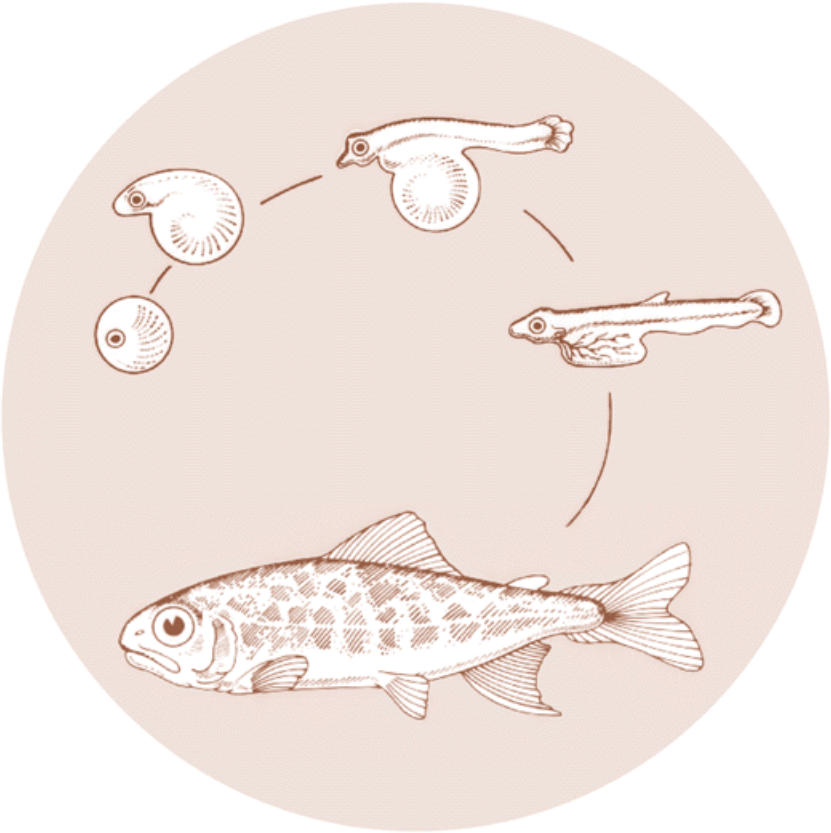
April 1994

ANNUAL CODED WIRE TAG PROGRAM
OREGON MISSING PRODUCTION GROUPS

Annual Report 1993



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OREGON
MISSING PRODUCTION GROUPS

ANNUAL REPORT 1993

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TABLE OF CONTENTS

	Page
Abstract	1
Introduction	2
Methods and Materials	3
Results	3
Discussion	5
Big Creek Hatchery	9
Klaskanine Hatchery	9
Clatsop Economic Development Commission (CEDC)	9
Gnat Creek Hatchery	17
Eagle Creek National Fish Hatchery	17
Claokamas Hatchery	17
Marion Forks Hatchery	25
South Santiam Hatchery	33
Stayton Rearing Pond	33
Roaring River Hatchery	33
McKenzie Hatchery	37
Willamette Hatchery	37
Sandy Hatchery	37
Cascade Hatchery	41
Bonneville Hatchery	41
Oxbow Hatchery	48
Wahkeena Pond	48
Round Butte Hatchery	48
Oak Springs Hatchery	54
Wizard Falls Hatchery	54
Fall River Hatchery	54
Irrigon Hatchery	54
Umatilla Hatchery	59
Lookingglass Hatchery	59
Wallowa Hatchery	66
Appendix	66

ABSTRACT

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's Annual Coded Wire Tag Program - Oregon Missing Production Groups Project.

Tule brood fall chinook were caught primarily in the British Columbia, Washington and northern Oregon ocean commercial fisheries. The up-river bright fall chinook contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery. Contribution of Rogue fall chinook released in the lower Columbia River system occurred primarily in the Oregon ocean commercial and river gillnet fisheries

Willamette spring chinook salmon contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries. The up-river stocks of spring chinook contributed primarily to the Columbia River sport and in-river gillnet fisheries.

