01
H	1994	071030	Carson (WA)	Umatilla R	03/13/96	19,961	60,599	60.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1995	091730	Carson (WA)	Umatilla R	03/26/97	19,842	57,668	48.77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	97	13	0	0.56
H	1995	091750	Carson (WA)	Umatilla R	03/26/97	20,289	56,901	48.77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	121	19	0	0.71
H	1995	091749	Carson (WA)	Umatilla R	03/26/97	19,818	56,764	50.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	77	14	0	0.48
H	1995	091751	Carson (WA)	Umatilla R	03/26/97	20,597	54,550	50.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	147	18	0	0.81
H	1996	071420	Carson (WA)	Umatilla R	03/08/98	19,403	172,999	29.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	18	0	0	0.11
H	1996	092262	Carson (WA)	Umatilla R	03/08/98	23,778	53,318	37.80	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	11	87	3	0	0.43
H	1996	092260	Carson (WA)	Umatilla R	03/08/98	22,759	59,744	38.12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	97	2	0	0.47
H	1996	092261	Carson (WA)	Umatilla R	03/08/98	23,248	53,502	38.12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	85	1	0	0.40
H	1996	092259	Carson (WA)	Umatilla R	03/08/98	23,247	60,277	38.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	82	0	0	0.40
H	1996	092258	Carson (WA)	Umatilla R	03/08/98	22,450	51,743	39.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	71	2	0	0.38
H	1996	092256	Carson (WA)	Umatilla R	03/08/98	23,162	52,159	40.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	69	2	0	0.35
H	1996	092257	Carson (WA)	Umatilla R	03/08/98	22,788	51,972	40.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11	61	0	0	0.32	
H	1996	076036	Carson (WA)	Umatilla R	04/14/98	18,721	99,641	27.83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	44	2	0	0.26
H	1996	075743	Carson (WA)	Umatilla R	04/14/98	19,255	172,258	39.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12	0	0	0.07
Willamette:																														
H	1987	075026	M Willamette R	Willamette R, MF	09/09/88	28,797	32,283	46.75	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	22	42	0	0.30	
H	1987	075031	M Willamette R	Willamette R, MF	10/13/88	32,420	32,586	45.35	25	7	0	0	0	2	0	0	3	0	0	0	0	0	0	0	5	56	76	0	0.54	
H	1987	075028	M Willamette R	Willamette R, MF	11/14/88	30,889	327,888	54.64	26	12	0	0	4	0	0	0	0	0	0	0	0	0	0	0	13	147	119	9	1.07	
H	1987	075037	M Willamette R	Willamette R, MF	02/15/89	21,947	22,626	37.79	18	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	93	90	0	0.94	
H	1987	075038	M Willamette R	Willamette R, MF	03/06/89	22,146	609,429	48.25	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	53	57	1	0.54	
H	1987	075032	M Willamette R	Willamette R, MF	04/17/89	21,692	22,479	43.19	24	2	4	0	0	2	0	0	0	0	0	0	0	0	0	0	2	171	127	0	1.53	
H	1987	075035	M Willamette R	Willamette R, MF	05/04/89	22,125	22,751	44.90	3	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	32	1	0.20	
H	1988	075204	M Willamette R	Willamette R, MF	08/23/89	33,418	33,892	15.91	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	12	0	0.05	
H	1988	075207	M Willamette R	Willamette R, MF	11/13/89	30,570	408,536	66.69	28	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	98	122	1	0.85	
H	1988	075162	M Willamette R	Willamette R, MF	03/07/90	14,897	407,622	40.13	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	104	0	1.03	
H	1988	075163	M Willamette R	Willamette R, MF	03/07/90	15,209	408,346	40.13	10	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	11	73	118	0	1.41	
H	1989	075433	M Willamette R	Willamette R, MF	08/14/90	26,424	27,270	15.12	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	2	0	0.12	

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%						
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas													Freshwater Recoveries					Surv.				
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	6+						
SPRING CHINOOK SALMON (Continued)																													
Willamette (Continued):																													
H	1989	075434	M Willamette R	Willamette R, MF	08/14/90	26,348	26,831	16.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22	1	0	0.09
H	1989	075347	M Willamette R	Willamette R, MF	11/16/90	15,050	185,424	62.99	25	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	110	63	0	1.36
H	1989	075348	M Willamette R	Willamette R, MF	11/16/90	15,045	185,426	62.99	15	4	2	0	0	0	0	0	0	0	0	0	0	0	0	5	85	78	1	1.26	
H	1989	075508	M Willamette R	Willamette R, MF	02/28/91	27,546	47,680	30.44	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	77	1	0.60	
H	1989	075507	M Willamette R	Willamette R, MF	02/28/91	32,004	125,424	31.49	16	4	0	0	0	1	0	0	0	0	0	0	0	0	0	2	64	45	1	0.42	
H	1989	075513	M Willamette R	Willamette R, MF	02/28/91	26,231	49,203	31.94	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	7	0	0.05	
H	1989	075511	M Willamette R	Willamette R, MF	02/28/91	26,935	49,868	33.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0.03	
H	1989	075512	M Willamette R	Willamette R, MF	02/28/91	30,842	55,304	33.35	2	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	12	9	0	0.11	
H	1989	075514	M Willamette R	Willamette R, MF	02/28/91	29,753	37,907	40.86	9	0	5	0	0	1	0	0	0	0	0	0	0	0	0	2	78	98	1	0.65	
H	1989	075463	M Willamette R	Willamette R, MF	02/28/91	29,692	37,680	41.99	15	0	0	2	0	8	0	0	3	0	0	0	0	0	0	3	126	110	3	0.91	
H	1989	075517	M Willamette R	Willamette R, MF	02/28/91	17,366	19,600	46.28	17	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	83	56	1	0.96	
H	1989	075509	M Willamette R	Willamette R, MF	03/01/91	25,319	47,256	28.89	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.02	
H	1989	075510	M Willamette R	Willamette R, MF	03/01/91	28,834	52,479	29.64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15	5	5	0.09	
H	1989	075505	M Willamette R	Willamette R, MF	03/01/91	28,825	100,793	37.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0.01	
H	1989	075506	M Willamette R	Willamette R, MF	03/01/91	27,062	33,276	38.43	15	3	0	0	2	0	0	0	0	0	0	0	0	0	0	3	54	78	2	0.58	
H	1989	075518	M Willamette R	Willamette R, MF	03/01/91	17,989	18,260	41.23	8	4	0	0	0	0	0	0	0	0	0	0	0	0	3	1	91	92	2	1.12	
H	1989	075503	M Willamette R	Willamette R, MF	03/01/91	31,462	38,948	42.38	22	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	133	96	1	0.82	
H	1989	075516	M Willamette R	Willamette R, MF	03/03/91	32,008	73,928	47.24	19	4	7	2	0	7	0	0	0	0	0	0	0	0	0	5	250	155	1	1.41	
H	1989	075515	M Willamette R	Willamette R, MF	03/09/91	32,008	73,928	47.24	25	7	4	0	0	7	0	0	0	0	0	0	0	0	0	4	208	139	15	1.28	
H	1990	075722	M Willamette R	Willamette R, MF	08/20/91	25,273	25,273	19.06	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	27	9	1	0.17	
H	1990	075723	M Willamette R	Willamette R, MF	08/20/91	26,666	26,666	19.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	24	8	0	0.13	
H	1990	075021	M Willamette R	Willamette R, MF	11/14/91	28,547	354,478	58.90	11	12	3	0	0	0	0	0	0	0	0	0	0	0	1	75	217	95	0	1.45	
H	1990	075635	M Willamette R	Willamette R, MF	03/02/92	27,881	120,855	34.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	3	1	0.07	
H	1990	075641	M Willamette R	Willamette R, MF	03/02/92	32,614	58,804	34.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1990	075642	M Willamette R	Willamette R, MF	03/02/92	31,961	57,628	34.89	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	5	0	0.05	
H	1990	075636	M Willamette R	Willamette R, MF	03/02/92	31,724	113,437	36.87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0.02	
H	1990	075633	M Willamette R	Willamette R, MF	03/02/92	29,676	37,475	40.49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0.02	
H	1990	075631	M Willamette R	Willamette R, MF	03/02/92	30,748	38,511	42.78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	29	38	0	0.22	
H	1990	074043	M Willamette R	Willamette R, MF	03/02/92	21,444	21,546	44.03	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14	39	0	0.28	
H	1990	075634	M Willamette R	Willamette R, MF	03/02/92	31,263	37,421	45.35	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0.03	
H	1990	075638	M Willamette R	Willamette R, MF	03/03/92	29,690	53,525	28.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.01	
H	1990	075637	M Willamette R	Willamette R, MF	03/03/92	32,112	58,016	28.89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1990	075639	M Willamette R	Willamette R, MF	03/03/92	28,813	51,952	33.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.01	
H	1990	075640	M Willamette R	Willamette R, MF	03/03/92	30,755	55,455	34.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0.02	
H	1990	075632	M Willamette R	Willamette R, MF	03/03/92	32,483	38,881	43.61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0.02	
H	1990	074044	M Willamette R	Willamette R, MF	03/03/92	19,250	19,346	50.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0.04	
H	1990	075643	M Willamette R	Willamette R, MF	03/05/92	32,470	194,186	55.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	46	46	1	0.29	
H	1990	075644	M Willamette R	Willamette R, MF	03/05/92	32,240	194,185	55.99	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	3	44	64	1	0.39	

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%	
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5
SPRING CHINOOK SALMON (Continued)																							
Willamette (Continued):																							
H	1991	075937	M Willamette R	Willamette R, MF	08/19/92	49,043	49,938	21.60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1991	075904	M Willamette R	Willamette R, MF	11/09/92	28,709	265,326	82.46	10	0	0	0	0	0	0	0	0	0	0	1	98	38	0.51
H	1991	075928	M Willamette R	Willamette R, MF	03/12/93	24,412	44,015	34.89	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0.02
H	1991	075932	M Willamette R	Willamette R, MF	03/12/93	22,901	49,191	34.89	1	0	0	0	0	0	0	0	0	0	0	1	4	0	0.03
H	1991	075930	M Willamette R	Willamette R, MF	03/12/93	23,452	47,499	36.58	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0.03
H	1991	075927	M Willamette R	Willamette R, MF	03/12/93	22,437	42,883	37.49	0	2	0	0	0	0	0	0	0	0	0	10	11	0	0.10
H	1991	075929	M Willamette R	Willamette R, MF	03/12/93	26,372	50,580	38.12	3	0	0	0	0	0	0	0	0	0	1	17	11	0	0.12
H	1991	075931	M Willamette R	Willamette R, MF	03/12/93	22,655	52,786	39.44	2	0	0	0	0	0	0	0	0	0	1	18	11	3	0.15
H	1991	075926	M Willamette R	Willamette R, MF	03/12/93	27,019	105,792	47.25	14	0	0	0	0	0	0	0	0	0	0	55	12	0	0.30
H	1991	075936	M Willamette R	Willamette R, MF	03/12/93	19,190	19,968	47.25	16	0	0	0	0	0	0	0	0	0	1	53	17	5	0.48
H	1991	075922	M Willamette R	Willamette R, MF	03/12/93	27,554	36,480	48.25	17	0	4	0	0	0	0	0	0	0	2	75	27	0	0.45
H	1991	075925	M Willamette R	Willamette R, MF	03/12/93	26,258	101,943	48.25	0	0	0	0	0	0	0	0	0	0	0	25	22	0	0.18
H	1991	075924	M Willamette R	Willamette R, MF	03/12/93	27,919	38,023	48.77	6	2	0	0	0	0	0	0	0	0	0	90	32	0	0.47
H	1991	075921	M Willamette R	Willamette R, MF	03/12/93	30,674	37,014	49.30	5	6	0	0	0	0	0	0	0	0	0	39	32	0	0.27
H	1991	075935	M Willamette R	Willamette R, MF	03/12/93	19,601	19,793	50.40	4	0	0	0	0	0	0	0	0	0	0	52	24	1	0.41
H	1991	075923	M Willamette R	Willamette R, MF	03/12/93	31,106	38,211	54.00	6	0	0	0	0	0	0	0	0	0	1	58	39	3	0.34
H	1991	075933	M Willamette R	Willamette R, MF	03/14/93	32,415	191,011	53.36	8	4	0	0	0	0	0	0	0	0	8	151	84	0	0.79
H	1991	075934	M Willamette R	Willamette R, MF	03/14/93	32,415	191,011	53.36	5	3	0	0	0	0	0	0	0	0	5	133	83	0	0.71
H	1992	070253	M Willamette R	Willamette R, MF	11/08/93	26,170	278,005	69.77	2	0	0	0	0	0	0	0	0	0	5	62	21	0	0.34
H	1992	076328	M Willamette R	Willamette R, MF	02/28/94	21,697	44,504	21.09	0	0	0	0	0	0	0	0	0	1	0	13	13	2	0.13
H	1992	070132	M Willamette R	Willamette R, MF	02/28/94	24,900	51,136	24.12	3	7	0	0	0	0	0	0	0	0	0	17	11	0	0.15
H	1992	070128	M Willamette R	Willamette R, MF	02/28/94	20,521	41,760	26.06	9	3	0	0	0	0	0	0	0	0	0	10	12	0	0.17
H	1992	070129	M Willamette R	Willamette R, MF	02/28/94	28,590	50,460	26.06	3	5	0	0	0	0	0	0	0	0	2	14	12	0	0.13
H	1992	070130	M Willamette R	Willamette R, MF	02/28/94	22,588	49,078	26.52	0	0	0	0	0	0	0	0	0	1	1	11	19	0	0.14
H	1992	076326	M Willamette R	Willamette R, MF	02/28/94	29,028	116,110	26.68	0	0	0	0	0	0	0	0	0	0	1	25	23	0	0.17
H	1992	070131	M Willamette R	Willamette R, MF	02/28/94	24,113	53,235	26.84	0	0	0	0	0	0	0	0	0	0	1	18	21	0	0.17
H	1992	076327	M Willamette R	Willamette R, MF	02/28/94	25,589	108,378	27.99	5	0	0	0	0	0	0	0	0	1	0	10	14	0	0.12
H	1992	076323	M Willamette R	Willamette R, MF	02/28/94	26,020	38,955	28.52	13	0	0	0	0	0	0	0	0	1	1	32	18	0	0.25
H	1992	076322	M Willamette R	Willamette R, MF	02/28/94	24,039	36,524	30.23	0	2	0	0	0	0	0	0	0	1	0	15	20	0	0.16
H	1992	076324	M Willamette R	Willamette R, MF	02/28/94	25,909	36,704	30.64	5	0	0	0	0	0	0	0	0	4	1	15	28	2	0.21
H	1992	076325	M Willamette R	Willamette R, MF	02/28/94	25,142	33,082	32.63	7	0	0	0	0	0	0	0	0	0	0	30	27	0	0.25
H	1992	076337	M Willamette R	Willamette R, MF	02/28/94	14,494	17,550	33.59	5	0	0	0	0	0	0	0	0	3	0	13	11	0	0.22
H	1992	076336	M Willamette R	Willamette R, MF	02/28/94	14,211	17,550	34.89	2	0	0	0	0	0	0	0	0	2	0	15	12	0	0.22
H	1992	070133	M Willamette R	Willamette R, MF	02/28/94	27,082	154,364	58.90	0	3	0	0	0	0	0	0	0	20	2	120	71	0	0.80
H	1992	070134	M Willamette R	Willamette R, MF	02/28/94	26,975	154,364	58.90	7	15	0	0	0	0	0	0	0	16	3	84	59	0	0.68
H	1993	070563	M Willamette R	Willamette R, MF	02/08/95	23,817	378,256	56.63	15	0	0	0	0	0	0	3	0	0	3	108	72	0	0.84
H	1993	070616	M Willamette R	Willamette R, MF	03/11/95	25,893	809,156	46.71	1	7	0	0	0	0	0	0	0	0	1	41	37	3	0.35
H	1994	070856	M Willamette R	Willamette R, MF	02/07/96	28,011	776,465	55.93	6	0	0	0	0	0	0	0	0	0	0	23	13	0	0.15

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%									
stock, (source H, N, M),		Release	Number Released		Size	Oregon Areas													Freshwater Recoveries													
brood, tagcode	Hatchery	Release Site	Date	Ad+CWT	Total	(gm)	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	6+	Surv.								
SPRING CHINOOK SALMON (Continued)																																
Willamette (Continued):																																
H	1994	070855	M Willamette R	Willamette R, MF	03/19/96	26,510	541,025	54.58	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	125	71	0	0.80
H	1995	071254	M Willamette R	Willamette R, MF	02/28/97	31,655	413,739	50.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11	15	0	0.09
H	1995	071255	M Willamette R	Willamette R, MF	02/28/97	30,412	218,626	52.74	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	48	49	1	0.37	
H	1996	092155	M Willamette R	Willamette R, MF	11/03/97	31,797	253,303	56.70	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	30	9	0	0.16	
H	1996	092156	M Willamette R	Willamette R, MF	03/03/98	31,695	552,403	48.77	16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	103	212	0	1.05		
H	1994	070955	M Willamette R	Willamette R	11/28/95	28,349	172,858	68.62	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	27	27	0	0.26		
H	1995	091715	M Willamette R	Willamette R	11/09/96	30,888	86,216	53.30	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	30	23	0	0.19		
H	1996	092159	McKenzie R	Willamette R	11/04/97	52,301	61,099	48.20	29	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	94	67	0	0.38		
H	1996	092062	S Santiam R	Molalla R	02/27/98	24,413	68,398	41.61	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	43	0	0.46	
COHO SALMON																																
Big Creek:																																
H	1989	075113	Big Creek	Big Cr	07/02/90	26,089	56,679	22.12	0	0	0	0	0	26	21	36	88	141	19	11	424	2	0	0	0	0	0	0	0	2.94		
H	1989	075112	Big Creek	Big Cr	07/31/90	26,244	57,118	37.79	0	0	24	0	0	63	23	34	74	200	16	23	458	5	0	0	0	0	0	0	0	3.51		
H	1989	075426	Big Creek	Big Cr	06/03/91	24,442	181,324	46.28	0	0	8	0	0	38	16	34	145	152	3	14	29	396	0	0	0	0	0	0	0	3.42		
H	1989	075427	Big Creek	Big Cr	06/10/91	25,062	339,661	31.49	0	0	0	0	0	42	10	12	125	128	0	0	2	286	0	0	0	0	0	0	0	2.41		
H	1990	075616	Big Creek	Big Cr	06/01/92	26,774	195,943	46.30	0	0	6	0	4	27	0	0	0	0	0	5	1	66	0	0	0	0	0	0	0	0.41		
H	1990	075617	Big Creek	Big Cr	06/08/92	27,209	357,982	30.60	0	0	0	0	0	0	0	3	3	0	0	0	0	21	0	0	0	0	0	0	0	0.10		
H	1991	071516	Big Creek	Big Cr	06/03/93	27,295	193,856	47.74	0	0	28	5	0	0	0	0	0	0	0	0	0	396	0	0	0	0	0	0	0	1.57		
H	1991	071517	Big Creek	Big Cr	06/10/93	27,612	366,320	31.06	0	0	7	0	0	0	0	0	0	0	0	0	0	158	0	0	0	0	0	0	0	0.60		
H	1992	070256	Big Creek	Big Cr	06/03/94	25,880	301,630	32.63	0	0	18	0	0	9	3	0	0	0	0	0	0	72	0	0	0	0	0	0	0	0.39		
H	1992	070257	Big Creek	Big Cr	06/03/94	25,887	164,360	45.81	0	0	5	0	0	45	10	0	0	0	0	0	0	293	0	0	0	0	0	0	0	1.36		
H	1993	070137	Big Creek	Big Cr	04/28/95	27,418	130,654	43.99	0	0	0	0	0	13	2	0	0	0	0	0	16	166	0	0	0	0	0	0	0	0.72		
H	1993	070138	Big Creek	Big Cr	05/31/95	26,424	403,203	41.20	0	0	0	0	0	3	5	0	0	0	0	0	2	197	0	0	0	0	0	0	0	0.78		
H	1994	070958	Big Creek	Big Cr	05/06/96	28,110	141,056	32.63	0	0	0	0	0	1	0	0	0	0	0	0	4	88	0	0	0	0	0	0	0	0.33		
H	1994	070959	Big Creek	Big Cr	06/05/96	27,957	402,510	37.18	0	0	0	0	0	7	0	0	0	0	0	0	4	301	0	0	0	0	0	0	0	1.12		
H	1995	070842	Big Creek	Big Cr	04/30/97	27,589	146,067	35.16	0	0	0	0	0	7	2	0	0	0	0	0	18	206	0	0	0	0	0	0	0	0.84		
H	1995	070946	Big Creek	Big Cr	05/30/97	27,707	389,635	37.49	0	0	0	0	0	4	0	0	0	0	0	0	1	120	0	0	0	0	0	0	0	0.45		
H	1996	092254	Big Creek	Big Cr	04/24/98	24,849	146,064	36.58	0	0	0	0	0	3	3	2	2	0	0	0	26	196	0	0	0	0	0	0	0	0.93		
H	1996	092255	Big Creek	Big Cr	05/28/98	26,284	355,130	39.10	0	0	0	0	0	1	0	0	0	0	0	0	7	79	0	0	0	0	0	0	0	0.33		
H	1997	092420	Big Creek	Big Cr	04/26/99	26,386	142,730	38.76	0	0	0	0	0	4	7	2	6	4	0	0	27	364	0	0	0	0	0	0	0	1.57		
H	1997	092419	Big Creek	Big Cr	05/25/99	26,259	382,612	39.10	0	0	0	0	0	18	8	0	14	15	0	0	9	349	0	0	0	0	0	0	0	1.57		
H	1998	092434	Big Creek	Big Cr	04/15/00	25,602	145,353	37.50	0	0	0	0	0	49	7	2	11	2	0	3	110	722	0	0	0	0	0	0	0	3.54		
H	1998	092431	Big Creek	Big Cr	05/15/00	25,513	398,106	39.10	0	0	0	0	0	26	15	0	13	2	0	0	150	1188	0	0	0	0	0	0	0	5.46		
H	1991	076025	Big Creek	Tualatin R	05/03/93	26,885	60,052	30.85	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0.04		
H	1992	075154	Big Creek	Tualatin R	05/16/94	26,533	60,239	29.45	0	0	0	0	0	1	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.02		
H	1993	075263	Big Creek	Tualatin R	05/03/95	26,303	59,250	32.61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1994	075334	Big Creek	Tualatin R	05/13/96	26,426	59,919	32.40	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0.09		