The up-river stocks of Columbia River summer steelhead contributed primarily to the Columbia River gillnet and in-river freshwater sport fisheries.

The Columbia River early stock coho contributed well to the Oregon ocean sport and commercial fisheries. The 1985 to 1988 brood years of coho released in the Umatilla River survived at an average rate of 2.4% and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery. The 1986 to 1988 brood years of coho released in the Yakima River survived at an average rate of 1.5% and contributed primarily to the Washington, Oregon and, 'California ocean sport and commercial fisheries and the Columbia River gillnet fishery.

Survival rates of salmon and steelhead are influenced, not only by factors in the hatchery, 'disease, density, diet and size and time of release, but also by environmental factors in the river and ocean. These environmental factors are controlled by large scale weather patterns such as El Nino over which man has no influence. Changes in rearing conditions in the hatchery over which man has some limited influence do impact the survival rates, but these impacts are insignificant in comparison to the impacts caused by the weather, river and ocean environmental factors over which man has little or no influence. Man could have some influence over river flow conditions, but political and economic pressures generally out weigh the biological needs of the fish.

Brood years of salmon and steelhead that were in the ocean during the 1983 El Nino event exhibited poor survival all along the Pacific coast of California, Oregon and Washington. However, stocks of chinook and coho that entered the ocean in the fall of 1984 following the El Nino experienced remarkably improved, survival rates. In some instance, tule fall chinook experienced survival rates almost ten time higher than for the prevoius brood years of the same stock. Coho salmon released in the Columbia River in "normal" years generally experienced better survival rates when release later in the spring. However, during years of El Nina, ocean conditions, coho released late survived very poorly and coho released earlier in the spring survived better.

INTRODUCTION

The Columbia Basin Fish and Wildlife Program Section 203 (a) proposes an interim goal of doubling runs of salmon and steelhead in the Columbia Basin. Doubling means increasing the current run size of 2.5 million to 5 million adult fish. As part of this effort Section 2'06 (c) states an objective of exploring methods for subetantially increasing and improving hatchery production at existing hatcheries. Section 206 (e)(l) states Bonneville shall fund collection of Columbia Basin hatchery data for anadromous fish. These data will include at a minimum: number of returning adults; disposition of returning adults; source and description of brood stock; actions to maintain genetic diversity; and size, location and time of release of juvenile fish.

A system of monitoring and evaluation is necessary to measure present and future levels of fish production by various hatchery and natural fish production components if we are going to 'be able to evaluate the success of this program in attaining the goal of doubling the size of fish runs.

In September 1989 the Oregon Department of Fish and, Wildlife received a grant from the Bonneville Power Administration to begin a project of annually coded-wire tagging missing production. groups of anadromous salmonids. ‘Some groups of "production fish were already being tagged by other programs,, so this contract consisted of filling in the missing production groups for the future data base., This project began in 1998 coded-wire tagging groups of juvenile anadromous salmon produced at Oregon hatcheries.

Tagging will enable evaluation of survival and contribution rates. As the fish mature and are captured in varoius 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. Release and recovery information is stored along with sampling and mark/unmarked release, ratios. This information is then used to estimate survival rates for each production lot of fish reared and released at that hatchery. The number and,

rate that each hatchery production group of fish contribute to the various fisheries is then estimated by recovery area and brood year. -This information is then used to evaluate effectiveness of each hatchery and varous rearing and release practices conducted by the hatcheries. 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 will also be valuable to salmon harvest managers in developing scenarios that wil'l'allow harvest of excess hatchery fish while protecting threatened and endangered natural stocks.

Methods and Materials

The goal of this program is to develop the ability to estimate hatchery production survival values and evaluate effectiveness of Oregon hatcheries. To accomplish this goal, work has progressed under three objeatives.

Objective 1. Implement the project by tagging missing production groups within hatcheries to assure each production group is identifiable to allow future evaluation upon recovery of tag data.