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																		%						
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries					Surv.						
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+				
COHO SALMON (Continued)																												
Big Creek (Continued):																												
H	1995	091813	Big Creek	Tualatin R	04/29/97	25,222	60,000	31.72	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	0.02
H	1996	092417	Big Creek	Tualatin R	04/27/98	27,506	60,152	32.40	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	15	0	0	0	0.06
Bonneville:																												
H	1989	075550	Tanner Cr	Tanner Cr	04/30/91	26,352	812,205	32.63	0	0	0	0	0	0	28	5	6	19	18	0	0	1	77	0	0	0	0	0.58
H	1989	075551	Tanner Cr	Tanner Cr	05/31/91	21,331	629,299	31.49	0	0	12	0	0	51	26	28	125	76	0	0	1	488	0	0	0	0	0	3.78
H	1989	075549	Tanner Cr	Tanner Cr	05/31/91	21,680	282,901	42.38	0	0	10	0	0	51	9	15	84	51	4	2	3	300	0	0	0	0	2.44	
H	1990	075748	Tanner Cr	Tanner Cr	04/27/92	26,749	819,660	36.90	0	0	11	0	0	16	13	3	6	9	0	5	7	252	0	0	0	0	1.20	
H	1990	075747	Tanner Cr	Tanner Cr	04/27/92	28,692	345,410	41.60	0	0	0	0	0	89	26	3	13	5	14	44	60	441	0	0	0	0	2.42	
H	1990	075749	Tanner Cr	Tanner Cr	06/01/92	27,001	1,011,595	30.60	0	0	0	0	0	3	5	0	0	0	0	2	0	15	0	0	0	0	0.09	
H	1991	071533	Tanner Cr	Tanner Cr	05/17/93	27,011	344,180	31.94	3	0	6	0	0	2	0	0	0	0	0	0	10	688	0	0	0	0	2.62	
H	1991	071534	Tanner Cr	Tanner Cr	06/08/93	28,042	767,584	33.10	0	0	14	0	0	0	0	0	0	0	0	0	0	573	0	0	0	0	2.09	
H	1992	074936	Tanner Cr	Tanner Cr	04/19/94	26,606	871,511	28.52	0	0	0	0	0	8	3	0	0	0	0	2	6	65	0	0	0	0	0.32	
H	1992	075130	Tanner Cr	Tanner Cr	05/31/94	11,937	165,957	38.11	0	0	18	0	0	5	3	0	0	0	0	0	2	86	0	0	0	0	0.96	
H	1993	075445	Tanner Cr	Tanner Cr	04/26/95	26,529	274,691	33.35	0	0	0	0	0	8	6	0	0	0	0	4	18	227	0	0	0	0	0.99	
H	1993	075446	Tanner Cr	Tanner Cr	06/09/95	25,407	1,004,506	40.50	0	0	3	0	0	2	6	0	0	0	0	0	0	200	0	0	0	0	0.83	
H	1994	075413	Tanner Cr	Tanner Cr	02/12/96	23,615	332,739	30.24	0	0	0	0	0	0	0	0	0	0	0	0	1	14	0	0	0	0	0.06	
H	1994	075414	Tanner Cr	Tanner Cr	06/07/96	25,080	887,011	36.58	0	0	0	0	0	6	2	0	0	0	0	0	0	472	0	0	0	0	1.91	
H	1995	091817	Tanner Cr	Tanner Cr	04/24/97	28,488	332,386	40.49	0	0	0	0	0	10	2	0	0	0	0	0	11	324	0	0	0	0	1.22	
H	1995	091819	Tanner Cr	Tanner Cr	05/12/97	27,842	782,863	31.06	0	0	0	0	0	3	0	0	0	0	0	0	0	56	0	0	0	0	0.21	
H	1996	092307	Tanner Cr	Tanner Cr	04/30/98	20,478	292,480	45.36	0	0	0	0	0	20	4	0	5	1	0	0	4	248	0	0	0	0	1.38	
H	1996	092303	Tanner Cr	Tanner Cr	06/04/98	21,814	698,556	37.80	0	0	0	0	0	0	0	0	0	0	0	0	0	63	0	0	0	0	0.29	
H	1997	092418	Tanner Cr	Tanner Cr	04/30/99	25,196	377,983	35.16	0	0	0	0	0	14	11	1	12	8	0	0	11	529	0	0	0	0	2.33	
H	1997	092421	Tanner Cr	Tanner Cr	06/01/99	25,855	938,448	32.39	0	0	0	0	0	6	2	0	2	3	0	0	0	297	0	0	0	0	1.20	
H	1998	092726	Tanner Cr	Tanner Cr	05/02/00	26,133	394,966	34.90	0	0	0	0	0	42	26	6	10	10	0	0	42	714	0	0	0	0	3.25	
H	1998	092715	Tanner Cr	Tanner Cr	06/01/00	26,888	781,116	37.80	0	0	0	0	0	145	63	16	15	42	0	0	9	1753	0	0	0	0	7.60	
Cascade/Oxbow:																												
H	1989	075535	Tanner Cr	Umatilla R	03/25/91	24,584	152,974	29.45	0	0	0	0	0	15	2	0	11	2	0	0	4	15	0	0	0	0	0.20	
H	1989	075533	Tanner Cr	Umatilla R	03/26/91	25,407	377,967	27.16	0	0	0	0	0	10	2	0	9	0	0	0	3	15	0	0	0	0	0.15	
H	1989	075534	Tanner Cr	Umatilla R	03/26/91	25,338	378,485	27.16	0	0	0	0	0	4	0	0	10	3	0	0	8	18	0	0	0	0	0.17	
H	1990	075622	Tanner Cr	Umatilla R	03/18/92	27,458	244,550	28.70	0	0	4	0	4	19	1	0	3	6	0	18	3	149	0	0	0	0	0.75	
H	1990	075621	Tanner Cr	Umatilla R	03/18/92	27,705	244,615	28.90	0	0	0	0	0	42	8	2	9	12	10	18	1	193	0	0	0	0	1.06	
H	1990	075620	Tanner Cr	Umatilla R	03/20/92	27,908	472,221	29.40	0	0	3	0	0	16	12	0	1	14	4	11	2	134	0	0	0	0	0.71	
H	1991	071522	Tanner Cr	Umatilla R	04/07/93	27,821	218,618	25.92	0	0	0	0	0	0	0	0	0	0	0	0	2	71	0	0	0	0	0.26	
H	1991	071523	Tanner Cr	Umatilla R	04/07/93	27,984	219,266	25.92	0	4	0	0	0	2	0	0	0	0	0	0	0	43	0	0	0	0	0.18	
H	1991	071521	Tanner Cr	Umatilla R	04/09/93	28,273	454,794	25.77	0	0	0	0	0	0	0	0	0	0	0	0	2	54	0	0	0	0	0.20	
H	1992	070337	Tanner Cr	Umatilla R	04/07/94	27,166	418,222	25.06	0	0	5	0	0	6	0	0	0	0	0	0	4	47	0	0	0	0	0.23	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%								
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries													
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+	Surv.					
COHO SALMON (Continued)																														
Cascade/Oxbow (Continued):																														
H	1992	070339	Tanner Cr	Umatilla R	04/07/94	27,010	232,778	26.52	0	0	0	0	0	0	5	6	0	0	0	0	0	0	0	0	3	42	0	0	0	0.21
H	1992	070338	Tanner Cr	Umatilla R	04/07/94	27,452	233,105	26.68	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	4	62	0	0	0	0.30
H	1993	070559	Tanner Cr	Umatilla R	03/31/95	26,498	497,449	31.26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0.04	
H	1993	070557	Tanner Cr	Umatilla R	04/04/95	26,421	250,970	30.83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15	0	0	0	0.06	
H	1993	070558	Tanner Cr	Umatilla R	04/04/95	26,381	251,135	30.83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22	0	0	0	0.09	
H	1994	071150	Tanner Cr	Umatilla R	03/25/96	26,860	465,769	25.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0.02	
H	1994	071146	Tanner Cr	Umatilla R	04/03/96	26,319	500,005	25.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0.07	
H	1994	071145	Tanner Cr	Umatilla R	04/12/96	25,878	511,609	24.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0.07	
H	1995	071360	Umatilla R	Umatilla R	04/03/97	24,807	438,153	28.34	3	0	0	0	0	0	7	0	0	0	6	0	0	0	1	53	0	0	0	0.28		
H	1996	092308	Tanner Cr	Umatilla R	03/27/98	26,759	528,350	27.83	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	48	0	0	0	0.20		
H	1996	092309	Tanner Cr	Umatilla R	04/02/98	26,791	526,082	27.00	0	0	0	0	0	0	6	0	1	1	4	0	0	1	72	0	0	0	0	0.32		
H	1996	092313	Tanner Cr	Umatilla R	04/02/98	25,967	525,304	27.00	0	0	0	0	0	0	11	0	2	5	1	0	0	4	139	0	0	0	0	0.62		
H	1997	092423	Tanner Cr	Umatilla R	03/24/99	26,537	465,314	28.70	0	0	0	0	0	0	3	2	0	8	0	0	0	7	50	0	0	0	0	0.26		
H	1997	092424	Tanner Cr	Umatilla R	04/02/99	27,136	477,588	25.20	0	0	0	0	0	0	4	2	0	0	2	0	0	2	79	0	0	0	0	0.33		
H	1997	092425	Tanner Cr	Umatilla R	04/02/99	26,753	505,650	25.62	0	0	0	0	0	0	2	7	0	0	0	0	0	0	44	0	0	0	0	0.20		
H	1998	092717	Tanner Cr	Umatilla R	03/15/00	26,422	513,288	27.00	0	0	0	0	0	0	25	2	0	0	5	0	0	37	118	0	0	0	0	0.71		
H	1998	092718	Tanner Cr	Umatilla R	03/15/00	26,068	222,462	27.00	0	0	0	0	0	0	14	0	5	2	2	0	0	13	66	0	0	0	0	0.39		
H	1998	092719	Tanner Cr	Umatilla R	04/28/00	26,370	798,210	29.80	0	0	0	0	0	0	41	7	8	8	21	0	0	36	325	0	0	0	0	1.69		
H	1989	075538	Tanner Cr	Yakima R	03/06/91	25,267	252,022	23.50	0	0	0	0	0	0	8	6	0	16	0	0	0	0	14	0	0	0	0	0.17		
H	1989	075537	Tanner Cr	Yakima R	03/07/91	25,882	246,908	25.06	0	0	0	0	0	0	3	0	0	3	0	0	0	0	6	0	0	0	0	0.05		
H	1989	075536	Tanner Cr	Yakima R	03/08/91	26,783	191,501	25.77	0	0	4	0	0	0	5	9	3	14	8	0	0	0	25	0	0	0	0	0.25		
H	1990	075625	Tanner Cr	Yakima R	03/09/92	27,289	154,219	29.10	0	0	0	0	0	0	5	2	2	0	4	0	1	0	12	0	0	0	0	0.10		
H	1990	075624	Tanner Cr	Yakima R	03/10/92	27,249	223,344	27.50	0	0	0	0	0	0	5	6	3	1	0	0	4	0	17	0	0	0	0	0.13		
H	1990	075623	Tanner Cr	Yakima R	03/12/92	28,255	320,244	27.30	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0.02		
H	1991	071524	Tanner Cr	Yakima R	03/17/93	27,423	214,370	23.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0.07		
H	1991	071525	Tanner Cr	Yakima R	03/17/93	27,754	214,552	23.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0.01		
H	1991	071530	Tanner Cr	Yakima R	03/17/93	28,091	214,772	23.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0.07		
H	1992	070340	Tanner Cr	Yakima R	05/06/94	25,468	269,107	31.94	0	0	0	0	0	0	9	4	0	0	0	0	0	0	13	0	0	0	0	0.10		
H	1992	070341	Tanner Cr	Yakima R	05/06/94	25,985	269,408	31.94	0	0	0	0	0	0	10	3	0	0	0	0	0	0	16	0	0	0	0	0.11		
H	1992	070342	Tanner Cr	Yakima R	05/06/94	26,901	172,059	35.99	0	0	6	0	0	0	33	6	0	0	0	0	0	0	12	0	0	0	0	0.21		
H	1993	070554	Tanner Cr	Yakima R	04/26/95	22,851	186,464	31.48	0	0	0	0	0	0	3	0	0	0	0	0	4	0	13	0	0	0	0	0.09		
H	1993	070555	Tanner Cr	Yakima R	04/26/95	20,031	183,732	31.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0.08		
H	1993	070556	Tanner Cr	Yakima R	04/26/95	19,133	195,420	31.48	0	0	0	0	0	0	5	0	0	0	0	0	0	0	13	0	0	0	0	0.09		
H	1994	071147	Tanner Cr	Yakima R	04/30/96	26,733	193,628	30.24	0	0	0	0	0	0	1	0	0	0	0	0	0	0	21	0	0	0	0	0.08		
H	1994	071148	Tanner Cr	Yakima R	04/30/96	26,135	193,275	30.24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	0.13		
H	1994	071149	Tanner Cr	Yakima R	04/30/96	26,538	193,476	30.24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0.03		
H	1996	092310	Tanner Cr	Yakima R	05/16/98	27,046	224,253	41.23	0	0	0	0	0	0	13	5	2	0	0	0	0	0	28	0	0	0	0	0.18		
H	1996	092311	Tanner Cr	Yakima R	05/16/98	26,878	224,137	41.23	0	0	0	0	0	0	3	0	0	2	0	0	0	1	25	0	0	0	0	0.12		

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																				%					
stock, (source H, N, M),				Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries					Surv.						
brood,	tagcode	Hatchery	Release Site		Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+				
COHO SALMON (Continued)																													
Cascade/Oxbow (Continued):																													
H	1996	092312	Tanner Cr	Yakima R	05/16/98	26,821	224,082	41.23	0	0	0	0	0	0	13	5	0	3	0	0	0	0	0	0	45	0	0	0	0.25
Cle Elum Acclimation:																													
H	1997	092426	Tanner Cr	Yakima R	05/17/99	26,593	204,017	26.68	0	0	0	0	0	0	11	5	0	12	5	0	0	0	1	51	0	0	0	0.32	
Gnat Creek:																													
H	1995	091753	Tanner Cr	Umatilla R	04/05/97	26,822	853,688	29.64	0	0	0	0	0	0	9	2	0	0	0	0	0	0	9	112	0	0	0	0.49	
Jack Creek Acclimation:																													
H	1997	092427	Tanner Cr	Jack Cr (Yakima)	05/17/99	25,864	247,724	26.68	0	0	0	0	0	0	3	11	0	14	9	0	0	0	0	97	0	0	0	0.52	
Leavenworth NFH:																													
H	1998	092720	Tanner Cr	Wenatchee (WA)	05/24/00	26,367	498,716	23.90	0	0	0	0	0	0	29	26	3	5	12	0	0	0	0	135	0	0	0	0.80	
Rosa Acclimation:																													
H	1995	071245	Clackamas R	Yakima R	05/15/97	25,046	33,802	38.77	0	0	0	0	0	0	20	2	0	0	0	0	0	0	0	31	0	0	0	0.21	
Winthrop NFH:																													
H	1998	092721	Tanner Cr	Methow R (WA)	05/15/00	26,470	199,763	26.68	0	0	0	0	0	0	29	5	2	9	5	0	0	1	102	0	0	0	0.58		
CEDC Fisheries:																													
H	1993	071545	Tanner Cr	Blind Slough	05/12/95	26,258	140,267	50.91	0	0	10	0	0	0	19	8	0	0	0	0	0	4	1	470	0	0	0	1.95	
H	1994	075901	Clackamas R	Blind Slough	05/06/96	24,942	209,761	50.34	0	0	0	0	0	0	5	0	0	0	2	0	0	24	293	0	0	0	1.30		
H	1995	091818	Tanner Cr	Blind Slough	05/05/97	25,104	196,963	31.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0.07		
H	1996	092305	Tanner Cr	Blind Slough	05/01/98	24,607	144,958	39.79	0	0	0	0	0	0	4	2	0	3	1	0	0	12	386	0	0	0	1.66		
H	1997	092528	Tanner Cr	Blind Slough	04/28/99	26,072	197,089	40.13	0	0	0	0	0	0	13	3	1	8	3	0	0	39	457	0	0	0	2.01		
H	1998	092912	Tanner Cr	Blind Slough	05/04/00	24,624	195,645	39.40	0	0	0	0	5	12	15	4	5	7	0	0	28	4009	0	0	0	16.59			
H	1989	075548	Sandy R	Klaskanine R, SF	05/08/91	26,441	785,102	35.43	0	0	0	0	10	10	1	24	19	0	0	6	72	0	0	0	0.54				
H	1990	075721	Klaskanine R	Klaskanine R, SF	04/16/92	26,387	653,350	40.10	0	0	12	0	130	31	9	28	23	6	43	71	462	1	0	0	3.09				
H	1991	071428	Klaskanine R	Klaskanine R, SF	04/30/93	26,817	736,929	32.39	0	0	0	0	0	0	0	0	0	0	0	1	169	0	0	0	0.63				
H	1992	076145	Klaskanine R	Klaskanine R, SF	04/04/94	25,978	538,994	37.79	0	0	0	0	26	6	0	1	0	0	0	23	105	0	0	0	0.62				
H	1993	070356	Klaskanine R	Klaskanine R, SF	04/10/95	23,160	433,674	43.16	0	0	0	0	8	5	0	0	0	0	0	65	146	0	0	0	0.97				
H	1994	070925	Klaskanine R	Klaskanine R, SF	04/14/96	25,979	443,183	42.75	0	0	0	0	0	0	0	0	0	0	0	47	84	0	0	0	0.50				
H	1995	091824	Klaskanine R	Klaskanine R, SF	05/12/97	28,284	621,932	35.71	0	0	0	0	11	4	0	0	0	0	0	16	457	0	0	0	1.73				
H	1996	092321	Klaskanine R	Klaskanine R, SF	04/29/98	26,787	550,427	27.00	0	0	0	0	8	6	0	4	0	0	0	11	235	0	0	0	0.99				
H	1997	092428	Klaskanine R	Klaskanine R, SF	04/21/99	19,622	429,652	34.10	0	0	0	0	2	1	1	0	6	0	0	2	89	0	0	0	0.51				
H	1998	092730	Klaskanine R	Klaskanine R, SF	05/08/00	25,414	610,658	35.40	0	0	0	0	82	20	2	12	13	0	9	171	1032	0	0	0	5.28				
H	1993	075329	Tanner Cr	Tongue Point	05/12/95	26,426	130,623	52.08	0	0	13	0	10	30	9	0	0	0	4	0	5	746	0	0	0	3.09			

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																	%									
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries														
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	6+	Surv.							
COHO SALMON (Continued)																															
CEDC Fisheries:																															
H	1994	071241	Clackamas R	Tongue Point	05/06/96	23,942	190,032	53.93	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	20	191	0	0	0	0.90	
H	1995	071336	Tanner Cr	Tongue Point	05/05/97	26,174	430,221	32.63	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	135	0	0	0	0.53
H	1996	092306	Tanner Cr	Tongue Point	05/01/98	18,355	119,611	40.50	0	0	0	0	0	0	18	5	2	6	6	0	0	0	0	0	14	684	0	0	0	4.00	
H	1997	092529	Tanner Cr	Tongue Point	04/28/99	26,269	204,143	39.78	0	0	0	0	0	0	9	7	4	11	3	0	0	0	0	0	42	342	0	0	0	1.59	
H	1998	092913	Tanner Cr	Tongue Point	05/04/00	24,634	228,290	42.00	0	0	0	0	0	0	47	35	7	12	11	0	0	0	0	0	64	412	0	0	0	2.39	
H	1998	092749	Toutle R (WA)	Tongue Point	05/11/00	26,176	525,833	33.90	0	0	0	0	5	52	30	5	16	24	0	0	0	0	0	0	31	939	0	0	0	4.21	
H	1989	075559	Clackamas R	Youngs R	04/18/91	25,853	565,011	29.45	0	0	4	0	0	19	9	6	33	30	3	6	32	115	0	0	0	0	0	0	0	0.99	
H	1989	075554	Clackamas R	Youngs R	05/06/91	28,589	558,617	29.07	0	0	6	2	0	28	4	14	51	25	0	0	33	100	0	0	0	0	0	0	0	0.92	
H	1989	075558	Clackamas R	Youngs R	05/16/91	26,120	507,884	29.84	0	0	8	0	0	33	0	17	30	41	3	0	26	144	0	0	0	0	0	0	0	1.16	
H	1989	075555	Clackamas R	Youngs R	05/31/91	29,356	505,549	33.59	0	0	7	0	0	44	12	24	108	71	0	5	36	272	0	0	0	0	0	0	0	1.97	
H	1991	076014	Clackamas R	Youngs R	05/05/93	21,772	176,501	35.71	0	0	24	0	0	0	0	0	0	0	0	0	0	2	476	0	0	0	0	0	0	2.31	
H	1991	076015	Clackamas R	Youngs R	05/24/93	25,928	242,290	28.52	0	0	0	0	0	0	0	0	0	0	0	0	0	3	108	0	0	0	0	0	0	0.43	
H	1991	076129	Clackamas R	Youngs R	06/01/93	23,913	846,913	29.45	0	5	15	0	0	2	0	0	0	0	0	0	0	3	168	0	0	0	0	0	0	0.81	
H	1991	076130	Clackamas R	Youngs R	06/08/93	24,003	569,758	30.64	0	0	4	0	0	0	0	0	0	0	0	0	0	0	52	0	0	0	0	0	0	0.23	
H	1992	070135	Clackamas R	Youngs R	04/04/94	24,850	257,853	30.64	0	0	0	0	0	24	9	3	1	0	0	0	13	60	0	0	0	0	0	0	0	0.44	
H	1992	070136	Clackamas R	Youngs R	06/15/94	23,940	788,523	33.35	0	0	0	0	0	26	6	0	0	0	0	0	0	5	115	0	0	0	0	0	0	0.63	
H	1993	070743	Clackamas R	Youngs R	05/08/95	22,545	467,531	35.97	0	0	0	0	0	7	0	0	0	0	0	0	0	15	46	0	0	0	0	0	0	0.30	
H	1993	070744	Clackamas R	Youngs R	05/15/95	22,057	280,412	35.97	0	0	0	0	0	2	0	0	0	0	0	0	0	3	46	0	0	0	0	0	0	0.23	
H	1994	071222	Clackamas R	Youngs R	05/07/96	26,274	216,187	48.20	0	0	0	0	0	1	0	0	0	2	0	0	0	51	245	0	0	0	0	0	0	1.14	
H	1994	071223	Clackamas R	Youngs R	05/20/96	22,104	341,339	40.46	0	0	0	0	0	1	0	0	0	0	0	0	0	34	326	0	0	0	0	0	0	1.63	
H	1996	053732	Clackamas R	Youngs R	05/01/98	52,510	268,870	37.18	0	0	0	0	0	2	0	0	0	0	0	0	0	3	55	0	0	0	0	0	0	0.11	
H	1996	053733	Clackamas R	Youngs R	05/01/98	50,604	261,654	37.18	0	0	0	0	0	36	12	0	5	2	0	0	0	30	825	0	0	0	0	0	0	1.80	
H	1997	093947	Clackamas R	Youngs R	05/05/99	502,146	502,146	36.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1997	053947	Clackamas R	Youngs R	05/05/99	24,963	502,146	36.28	0	0	0	0	6	23	10	5	22	9	0	0	29	928	0	0	0	0	0	0	0	4.13	
H	1997	093946	Clackamas R	Youngs R	05/19/99	47,962	47,962	38.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
H	1997	053946	Clackamas R	Youngs R	05/19/99	24,874	479,562	38.43	0	0	0	0	0	0	0	0	0	0	0	0	0	1	41	0	0	0	0	0	0	0.17	
H	1998	053948	Clackamas R	Youngs R	05/31/00	21,731	476,148	28.50	0	0	0	0	0	32	15	0	0	2	0	0	1	599	0	0	0	0	0	0	0	2.99	
H	1990	075714	Big Creek	Youngs R	05/12/92	27,438	674,451	30.40	0	0	0	0	0	52	9	6	4	2	8	11	13	198	0	0	0	0	0	0	0	1.10	
H	1990	075713	Kalama R	Youngs R	05/27/92	26,139	405,976	19.70	0	0	5	0	0	10	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0.13	
H	1990	075712	Klaskanine R	Youngs R	04/13/92	25,980	176,127	33.10	0	0	18	0	0	109	32	5	9	12	4	33	42	269	0	0	0	0	0	0	0	2.05	
H	1990	075455	Klaskanine R	Youngs R	04/15/92	26,510	227,099	67.70	0	0	35	0	0	115	35	9	16	30	6	41	456	457	0	0	0	0	0	0	0	4.53	
H	1991	076111	Klaskanine R	Youngs R	04/08/93	26,556	126,866	41.23	0	0	3	0	0	0	0	0	0	0	0	0	22	175	0	0	0	0	0	0	0	0.75	
H	1990	074411	Sandy R	Youngs R	06/02/92	27,219	257,156	32.90	0	0	0	0	0	0	0	0	0	3	0	3	0	4	0	0	0	0	0	0	0	0.04	
H	1990	075715	Sandy R	Youngs R	06/10/92	26,542	461,463	28.90	0	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0.03	
H	1994	071136	Sandy R	Youngs R	05/28/96	26,418	295,512	40.46	0	0	0	0	0	0	0	0	0	0	0	0	7	43	0	0	0	0	0	0	0	0.19	
H	1995	071335	Sandy R	Youngs R	05/12/97	26,598	633,310	31.50	0	0	0	0	0	7	2	0	0	0	0	0	3	160	0	0	0	0	0	0	0	0.65	
H	1997	092643	Sandy R	Youngs R	06/01/99	26,215	272,656	33.84	0	0	0	0	0	26	12	0	18	8	0	3	3	715	0	0	0	0	0	0	0	2.99	
H	1998	092729	Sandy R	Youngs R	05/25/00	26,699	272,992	33.40	0	0	0	0	0	53	38	4	12	5	0	0	0	660	0	0	0	0	0	0	0	2.89	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																		%								
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries													
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+							
COHO SALMON (Continued)																															
CEDC Fisheries:																															
H	1991	076128	Tanner Cr	Youngs R	05/03/93	25,642	825,810	38.76	0	0	16	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	774	0	0	0	3.11
H	1991	075952	Tanner Cr	Youngs R	05/04/93	19,776	502,918	40.13	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	470	0	0	0	2.52
H	1992	076142	Tanner Cr	Youngs R	04/04/94	50,745	827,864	32.86	0	0	12	0	0	40	14	0	0	0	0	0	0	0	0	0	0	22	121	0	0	0	0.41
H	1992	070124	Tanner Cr	Youngs R	05/02/94	27,869	300,907	46.28	0	0	14	0	0	162	53	0	0	0	3	5	159	674	0	0	0	0	0	0	0	0	3.84
H	1993	070758	Tanner Cr	Youngs R	04/18/95	25,886	822,185	46.71	0	0	0	0	0	0	0	0	0	0	0	0	5	42	0	0	0	0	0	0	0	0	0.18
H	1993	071544	Tanner Cr	Youngs R	05/11/95	28,995	138,371	58.08	0	0	18	0	0	36	5	0	0	0	0	0	23	997	0	0	0	0	0	0	0	0	3.72
H	1994	071242	Tanner Cr	Youngs R	04/15/96	28,299	808,263	39.07	0	0	0	0	0	0	0	0	0	0	0	0	14	52	0	0	0	0	0	0	0	0	0.23
H	1994	070961	Tanner Cr	Youngs R	04/26/96	26,548	829,600	47.20	0	0	0	0	0	3	0	0	0	0	0	0	58	117	0	0	0	0	0	0	0	0	0.67
H	1995	070942	Tanner Cr	Youngs R	05/05/97	27,198	146,818	34.36	0	0	0	0	0	18	2	0	0	0	0	0	1	376	0	0	0	0	0	0	0	0	1.46
H	1996	092302	Tanner Cr	Youngs R	05/01/98	25,672	133,373	43.61	0	0	0	0	0	16	12	1	2	0	0	5	76	567	0	0	0	0	0	0	0	0	2.64
H	1996	092336	Tanner Cr	Youngs R	05/26/98	29,469	425,634	34.10	0	0	0	0	0	26	4	0	4	1	0	0	0	156	0	0	0	0	0	0	0	0	0.65
H	1997	092422	Tanner Cr	Youngs R	04/12/99	26,676	663,012	32.63	0	0	0	0	0	4	0	0	0	0	0	4	7	119	0	0	0	0	0	0	0	0	0.50
H	1997	092334	Tanner Cr	Youngs R	04/28/99	28,809	158,203	38.11	0	0	0	0	0	9	6	3	10	2	0	0	65	580	0	0	0	0	0	0	0	0	2.34
H	1998	092716	Tanner Cr	Youngs R	04/12/00	26,244	836,845	28.90	0	0	0	0	0	18	5	0	3	2	0	4	76	375	0	0	0	0	0	0	0	0	1.84
H	1998	092914	Tanner Cr	Youngs R	05/04/00	24,396	206,377	38.10	0	0	0	0	0	39	22	4	10	15	0	4	109	658	0	0	0	0	0	0	0	0	3.53
Klaskanine:																															
H	1989	074222	Klaskanine R	Klaskanine R, NF	05/07/91	10,010	419,711	40.13	0	0	7	0	0	10	2	5	22	11	0	2	10	75	0	0	0	0	0	0	0	0	1.44
H	1989	074517	Klaskanine R	Klaskanine R, NF	05/07/91	10,228	419,730	40.13	0	0	3	0	0	9	0	28	13	21	0	8	15	79	0	0	0	0	0	0	0	0	1.72
H	1989	074518	Klaskanine R	Klaskanine R, NF	05/07/91	9,921	419,456	40.13	0	0	0	0	0	12	5	8	35	26	0	0	6	62	0	0	0	0	0	0	0	0	1.55
H	1990	074520	Klaskanine R	Klaskanine R, NF	05/11/92	10,874	341,002	33.10	0	0	0	0	0	20	3	2	0	0	0	2	2	22	0	0	0	0	0	0	0	0	0.47
H	1990	074644	Klaskanine R	Klaskanine R, NF	05/11/92	10,627	340,755	33.10	0	0	0	0	0	14	0	0	1	2	0	0	0	17	0	0	0	0	0	0	0	0	0.32
H	1990	074645	Klaskanine R	Klaskanine R, NF	05/11/92	9,640	339,701	33.10	0	0	0	0	0	2	3	1	0	3	0	2	0	21	0	0	0	0	0	0	0	0	0.33
H	1991	074832	Klaskanine R	Klaskanine R, NF	05/16/93	25,977	848,853	33.35	6	0	3	0	1	0	0	0	0	0	0	0	0	74	0	0	0	0	0	0	0	0	0.32
H	1992	070362	Klaskanine R	Klaskanine R, NF	04/15/94	26,574	831,887	37.48	0	0	7	0	0	5	3	0	0	0	0	0	2	67	0	0	0	0	0	0	0	0	0.32
H	1993	075262	Kalama R	Klaskanine R, NF	04/04/95	26,279	1,201,313	43.99	0	2	0	0	0	8	3	0	0	0	0	0	28	94	0	0	0	0	0	0	0	0	0.51
H	1994	075415	Klaskanine R	Klaskanine R, NF	04/07/96	24,974	837,355	45.36	0	0	0	0	0	3	3	0	0	0	0	0	16	108	0	0	0	0	0	0	0	0	0.52
H	1995	071361	Tanner Cr	Umatilla R	03/10/97	11,057	31,921	25.06	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0.04
H	1995	071362	Tanner Cr	Umatilla R	03/10/97	2,681	8,209	25.06	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0.15
H	1995	071363	Tanner Cr	Umatilla R	03/10/97	7,890	22,889	25.06	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.01
H	1995	091805	Tanner Cr	Umatilla R	03/10/97	7,903	10,503	25.06	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.03
Sandy:																															
H	1989	075540	Sandy R	Cedar Cr (Sandy)	05/01/91	25,450	64,209	29.07	0	5	4	0	0	13	0	10	6	22	0	0	6	67	0	0	0	0	0	0	0	0	0.52
H	1989	075541	Sandy R	Cedar Cr (Sandy)	05/01/91	26,963	63,346	29.64	0	0	3	0	0	6	6	8	6	26	0	2	7	66	0	0	0	0	0	0	0	0	0.48
H	1989	075546	Sandy R	Cedar Cr (Sandy)	06/06/91	25,997	57,343	30.03	0	0	16	0	0	114	28	39	157	128	3	0	8	627	0	0	0	0	0	0	0	0	4.31
H	1989	075543	Sandy R	Cedar Cr (Sandy)	06/06/91	26,586	55,261	30.23	0	0	0	0	0	90	30	32	242	136	3	2	13	655	0	0	0	0	0	0	0	0	4.52
H	1989	075542	Sandy R	Cedar Cr (Sandy)	06/06/91	26,327	59,004	30.44	0	0	2	0	6	89	27	52	226	128	0	0	9	663	0	0	0	0	0	0	0	0	4.57