Objective 2. Recover coded-wire tags from snouts of fish tagged under Objective 1.

Objective Prepare an annual report for all Oregon fish hatcheries in the Columbia Basin in a Propagation Evaluation Format. The annual report will include a Propagation Evlauation Summary format for each tag code released by an ODFW hatchery in' the Columbia Basin. The hatchery summary will include estimates of survival and contribution for each hatchery represented by a coded-wire tag release group. The information will be obtained from the latest information available on the Pacific States Marine Fish Commission's computer data base at the time of report preparation.

RESULTS

Objective 1. We completed coded-wire tagging and ad-clipping a total of about 0.8 million juvenile 1991 and 1992 brood spring and fall chinook and coho salmon (Table 1). The total represents 25 different tag groups. Estimated total operational costs (without administrative overhead averaged $76 and ranged between $68 and $87 per thousand fish tagged.

Table 1. Fish Tagged and Respective Estimated Operational Costs. (Sept. 1, 1992 to August 31, 1993)

Act #	Period	Location	Brood	Sp.	CWT'd	Grps	$/K	Tot. $
6	Sep, 92	McKenzie	91	CHS	32,905	1	$79	2,612
9	Oct, 92	Cascade	91	Co	171,612	6	$68	11,602
8	Oct, 92	Sandy	91	Co	109,831	4	$68	7,414
10	Oct, 92	Eagle Cr.	91	Co	51.680	2	$77	3,984
2	Mar,May,93	Bonneville	92	CHF	108,769	3	$87	9,481
3	Mar,Apr,93	Stayton-Bonn	92	CHF	57,954	1	$82	4,699
1	Apr,May,93	Big Cr..	92	CHF	107,216	4	$80	8,558
4	May,93	Clack @ Ox.	92	CHS	104,607	2	$75	7,852
7	June,93	S. Sant @ Oak	92	CHS	54,157	2	$87	4,718
10	Sch'd Oct 93	Eagle Cr.	92	Co				
11	Deleted	Hood R@ Bonn	92	CHS				
5	Deleted	Oakridge	92	CHS				
6	Deleted	McKenzie	92	CHS				
	TOTALS				798,731	25	$76	60,920

Objective 2. We completed processing a total of 22,462 tags at the laboratory in Clackamas. The total consisted of fish from sport, commercial, ceremonial, hatchery, spawning ground surveys, and miscellaneous other fisheries (Table 2). We verified 1,338 ODFW tags recovered and returned to us by other agencies.

Table 2. CWT's Recovered at Clackamas. (Sept. 1, 1992 to August 31, 1993)

FISHERY	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
River Sport	26	71	1	1	193	2	16	218	311	11	22	21	893
Test Fish	57	0	0	0	0	0	0	68	20	0	0	0	145
Estuary Spt	132	4	0	0	0	0	0	0	0	0	0	0	136
Treaty Gillnet	1,633	601	0	0	0	0	34	0	0	0	0	71	2,339
Non-Tr Gillnet	50	590	0	0	0	10	17	0	0	0	0	0	667
Youngs Bay Gillnet	260	88	0	0	0	0	0	57	89	0	0	0	494
Ocean Sport/Troll	1,779	0	320	0	0	0	0	0	0	0	355	527	2,981
Hatchery	97	1,975	2,767	3,730	1,779	1,466	572	0	0	555	461	0	13,402
Spawning Ground	0	99	12	24	231	15	0	0	0	0	0	0	381
Willamette Migration	0	0	0	0	0	0	0	0	570	0	0	0	570
River Seine	0	0	3	0	0	0	0	0	0	0	0	0	3
Whiting	0	0	12	0	0	0	0	0	0	0	9	0	21
Buoy 10	0	0	0	0	0	0	0	0	0	0	0	38	38
Ceremonial/Subistence	0	44	0	0	0	0	0	0	115	48	16	169	392
TOTAL	4,034	3,472	3,115	3,755	2,203	1,493	639	343	1,105	614	863	826	22,462
Verifications	0	0	0	257	7	0	264	255	0	538	0	17	1,338

Objective 3. We prepared summaries of available coded-wire tag recovery information for all groups of tagged fish released from Oregon Department of Fish and Wildlife hatcheries in the Columbia basin and supplied them in the Propagation Evaluation Format to the Bonneville Power Administration Program Wanager. Summaries of the coded-wire tag recovery and survival information are presented in Appendix Table 1. Charts depicting the latest five year average distribution of catch and estimated survival rates for each stock and hatchery are presented in Figures 1 - 52.

Discussion

The average percent recovery (by fishery) for the last 5 completed brood years (chinook 1983 to 1987 broods; coho 1985 to 1989 broods; steelhead 1684 to 1988 broods) are presented in Appendix Table 1.

Big Creek Hatchery

Big Creek Hatchery is located 2 miles south of Knappa off Highway 30 near the mouth of the Colubmia River. The hatchery was originally built in 1939-41 and was operated by the Oregon Fish commission. Big Creek Hatchery rears and releases tule and Rogue fall chinook, coho, chum salmon, winter steelhead and cutthroat trout.

Tule 1986 to 1987 brood fall chinook survived at a rate of 0.12% They were caught primarily in the British Columbia, Washington and northern, Oregon ocean commercial and Oregon freshwater fisheries (Figure 1).

Rogue fall chinook were originally released at Big Creek as an experiment with the 1982 brood. Good survival and contribution rates to Oregon have caused this program to be expanded to a pilot production level. Rogue fall chinook from the 1983 to 1987 broods averaged survival at a rate of 2.51 %. The largest contribution occurred in the Oregon ocean commercial and river freshwater and gillnet fisheries (Figure 2).

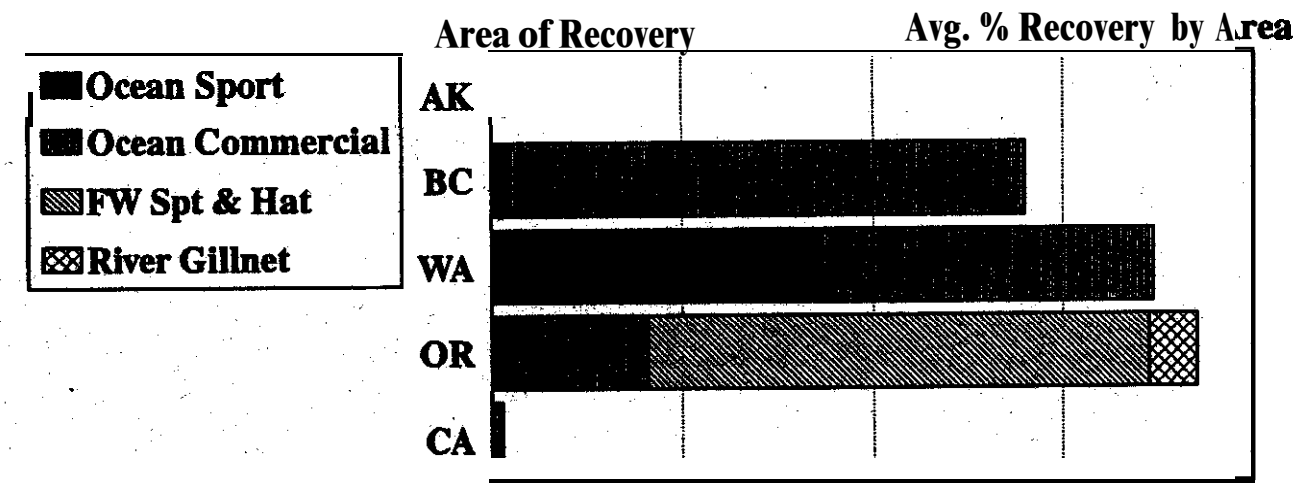
The 1985 to 1989 brood Big Creek coho survived at an'average rate of 4.04 %. They contributed well to the Oregon ocean sport,. and commercial fisheries (Figure 3).