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%			
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries					Surv.				
brood,	tagcode Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4		5	6+		
COHO SALMON (Continued)																										
Sandy (Continued):																										
H	1989	075547	Sandy R	Cedar Cr (Sandy)	06/06/91	25,863	58,240	30.44	0	0	3	3	0	87	30	31	222	128	6	4	8	579	0	0	0	4.26
H	1989	075544	Sandy R	Cedar Cr (Sandy)	06/06/91	25,662	55,210	30.64	0	0	5	0	0	91	35	46	204	114	0	4	2	421	0	0	0	3.59
H	1989	075545	Sandy R	Cedar Cr (Sandy)	06/06/91	26,850	43,448	31.94	0	0	4	0	0	87	26	39	136	90	3	2	3	475	0	0	0	3.22
H	1990	075720	Sandy R	Cedar Cr (Sandy)	05/01/92	28,699	29,130	29.80	0	0	10	0	0	62	30	3	4	3	0	18	3	139	0	0	0	0.95
H	1990	075724	Sandy R	Cedar Cr (Sandy)	05/01/92	28,368	28,797	29.80	0	0	3	0	0	71	21	1	12	2	4	10	2	145	0	0	0	0.96
H	1990	075725	Sandy R	Cedar Cr (Sandy)	06/02/92	28,377	355,669	30.00	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0.01
H	1990	075726	Sandy R	Cedar Cr (Sandy)	06/02/92	27,553	369,409	30.00	0	0	0	0	0	6	0	0	0	0	0	0	0	2	0	0	0	0.03
H	1990	075727	Sandy R	Cedar Cr (Sandy)	06/02/92	28,149	63,593	30.40	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.01
H	1990	075728	Sandy R	Cedar Cr (Sandy)	06/02/92	28,234	63,454	30.40	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0.01
H	1990	075729	Sandy R	Cedar Cr (Sandy)	06/02/92	28,262	63,598	31.10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.00
H	1990	075730	Sandy R	Cedar Cr (Sandy)	06/02/92	28,133	63,630	31.50	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0.01
H	1991	075951	Sandy R	Cedar Cr (Sandy)	05/02/93	52,320	247,121	30.44	0	0	27	4	0	0	0	0	0	0	0	5	1	473	0	0	0	0.97
H	1991	071531	Sandy R	Cedar Cr (Sandy)	06/02/93	27,473	259,210	30.23	0	0	13	4	0	0	0	0	0	0	0	0	0	219	0	0	0	0.86
H	1991	071532	Sandy R	Cedar Cr (Sandy)	06/02/93	27,003	260,055	30.23	0	0	23	0	0	0	0	0	0	0	0	0	0	197	0	0	0	0.81
H	1991	076019	Sandy R	Cedar Cr (Sandy)	06/02/93	27,687	62,431	30.44	0	0	18	4	0	0	0	0	0	0	0	0	0	245	0	0	0	0.96
H	1991	076016	Sandy R	Cedar Cr (Sandy)	06/02/93	27,383	64,006	31.07	0	0	7	0	0	0	0	0	0	0	0	0	0	213	0	0	0	0.80
H	1991	076018	Sandy R	Cedar Cr (Sandy)	06/02/93	27,731	64,345	31.50	0	0	8	4	0	0	0	0	0	0	0	0	0	245	0	0	0	0.93
H	1991	076017	Sandy R	Cedar Cr (Sandy)	06/02/93	27,857	65,783	31.94	0	0	28	3	0	0	0	0	0	0	0	0	0	279	0	0	0	1.11
H	1992	075126	Sandy R	Cedar Cr (Sandy)	04/04/94	22,071	54,611	22.68	0	0	0	0	0	11	3	0	0	0	0	0	0	50	0	0	0	0.29
H	1992	074929	Sandy R	Cedar Cr (Sandy)	04/04/94	23,141	56,771	23.50	0	0	0	0	0	11	3	0	0	0	0	0	3	63	0	0	0	0.35
H	1992	074933	Sandy R	Cedar Cr (Sandy)	04/04/94	23,758	170,622	24.00	0	0	0	0	0	7	3	2	0	0	0	0	1	49	0	0	0	0.26
H	1992	070239	Sandy R	Cedar Cr (Sandy)	05/03/94	48,070	272,188	30.23	0	0	20	0	0	24	0	0	0	0	0	0	1	65	0	0	0	0.23
H	1992	074934	Sandy R	Cedar Cr (Sandy)	06/01/94	22,862	59,590	30.44	0	0	29	0	0	25	4	0	0	0	0	0	0	120	0	0	0	0.78
H	1992	074930	Sandy R	Cedar Cr (Sandy)	06/01/94	25,096	62,281	30.64	0	0	52	0	0	32	11	0	0	0	0	0	0	141	0	0	0	0.94
H	1992	075127	Sandy R	Cedar Cr (Sandy)	06/01/94	23,046	241,271	30.85	0	0	24	0	0	25	0	0	0	0	0	0	0	109	0	0	0	0.69
H	1993	070552	Sandy R	Cedar Cr (Sandy)	04/09/95	52,335	54,686	32.87	0	0	4	0	0	22	0	0	0	0	0	0	12	259	0	0	0	0.57
H	1993	070551	Sandy R	Cedar Cr (Sandy)	05/03/95	55,237	57,924	30.04	0	0	0	0	0	6	0	0	0	0	0	0	0	49	0	0	0	0.10
H	1994	071135	Sandy R	Cedar Cr (Sandy)	03/27/96	28,047	70,806	30.83	0	0	0	0	0	4	0	0	0	0	0	0	10	34	0	0	0	0.17
H	1994	070839	Sandy R	Cedar Cr (Sandy)	03/27/96	27,601	70,156	30.86	0	0	0	0	0	0	2	0	0	0	0	0	9	36	0	0	0	0.17
H	1994	071134	Sandy R	Cedar Cr (Sandy)	03/27/96	28,803	70,093	31.26	0	0	0	0	0	0	0	0	0	0	0	0	14	69	0	0	0	0.29
H	1994	070840	Sandy R	Cedar Cr (Sandy)	03/27/96	27,221	69,120	31.48	0	0	0	0	0	0	0	0	0	0	0	3	7	38	0	0	0	0.18
H	1994	070841	Sandy R	Cedar Cr (Sandy)	03/27/96	26,498	70,272	31.70	0	0	0	0	0	0	2	0	0	0	0	0	18	46	0	0	0	0.25
H	1994	071133	Sandy R	Cedar Cr (Sandy)	03/27/96	27,958	68,990	32.15	0	0	0	0	0	0	0	0	0	0	0	0	14	41	0	0	0	0.20
H	1994	070837	Sandy R	Cedar Cr (Sandy)	05/06/96	27,133	124,717	30.86	0	0	0	0	0	0	0	0	0	0	4	0	13	106	0	0	0	0.45
H	1994	070838	Sandy R	Cedar Cr (Sandy)	05/06/96	27,393	124,797	31.72	0	0	0	0	0	6	0	0	0	0	0	0	16	131	0	0	0	0.56
H	1995	070843	Sandy R	Cedar Cr (Sandy)	04/07/97	27,492	194,817	29.26	0	0	0	0	0	2	0	0	0	0	0	0	4	141	0	0	0	0.53
H	1995	070844	Sandy R	Cedar Cr (Sandy)	04/07/97	27,459	195,252	29.45	0	0	0	0	0	6	7	0	0	0	0	0	4	161	0	0	0	0.65
H	1995	091838	Sandy R	Cedar Cr (Sandy)	05/05/97	29,337	233,740	30.03	0	0	0	0	0	2	7	0	0	0	0	0	1	211	0	0	0	0.75