Only small experimental groups of chum salmon are reared at Big Creek and none of these fish have been coded-wire tagged for evaluation.

Winter steelhead and cutthroat trout are reared at Big Creek but none have been marked with coded-wire tags for evaluation.

Big Creek Tule Fall Chinook Released in Big Creek

1986 & 1987 Brood Year



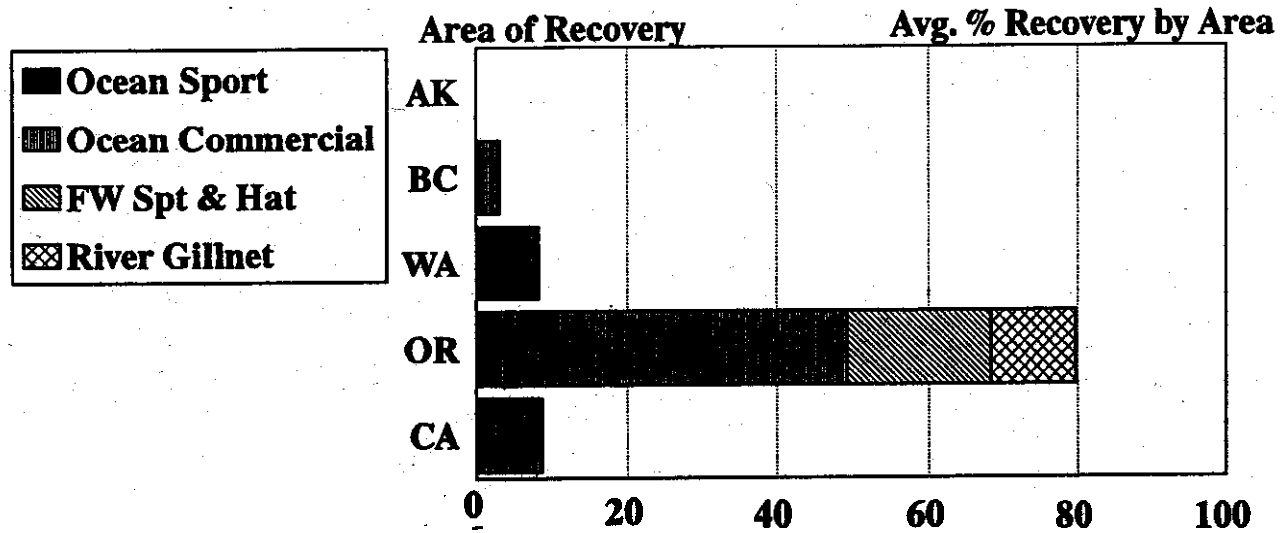
	AK	BC	WA	OR	CA
Ocean Sport		0.9	17.2	1.2	0
Ocean Commercial		27.1	17.5	7	0.6
FW Spt & Hat				26.3	
River Gillnet				2.5	

Avg. 0.12 % Survival

Figure 1.