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%							
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas											Freshwater Recoveries													
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+						
COHO SALMON (Continued)																														
Sandy (Continued):																														
H	1995	092034	Sandy R	Cedar Cr (Sandy)	05/07/97	16,085	16,147	29.64	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	3	181	0	0	0	1.20
H	1995	091839	Sandy R	Cedar Cr (Sandy)	05/07/97	30,004	30,714	29.84	0	0	0	0	0	0	10	3	0	0	0	0	0	0	0	0	5	300	0	0	0	1.06
H	1996	092332	Sandy R	Cedar Cr (Sandy)	04/15/98	29,251	135,391	29.65	0	0	0	0	0	0	14	5	0	2	0	0	0	0	0	14	147	0	0	0	0.62	
H	1996	092333	Sandy R	Cedar Cr (Sandy)	05/14/98	29,770	120,211	31.28	0	0	0	0	0	0	11	3	0	0	2	0	0	0	0	1	68	0	0	0	0.29	
H	1997	092432	Sandy R	Cedar Cr (Sandy)	04/15/99	26,383	364,796	30.44	0	0	0	0	0	0	47	15	0	23	9	0	0	0	23	476	0	0	0	2.25		
H	1997	071316	Sandy R	Cedar Cr (Sandy)	05/14/99	63,354	64,077	30.73	0	0	0	0	0	0	40	15	5	12	13	0	0	0	18	737	0	0	0	1.33		
H	1997	092433	Sandy R	Cedar Cr (Sandy)	05/14/99	27,760	232,964	31.61	0	0	0	0	0	0	11	20	0	2	3	0	0	0	9	351	0	0	0	1.43		
H	1998	092727	Sandy R	Cedar Cr (Sandy)	04/18/00	26,254	402,526	30.20	0	0	0	0	0	0	80	26	5	10	19	0	0	0	19	613	0	0	0	2.94		
H	1998	092728	Sandy R	Cedar Cr (Sandy)	05/15/00	26,491	332,020	30.77	0	0	0	0	0	0	110	35	2	25	32	0	0	0	11	662	0	0	0	3.31		
H	1998	092747	Sandy R	Cedar Cr (Sandy)	05/15/00	73,749	73,749	31.90	0	0	0	0	0	0	207	72	25	41	51	0	0	0	40	1700	0	0	0	2.90		
H	1995	091840	Sandy R	Klickitat R (WA)	03/26/97	30,918	273,896	24.92	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	7	0	0	0	0.03	
Trojan Pond:																														
H	1989	075539	Sandy R	Columbia R	05/20/91	27,206	120,655	27.65	0	0	0	0	0	0	6	2	4	15	7	0	0	0	3	18	0	0	0	0.20		
H	1991	076126	Sandy R	Columbia R	04/30/93	27,809	263,571	32.16	0	0	16	0	0	0	2	0	0	0	0	0	0	0	0	0	41	0	0	0	0.21	
Wahkeena Pond:																														
H	1989	074861	Tanner Cr	Wahkeena Pond	03/31/91	10,154	366,918	23.74	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0.03		
H	1989	074862	Tanner Cr	Wahkeena Pond	03/31/91	9,794	366,539	23.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
H	1989	074863	Tanner Cr	Wahkeena Pond	03/31/91	10,027	366,787	23.74	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0.03		
H	1990	074045	Tanner Cr	Wahkeena Pond	05/12/92	9,456	633,436	28.90	0	0	5	0	0	0	4	3	0	0	3	0	0	5	0	20	0	0	0	0.42		
H	1990	074046	Tanner Cr	Wahkeena Pond	05/12/92	9,241	633,211	28.90	0	0	0	0	0	0	10	0	2	4	0	0	0	0	0	6	0	0	0	0.24		
H	1990	074047	Tanner Cr	Wahkeena Pond	05/12/92	9,376	633,353	28.90	0	0	0	0	0	0	13	0	0	0	0	0	0	2	0	21	0	0	0	0.38		
H	1991	073728	Tanner Cr	Wahkeena Pond	04/22/93	11,910	749,707	25.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0.32		
H	1991	074853	Tanner Cr	Wahkeena Pond	04/22/93	12,535	750,071	25.20	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	0.40		
H	1992	071529	Sandy R	Wahkeena Pond	04/30/94	23,472	1,503,732	23.14	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	2	0	0	0	0.03		
SUMMER STEELHEAD																														
Irrigon:																														
H	1990	075353	Wallowa R	Big Canyon Cr	04/26/91	26,713	27,466	85.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	104	8	0	0	0.79		
H	1990	075354	Wallowa R	Big Canyon Cr	04/26/91	24,751	25,021	85.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	69	2	0	0	0.61		
H	1990	075352	Wallowa R	Big Canyon Cr	04/26/91	27,267	113,410	103.1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	91	186	4	0	0	1.04		
H	1990	075351	Wallowa R	Big Canyon Cr	04/26/91	26,259	108,377	110.6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	108	138	7	0	0	0.97		
H	1991	075857	Wallowa R	Big Canyon Cr	04/23/92	25,725	26,658	87.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17	0	0	0	0.08		
H	1991	075858	Wallowa R	Big Canyon Cr	04/23/92	26,429	27,083	87.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	0	0	0	0.07		
H	1991	075855	Wallowa R	Big Canyon Cr	04/23/92	26,046	122,344	94.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	30	1	0	0	0.15		
H	1991	075856	Wallowa R	Big Canyon Cr	04/23/92	26,667	122,647	94.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	0	0	0	0.05		
	1992	076102	Wallowa R	Big Canyon Cr	04/23/93	25,890	112,086	87.21	0	1	0	0	0	0	0	0	0	0	0	0	0	0	48	30	0	0	0	0.31		

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas										Freshwater Recoveries						
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	
SUMMER STEELHEAD (Continued)																							
Irrigon (Continued):																							
	1992	076103	Wallowa R	Big Canyon Cr	04/23/93	25,222	111,857	87.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.35
	1992	076104	Wallowa R	Big Canyon Cr	04/23/93	23,277	25,267	92.55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.45
	1992	076105	Wallowa R	Big Canyon Cr	04/23/93	24,821	26,315	92.55	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.39
	1993	070327	Wallowa R	Big Canyon Cr	04/22/94	23,287	25,334	108.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.71
	1993	070328	Wallowa R	Big Canyon Cr	04/22/94	21,981	24,873	108.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.61
	1993	070325	Wallowa R	Big Canyon Cr	04/22/94	26,858	52,569	113.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.01
	1993	070326	Wallowa R	Big Canyon Cr	04/22/94	26,960	52,978	113.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.70
	1994	070920	Wallowa R	Big Canyon Cr	04/21/95	50,524	53,822	103.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.52
	1994	075824	Wallowa R	Big Canyon Cr	04/21/95	26,990	112,478	116.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.51
	1994	075825	Wallowa R	Big Canyon Cr	04/21/95	27,281	112,478	116.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.76
	1995	071161	Wallowa R	Big Canyon Cr	04/17/96	24,771	25,522	85.58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.64
	1995	071162	Wallowa R	Big Canyon Cr	04/17/96	25,294	25,448	85.58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.61
	1995	071159	Wallowa R	Big Canyon Cr	04/17/96	27,223	111,419	96.51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.56
	1995	071160	Wallowa R	Big Canyon Cr	04/17/96	27,289	111,418	96.51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.70
	1996	075330	Wallowa R	Big Canyon Cr	04/08/97	25,227	53,796	82.47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.20
	1996	091825	Wallowa R	Big Canyon Cr	04/08/97	26,766	53,795	82.47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19
	1996	091826	Wallowa R	Big Canyon Cr	04/23/97	26,571	54,773	88.94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.37
	1996	091827	Wallowa R	Big Canyon Cr	04/23/97	26,844	54,771	88.94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.32
	1997	092326	Wallowa R	Big Canyon Cr	03/31/98	24,970	95,873	81.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.46
	1997	092327	Wallowa R	Big Canyon Cr	03/31/98	26,142	97,079	90.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.27
	1997	092330	Wallowa R	Big Canyon Cr	03/31/98	26,096	81,735	92.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.28
	1997	092331	Wallowa R	Big Canyon Cr	05/12/98	28,309	87,453	98.60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.26
M	1988	074656	Imnaha R	Little Sheep Cr	04/24/89	27,461	125,302	85.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.29
M	1988	074657	Imnaha R	Little Sheep Cr	04/24/89	27,235	124,156	85.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.23
M	1989	075124	Imnaha R	Little Sheep Cr	04/17/90	26,363	124,990	79.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.94
M	1989	075125	Imnaha R	Little Sheep Cr	04/17/90	26,164	124,573	79.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.09
M	1990	075355	Imnaha R	Little Sheep Cr	04/23/91	23,948	28,448	70.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.56
M	1990	075356	Imnaha R	Little Sheep Cr	04/23/91	19,516	22,159	70.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.52
M	1990	075357	Imnaha R	Little Sheep Cr	04/23/91	24,282	92,222	88.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.14
M	1990	075358	Imnaha R	Little Sheep Cr	04/23/91	26,644	100,179	88.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.19
H	1991	075860	Imnaha R	Little Sheep Cr	04/27/92	24,828	24,962	74.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
H	1991	075861	Imnaha R	Little Sheep Cr	04/27/92	27,195	27,265	74.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
M	1991	075859	Imnaha R	Little Sheep Cr	04/27/92	26,895	98,280	80.98	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.02
M	1991	075862	Imnaha R	Little Sheep Cr	04/27/92	26,752	98,280	80.98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	1992	076063	Imnaha R	Little Sheep Cr	04/28/93	22,570	24,306	79.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22
	1992	076101	Imnaha R	Little Sheep Cr	04/28/93	23,393	24,441	79.56	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.23
	1992	076061	Imnaha R	Little Sheep Cr	04/28/93	24,357	119,636	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25
	1992	076062	Imnaha R	Little Sheep Cr	04/28/93	24,806	118,333	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.21

Appendix Table A. Continued.

STOCK GROUP,			Ocean Catch																						
stock, (source H, N, M),		Release	Number Released		Size	Oregon Areas												Freshwater Recoveries					%		
brood, tagcode	Hatchery	Release Site	Date	Ad+CWT	Total	(gm)	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	6+	Surv.	
SUMMER STEELHEAD (Continued)																									
Irrigon (Continued):																									
1993	070322	Imnaha R	Little Sheep Cr	04/25/94	23,876	126,314	79.58	0	0	0	0	0	0	0	0	0	0	0	0	12	20	0	0	0	0.13
1993	070323	Imnaha R	Little Sheep Cr	04/25/94	22,900	23,285	88.94	0	0	0	0	0	0	0	0	0	0	0	0	27	8	0	0	0	0.15
1993	070324	Imnaha R	Little Sheep Cr	04/25/94	24,187	24,681	88.94	0	0	0	0	0	0	0	0	0	0	0	0	11	10	0	0	0	0.09
1993	070321	Imnaha R	Little Sheep Cr	04/25/94	24,658	126,495	96.51	0	0	0	0	0	0	0	0	0	0	0	0	60	24	0	0	0	0.34
1994	070919	Imnaha R	Little Sheep Cr	05/01/95	54,985	56,954	81.00	0	0	0	0	0	0	0	0	0	0	0	0	119	33	1	0	0	0.28
1994	075820	Imnaha R	Little Sheep Cr	05/01/95	26,980	115,441	92.57	0	0	0	0	0	0	0	0	0	0	0	0	85	33	0	0	0	0.44
1994	075821	Imnaha R	Little Sheep Cr	05/01/95	26,630	115,441	92.57	0	0	0	0	0	0	0	0	0	0	0	0	104	51	0	0	0	0.58
1995	071217	Imnaha R	Little Sheep Cr	04/29/96	26,025	134,269	82.32	0	0	0	0	0	0	0	0	0	0	0	0	61	29	0	0	0	0.35
1995	071218	Imnaha R	Little Sheep Cr	04/29/96	26,986	134,268	82.32	0	0	0	0	0	0	0	0	0	0	0	0	99	22	0	0	0	0.45
1995	071219	Imnaha R	Little Sheep Cr	04/29/96	26,363	26,972	87.23	0	0	0	0	0	0	0	0	0	0	0	0	30	5	0	0	0	0.13
1995	071220	Imnaha R	Little Sheep Cr	04/29/96	26,337	26,637	87.23	0	0	0	0	0	0	0	0	0	0	0	0	20	2	0	0	0	0.08
1996	091832	Imnaha R	Little Sheep Cr	04/15/97	26,175	104,468	85.58	0	0	0	0	0	0	0	0	0	0	0	0	44	25	0	0	0	0.26
1996	091833	Imnaha R	Little Sheep Cr	04/15/97	28,070	104,468	85.58	0	0	0	0	0	0	0	0	0	0	0	0	45	20	0	0	0	0.23
1997	074860	Imnaha R	Little Sheep Cr	04/26/98	13,565	13,660	79.58	0	0	0	0	0	0	0	0	0	0	0	0	60	8	0	0	0	0.50
1997	075301	Imnaha R	Little Sheep Cr	04/26/98	12,970	13,718	90.72	0	0	0	0	0	0	0	0	0	0	0	0	21	10	0	0	0	0.24
1997	092322	Imnaha R	Little Sheep Cr	04/26/98	25,425	31,409	90.72	0	0	0	0	0	0	0	0	0	0	0	0	44	23	1	0	0	0.27
1997	092323	Imnaha R	Little Sheep Cr	04/26/98	26,468	27,692	90.72	0	0	0	0	0	0	0	0	0	0	0	0	85	19	0	0	0	0.39
H	1988	074651	Wallowa R	Spring Creek	04/24/89	26,526	202,854	85.57	0	0	0	0	0	0	0	0	0	0	0	17	20	2	0	0	0.15
H	1988	074650	Wallowa R	Spring Creek	04/24/89	26,922	206,088	87.21	0	0	0	0	0	0	0	0	0	0	0	20	39	1	0	0	0.22
H	1988	074542	Wallowa R	Spring Creek	04/24/89	26,303	44,242	116.3	0	0	0	0	0	0	0	0	0	0	0	28	75	6	0	0	0.41
H	1988	074543	Wallowa R	Spring Creek	04/24/89	26,718	43,727	119.4	0	0	0	0	0	0	0	0	0	0	0	39	54	4	0	0	0.36
H	1988	074652	Wallowa R	Spring Creek	04/25/89	25,622	27,156	87.21	0	0	0	0	0	0	0	0	0	0	0	16	28	4	0	0	0.19
H	1988	074655	Wallowa R	Spring Creek	04/25/89	24,924	26,809	87.21	0	0	0	0	0	0	0	0	0	0	0	11	12	2	0	0	0.10
H	1989	075122	Wallowa R	Spring Creek	04/19/90	26,771	78,593	76.87	0	0	0	0	0	0	0	0	0	0	0	151	51	1	0	0	0.76
H	1989	075118	Wallowa R	Spring Creek	04/19/90	25,961	26,873	88.92	2	1	0	1	0	0	0	0	0	0	0	139	61	0	0	0	0.79
H	1989	075119	Wallowa R	Spring Creek	04/19/90	26,231	26,874	88.92	0	0	0	0	0	0	0	0	0	0	0	149	87	0	0	0	0.90
H	1989	075123	Wallowa R	Spring Creek	04/19/90	26,326	78,451	94.48	0	0	0	0	0	0	0	0	0	0	0	162	85	5	0	0	0.96
H	1989	075120	Wallowa R	Spring Creek	04/19/90	26,347	45,055	105.5	0	0	0	0	0	0	0	0	0	0	0	209	64	2	0	0	1.04
H	1989	075121	Wallowa R	Spring Creek	04/19/90	26,473	45,081	110.6	2	0	0	0	0	0	0	0	0	0	0	249	105	0	0	0	1.34
H	1990	075443	Wallowa R	Spring Creek	04/22/91	28,815	72,934	98.59	0	0	0	0	0	0	0	0	0	0	0	134	137	6	0	0	0.96
H	1990	075444	Wallowa R	Spring Creek	04/22/91	28,738	73,012	105.5	0	0	0	1	0	0	0	0	0	0	0	139	119	7	0	0	0.93
H	1990	075359	Wallowa R	Spring Creek	04/22/91	25,868	43,880	116.3	0	0	0	1	0	0	0	0	0	0	0	124	138	10	0	0	1.06
H	1990	075360	Wallowa R	Spring Creek	04/22/91	28,018	46,687	119.4	1	0	0	1	0	0	0	0	0	0	0	234	174	18	0	0	1.53
H	1991	075853	Wallowa R	Spring Creek	04/20/92	25,448	248,402	94.48	0	0	0	0	0	0	0	0	0	0	0	8	11	0	0	0	0.07
H	1991	075854	Wallowa R	Spring Creek	04/20/92	25,059	248,403	94.48	0	0	0	0	0	0	0	0	0	0	0	8	12	0	0	0	0.08
	1992	076106	Wallowa R	Spring Creek	04/19/93	26,088	247,770	96.49	0	0	0	0	0	0	0	0	0	0	0	43	28	0	0	0	0.27
	1992	076107	Wallowa R	Spring Creek	04/19/93	25,413	247,394	96.49	0	0	0	0	0	0	0	0	0	0	0	39	27	3	0	0	0.27
	1993	070330	Wallowa R	Spring Creek	04/18/94	27,694	246,515	116.3	0	0	0	0	0	0	0	0	0	0	0	121	73	0	0	0	0.70

Appendix Table A. Continued.

STOCK GROUP,				Ocean Catch																			%	
stock, (source H, N, M),		Release Site	Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					
brood, tagcode	Hatchery			Ad+CWT	Total		AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5		6+
SUMMER STEELHEAD (Continued)																								
Irrigon (Continued):																								
1993	070329	Wallowa R	Spring Creek	04/18/94	27,187	247,827	126.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.77	
1994	075823	Wallowa R	Spring Creek	04/16/95	26,937	247,984	94.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.35	
1994	075822	Wallowa R	Spring Creek	04/16/95	26,336	247,153	96.51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.51	
1995	071163	Wallowa R	Spring Creek	04/09/96	27,311	249,540	88.94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.55	
1995	071216	Wallowa R	Spring Creek	04/23/96	26,755	244,941	90.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.55	
1996	091829	Wallowa R	Spring Creek	04/01/97	26,360	257,776	87.23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.27	
1996	091828	Wallowa R	Spring Creek	04/18/97	26,798	259,114	92.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.32	
1996	091831	Wallowa R	Spring Creek	05/15/97	26,588	85,417	88.94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04	
1996	091830	Wallowa R	Spring Creek	05/30/97	24,487	78,175	90.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06	
1997	071247	Wallowa R	Spring Creek	03/24/98	25,301	43,570	49.84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25	
1997	092328	Wallowa R	Spring Creek	03/24/98	26,243	134,930	90.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.30	
1997	092329	Wallowa R	Spring Creek	04/08/98	26,245	184,420	90.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.38	
1997	092325	Wallowa R	Spring Creek	05/01/98	25,285	199,238	88.94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.30	
1997	092324	Wallowa R	Spring Creek	05/20/98	22,982	197,209	96.51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.43	
Oak Springs:																								
H	1988	074720	Umatilla R	Umatilla R	05/18/89	8,784	9,949	68.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06	
H	1988	074723	Umatilla R	Umatilla R	05/18/89	8,789	9,954	68.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	
H	1988	074724	Umatilla R	Umatilla R	05/18/89	8,784	9,949	68.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	
H	1988	074715	Umatilla R	Umatilla R	05/18/89	8,800	9,873	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	
H	1988	074717	Umatilla R	Umatilla R	05/18/89	8,791	9,864	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	
H	1988	074718	Umatilla R	Umatilla R	05/18/89	8,778	9,849	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	
N	1989	075212	Umatilla R	Meacham Cr	05/07/90	9,331	10,239	76.87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.87	
N	1989	075213	Umatilla R	Meacham Cr	05/07/90	9,133	10,022	76.87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	
N	1989	075214	Umatilla R	Meacham Cr	05/07/90	9,080	9,964	76.87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.91	
N	1989	075215	Umatilla R	Meacham Cr	05/11/90	9,511	9,830	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.99	
N	1989	075216	Umatilla R	Meacham Cr	05/11/90	9,525	9,845	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.08	
N	1989	075217	Umatilla R	Meacham Cr	05/11/90	9,454	9,771	82.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.85	
H	1990	075340	Umatilla R	Meacham Cr	05/02/91	9,835	10,086	73.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.84	
H	1990	075341	Umatilla R	Meacham Cr	05/02/91	9,819	10,070	73.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.70	
H	1990	075342	Umatilla R	Meacham Cr	05/02/91	9,814	10,065	73.15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.95	
H	1990	075343	Umatilla R	Meacham Cr	05/03/91	9,432	9,754	52.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.85	
H	1990	075344	Umatilla R	Meacham Cr	05/03/91	9,467	9,791	52.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.69	
H	1990	075345	Umatilla R	Meacham Cr	05/03/91	9,458	9,781	52.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.82	

Appendix Table A. Continued.

STOCK GROUP,					Ocean Catch																		%
stock, (source H, N, M),		Release Date	Number Released		Size (gm)	Oregon Areas												Freshwater Recoveries					
brood, tagcode	Hatchery		Release Site	Ad+CWT		Total	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	
SUMMER STEELHEAD (Continued)																							
Umatilla:																							
N	1991	073759	Umatilla R	Umatilla R	03/29/92	10,394	22,474	78.19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22
N	1991	073862	Umatilla R	Umatilla R	03/29/92	10,594	22,902	78.19	0	0	0	0	0	0	0	0	0	0	2	12	0	0	0.13
N	1991	074127	Umatilla R	Umatilla R	03/29/92	10,203	22,059	78.19	0	0	0	0	0	0	0	0	0	0	5	22	0	0	0.26
N	1991	075841	Umatilla R	Umatilla R	04/30/92	10,108	22,262	90.70	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0.02
N	1991	075842	Umatilla R	Umatilla R	04/30/92	9,498	21,365	90.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
N	1991	075843	Umatilla R	Umatilla R	04/30/92	9,747	20,923	90.70	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0.04
N	1991	075838	Umatilla R	Umatilla R	05/01/92	10,562	22,469	82.46	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.01
N	1991	075839	Umatilla R	Umatilla R	05/01/92	10,275	22,662	82.46	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.01
N	1991	075840	Umatilla R	Umatilla R	05/01/92	10,105	22,288	82.46	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.01
	1992	076055	Umatilla R	Umatilla R	04/16/93	10,031	27,854	80.98	0	1	0	0	0	0	0	0	0	0	39	17	0	0	0.57
	1992	076056	Umatilla R	Umatilla R	04/16/93	9,418	10,021	80.98	0	0	0	0	0	0	0	0	0	0	29	27	0	0	0.59
	1992	076057	Umatilla R	Umatilla R	04/16/93	9,643	10,104	80.98	0	0	0	0	0	0	0	0	0	0	37	23	0	0	0.62
	1992	076058	Umatilla R	Umatilla R	04/18/93	10,194	24,612	100.8	0	0	0	0	0	0	0	0	0	0	40	29	0	0	0.68
	1992	076059	Umatilla R	Umatilla R	04/18/93	9,792	10,173	100.8	0	0	0	0	0	0	0	0	0	0	23	20	0	0	0.44
	1992	076060	Umatilla R	Umatilla R	04/18/93	9,440	10,039	100.8	0	0	0	0	0	0	0	0	0	0	49	25	0	0	0.78
	1992	076052	Umatilla R	Umatilla R	05/13/93	13,117	43,767	74.35	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0.06
	1992	076053	Umatilla R	Umatilla R	05/13/93	11,410	11,691	74.35	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0.10
	1992	076054	Umatilla R	Umatilla R	05/13/93	9,907	10,007	74.35	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0.08
	1993	070143	Umatilla R	Umatilla R	04/11/94	10,471	26,481	92.57	0	0	0	0	0	0	0	0	0	0	31	12	0	0	0.41
	1993	070144	Umatilla R	Umatilla R	04/11/94	9,651	24,922	92.57	0	0	0	0	0	0	0	0	0	0	38	35	0	0	0.76
	1993	070141	Umatilla R	Umatilla R	04/14/94	9,952	24,692	88.94	0	0	0	0	0	0	0	0	0	0	22	13	0	0	0.35
	1993	070142	Umatilla R	Umatilla R	04/14/94	9,965	24,906	88.94	0	0	0	0	0	0	0	0	0	0	45	19	0	0	0.64
	1993	070139	Umatilla R	Umatilla R	05/12/94	8,595	26,411	87.23	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0.06
	1993	070140	Umatilla R	Umatilla R	05/12/94	8,400	25,686	87.23	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.01
	1994	070657	Umatilla R	Umatilla R	04/11/95	19,290	48,539	81.00	0	0	0	0	0	0	0	0	0	0	163	54	0	0	1.12
	1994	070656	Umatilla R	Umatilla R	04/13/95	18,812	49,983	96.51	0	0	0	0	0	0	0	0	0	0	157	133	3	0	1.56
	1994	070655	Umatilla R	Umatilla R	05/12/95	19,782	47,941	82.17	0	0	0	0	0	0	0	0	0	0	33	15	0	0	0.24
	1995	071035	Umatilla R	Umatilla R	04/12/96	19,742	47,543	88.94	0	0	0	0	0	0	0	0	0	0	70	58	0	0	0.65
	1995	071036	Umatilla R	Umatilla R	04/26/96	21,205	49,377	85.58	0	0	0	0	0	0	0	0	0	0	33	26	4	0	0.30
	1995	071034	Umatilla R	Umatilla R	05/09/96	20,633	49,783	88.94	0	0	0	0	0	0	0	0	0	0	5	25	0	0	0.15
	1996	091835	Umatilla R	Umatilla R	04/10/97	19,531	41,555	84.00	0	0	0	0	0	0	0	0	0	0	48	7	1	0	0.29
	1996	091836	Umatilla R	Umatilla R	04/11/97	19,103	46,788	98.60	0	0	0	0	0	0	0	0	0	0	89	16	0	0	0.55
	1996	091837	Umatilla R	Umatilla R	05/15/97	20,065	48,944	92.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	1997	092341	Umatilla R	Umatilla R	04/16/98	20,800	41,088	76.88	0	0	0	0	0	0	0	0	0	0	64	36	0	0	0.48
	1997	092340	Umatilla R	Umatilla R	04/17/98	20,646	49,084	96.51	0	0	0	0	0	0	0	0	0	0	112	25	1	0	0.67
	1997	092339	Umatilla R	Umatilla R	05/04/98	19,468	47,313	82.47	0	0	0	0	0	0	0	0	0	0	32	16	0	0	0.25