Rogue Fall Chinook
Released in Big Creek

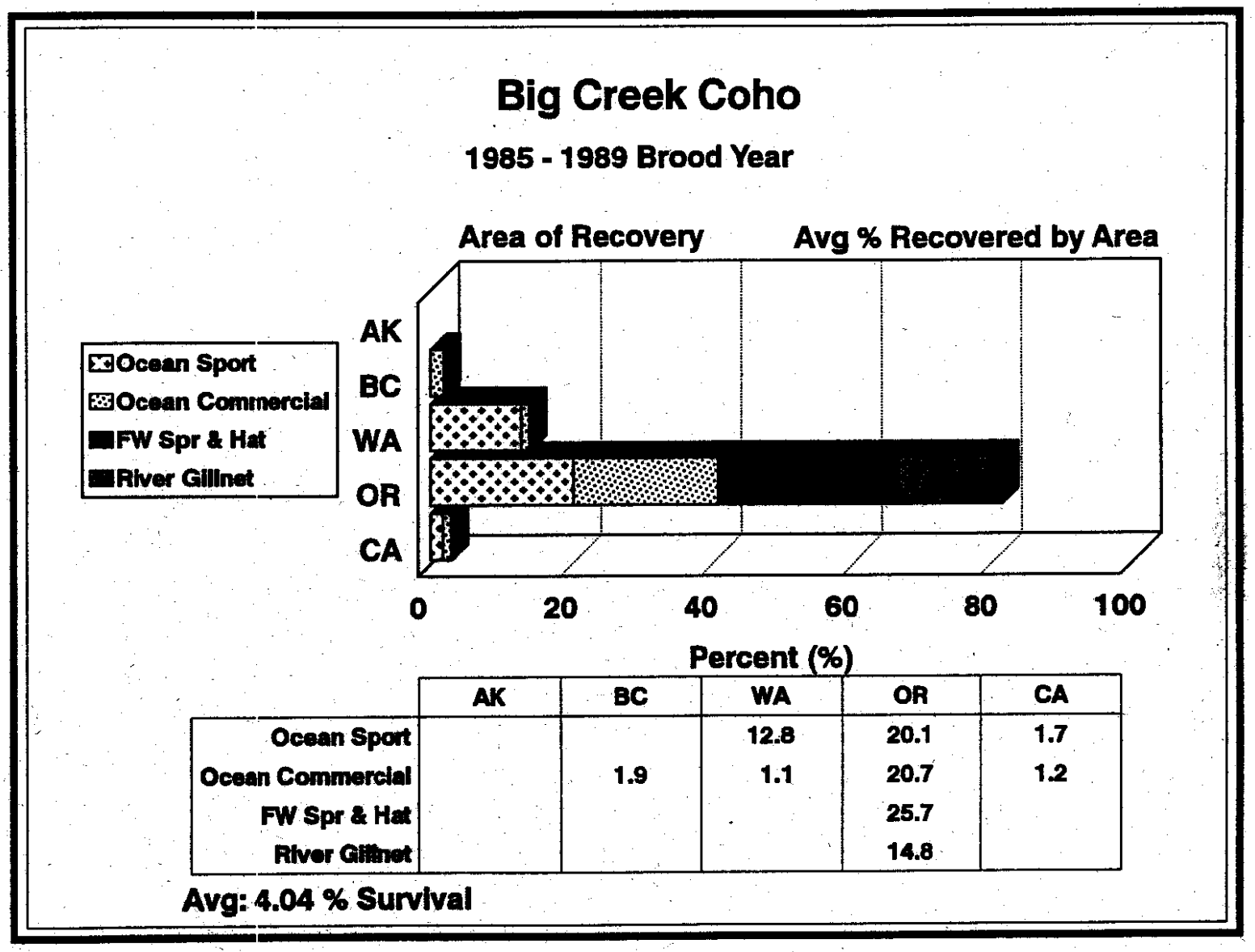
1983 - 1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport		0.2	6.3	3.3	0.7
Ocean Commercial		3	2	46	8
FW Spt & Hat				19.1	
River Gillnet				11.4	

Avg. 2.51 % Survival

Figuie 2.



	AK	BC	WA	OR	CA
Ocean Sport			12.8	20.1	1.7
Ocean Commercial		1.9	1.1	20.7	1.2
FW Spr & Hat				25.7	
River Gillnet				14.8	

Avg: 4.04 % Survival

Figure 3.

Klaskanine Hatahery

Klaskanine Hatchery is located 21 miles southeast of Astoria on Highway 202 on the Klaskanine River. The-hatchery originally built in 1913 was expanded and remodeled in 1953. Klaskanine Hatchery presently raises tule fall chinook', coho salmon and winter steelhead trout.

The 1986 to 1987 brood of tule fall chinook released from Klaskanine Hatchery survived at a rate of 0.08 %. They contributed primarily to the British Columbia, Washington, and Oregon ocean commercial and the Columbia River and Youngs Bay gillnet fisheries (Figure 4).