Appendix Table A. Concluded.

STOCK GROUP,			Ocean Catch																						
stock, (source H, N, M),			Release	Number Released		Size	Oregon Areas													Freshwater Recoveries					%
brood,	tagcode	Hatchery	Release	Ad+CWT	Total	(gm)	AK	NCBC	WCVI	GST	PS	WA	1&2	3	4	5	6&7	CA	2	3	4	5	6+	Surv.	
WINTER STEELHEAD																									
Oak Springs:																									
1993	070538	Hood R	Hood R, E Fk	04/13/94	5,748	6,445	84.00	0	0	0	0	0	0	0	0	0	0	0	0	1	12	4	0	0	0.30
1993	070539	Hood R	Hood R, E Fk	04/13/94	6,478	6,521	84.00	0	0	0	0	0	0	0	0	0	0	0	0	1	19	7	0	0	0.42
1993	070536	Hood R	Hood R, E Fk	04/13/94	6,821	6,863	100.8	0	0	0	0	0	0	0	0	0	0	0	0	2	11	7	0	0	0.29
1993	070537	Hood R	Hood R, E Fk	04/13/94	6,170	6,189	100.8	0	0	0	0	0	0	0	0	0	0	0	0	2	10	14	0	0	0.42
1994	070917	Hood R	Hood R, E Fk	04/19/95	9,654	11,148	79.58	0	0	0	0	0	0	0	0	0	0	0	0	0	23	4	0	0	0.28
1994	070918	Hood R	Hood R, E Fk	04/19/95	9,387	10,840	79.58	0	0	0	0	0	0	0	0	0	0	0	0	0	34	1	0	0	0.37
1994	070916	Hood R	Hood R, E Fk	04/19/95	9,935	10,371	88.94	0	0	0	0	0	0	0	0	0	0	0	0	1	33	6	0	0	0.40
1994	070863	Hood R	Hood R, E Fk	04/20/95	10,096	10,539	88.94	0	0	0	0	0	0	0	0	0	0	0	0	4	29	13	0	0	0.46
1995	071131	Hood R	Hood R, E Fk	05/08/96	23,995	23,995	88.94	0	0	0	0	0	0	0	0	0	0	0	0	3	9	5	0	0	0.07
1995	071132	Hood R	Hood R, E Fk	05/08/96	26,092	26,871	90.72	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0.04

APPENDIX B

Final Report

Project Title:

Evaluate the Technical and Biological Feasibility of Using Visual Implant
Elastomer (VIE) Tags to Mark Large Numbers of Juvenile Coho Salmon
(Oncorhynchus kisutch)

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ABSTRACT

In an effort to evaluate the Visual Implant Elastomer (VIE) tag as a tool to externally mass mark juvenile salmonids, we marked groups of juvenile coho salmon for three brood years at Sandy Fish Hatchery. During July of 1998, 1999 and 2000 respectively, fish received an initial VIE tag in the lower right jaw above the sinus cavity which leads up to the operculum. Initial VIE tag retention was determined at the time of coded wire tagging (CWTing) in November of each year. If the VIE tag was not easily detected with the naked eye, the fish were re-tagged with a secondary VIE tag of an alternate color to the lower left jaw. Overall VIE tag retention rates were determined the following January and fish were released in May. Average tagging rates ranged from less than 300 (during 1998) to nearly 2,400 (during 2000) fish per employee and day. Pre-release tag retention ranged from 95 percent (2001 release) to 99 percent (2000 release). Tag retention in coho salmon returning to the hatchery ranged from 0.0 to 0.2 percent for adults and from 7.1 to 70.6 percent in precocious males.

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We thank Ken Bourne, Sandy Fish Hatchery Manager, and his staff for their help during marking and sampling. We also thank Northwest Marine Technology (NMT), for their cooperation and expertise..

INTRODUCTION

Based on the need to distinguish hatchery reared from naturally produced coho salmon, as outlined by the Biological Opinion of the National Marine Fisheries Service (NMFS) and ODFW Native Fish Conservation Plan strategies, and the need to differentiate between stocks contributing to mixed stock fisheries and hatchery broodstock collections, ODFW is seeking viable fish marking techniques, that provide for less intrusive, external marks. Presently, fish are marked by excising single fins or fin combinations. Some fin marks are undesirable, either for their contribution to lower survival rates or for the difficulty in long term recognition by anglers, etc. The adipose fin mark has also served as the external indicator for the presence of CWTs (PSC 1995).

The study objective is to identify and evaluate alternative marks that are easy to apply, do not harm the fish, and are recognizable in returning adults.

METHODS AND MATERIALS

In July of 1998, 1999 and 2000, we set up a standard CWT marking trailer with 6 work stations for hand held VIE injectors powered by compressed air. Each

station had an injector, power supply, hand piece, and associated air hoses. The mixing packages for the fluorescent dye contained 6 CC of colored Elastomer, a jar of curing agent, a 10 CC syringe, and a stir stick. After mixing the Elastomer with the curing agent, the material was loaded into several 0.5 CC injecting syringes. The system is designed to achieve a mark similar in volume to NMT's coded wire tags, about 0.05 microliter (NMT 1998). The injecting syringes that were not used immediately were kept on ice or in a commercial freezer to prevent premature curing of the Elastomer material.

The initial VIE tag was injected into the lower right jaw, just above the sinus cavity which leads up to the operculum. As the Elastomer began to cure and started to set in the injection syringes, the needles were replaced. The Elastomer syringes were replaced every 5 to 90 minutes

The time period from mixing the Elastomer material with the curing agent until the point of set up is temperature dependent. If put on ice or frozen it will stay workable for up to 24 hours. At room temperature it will begin to set up in 30 to 60 minutes.

The fish were VIE tagged at a size of approximately 60 fish per pound or an average of 9 centimeters in fork length. During this initial VIE tagging session, if an injected VIE tag was not administered well enough to be easily visible, the fish was tagged a second time, in the same location as the first tag.

In November of 1998, 1999 and 2000, approximately four months after the initial VIE tagging, the fish were coded wire tagged, and at the same time examined for the presence or absence of the original VIE tag. If the VIE tag was not visible with the naked eye, the fish were re-tagged with a secondary VIE tag of an alternate color to the left lower jaw.

Some of the fish receiving a secondary VIE tag were exposed to ultra violet (UV) light at which time remnant original VIE tags were detected. Therefore, the total number of applied secondary VIE tags does not reflect initial VIE tag loss accurately. In order to minimize secondary VIE tag loss we replaced the Elastomer syringes in the injectors more frequently than was done during the original VIE tagging.

During fish processing and spawning of adult and precocious males, the fish are visually inspected for a VIE mark. If no detection occurred, a black light was used to illuminate any remnant VIE mark. All fish were then passed through an R8000 series tunnel detector to sample for the presence of a CWT. Snouts containing a CWT were sent to the central CWT processing laboratory in Clackamas Oregon for decoding.

RESULTS

Approximately 70,000 fish were tagged each year in July (Table 1). Average fork length of fish during initial VIE tagging was 9 cm. Average tagging rates ranged from less than 300 (during 1998) to nearly 2,400 (during 2000) fish per employee per 7.5 hour work day. Average fork length of fish during the secondary VIE tagging was 13 cm. Over the 3 year an average of 19 percent of the fish receiving an initial VIE tag needed a secondary VIE tag. Ranging from 16 percent for the 1998 brood to 22 percent for the 1997 brood. Some of the fish receiving a secondary VIE tag were exposed to ultra violet (UV) light at which time remnant initial VIE tags were detected. Therefore, the percentages of applied secondary VIE tags do not reflect initial VIE tag loss rates accurately.

Pre-release tag retention checks of approximately 500 fish each were conducted in February of 1999, 2000 and 2001. Overall VIE tag retention was good ranging from 95 percent for the 1999 brood to 99 percent for the 1998 brood (Table 1). Adults and precocious males were collected at the hatchery during the 1999 to 2002 adult return years, usually from September through the end of December each year. Retention of VIE tags was generally very poor, but was better for precocious males (average of 38 percent) than for adult fish recoveries (average of 0.06 percent).

Table 1: VIE tagging and tag recovery rates at Sandy Fish Hatchery.

		Brood Year			Average
		1997	1998	1999	
Initial VIE	No. Fish	66,170	78,181	73,314	72,555
	Length cm FL	9.3	8.8	8.8	9.0
	Color/Loc.	Red/Right	Red/Right	Green/Right	
Secondary VIE	No. Fish	64,207	74,771	70,870	69,949
	CWT	07-13/16	09-27/47	09-27/48	
	Length cm FL	12.6	13.9	12.6	13.0
	Color/Loc.	Green/Left	Green/Left	Red/Left	
	%Re-mark	22%	16%	20%	19%
Retention	No. Fish	532	500	500	511
	Ini. VIE %	78	84	75	79
	Sec. VIE %	20	16	20	18
	Overall %	98	99	95	97
Recoveries					
Precocious Males	With CWT	17	36	14	22
	With VIE	12	13	1	9
	% with VIE	70.6	36.1	7.1	38.0
Adults	With CWT	606	1,146	471	741
	With VIE	1	0	0	0
	% with VIE	0.17	0.00	0.00	0.06

CONCLUSION AND DISCUSSION

While marking rates improved over time with experienced employees, pre-release tag retention varies widely for the three releases. Tag retention in returning fish is better for precocious males than for adults. The poor detection rates of VIE jaw tags in returning adult coho at Sandy Hatchery indicate that this is an unsuitable method for sorting mixed stocks or distinguishing between hatchery reared and wild coho salmon. It could be a useful tool in identifying down stream juveniles or out migrants.

REFERENCES

- Pacific Salmon Commission (PSC). 1995. Ad-Hoc Selective Fishery Evaluation Committee. Selective Fishery Evaluation.
- Northwest Marine Technology (NMT). 1998. Northwest Marine Technology Instruction Manual for Elastomer Tag Air Driven Injector System.