The 1985 to 1989 brood Klaskanine coho produced an average survival at a rate of 4.37 %> They contributed primarily to the Oregon ocean sport, commerical and the Columbia River and Youngs Bay gillnet fisheries (Figure 5).

The 1985 brood Tanner Creek coho stock released in the Klaskanine river had an average survival rate of 5.47% (Figure 6).

Winter steelhead are reared at Klaskanine Hatchery but none have been marked with coded-wire tags for evaluation.

Clatsup Economic Development Commission (CEDC)

CEDC operates a series of freshwater. ponds and saltwater net pens in Young Bay near Astoria. CEDC releases coho and chinook salmon.

The 1983 to 1987. brood tule fall chinook released in the South Pork Klaskanine River averaged a survival rate of 0.39 %. They were caught primarily in the British Columbia ocean commercial and the lower Columbia River and Youngs Bay gillnet fisheries (Figure 7),.

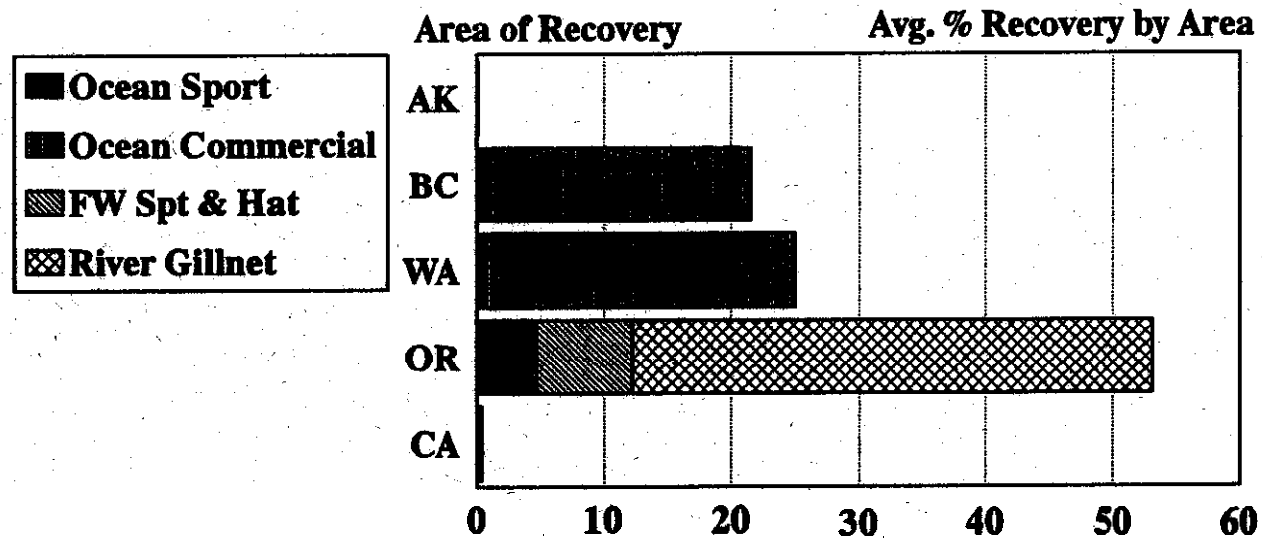
The 1984 to 1987 brood Rogue fall chinook reared by CEDC in net pens and released in the Klaskanine River averaged a survival rate of 2.88 %. They were caught primarily in the Oregon commercial troll and Youngs Bay gillnet fisheries (Figure 8).

The 1986 Big Creek coho stock reared by CEDC and released in Tucker Creek survived at a rate of 3.12 %. They were harvested primarily in the Oregon ocean commercial and sport fisheries and the lower Columbia and Youngs Bay gillnet fisheries (Figure, 9).

The 1987 brood Tanner Creek coho stock acclimated in the CEDC freshwater ponds survived at an average rate of 6.99 % (Figure 10).

Klaskanine Hat. (Big Creek Stk) Tule Fall Chinook Released in Klaskanine R

1986 - 1987 Brood Year



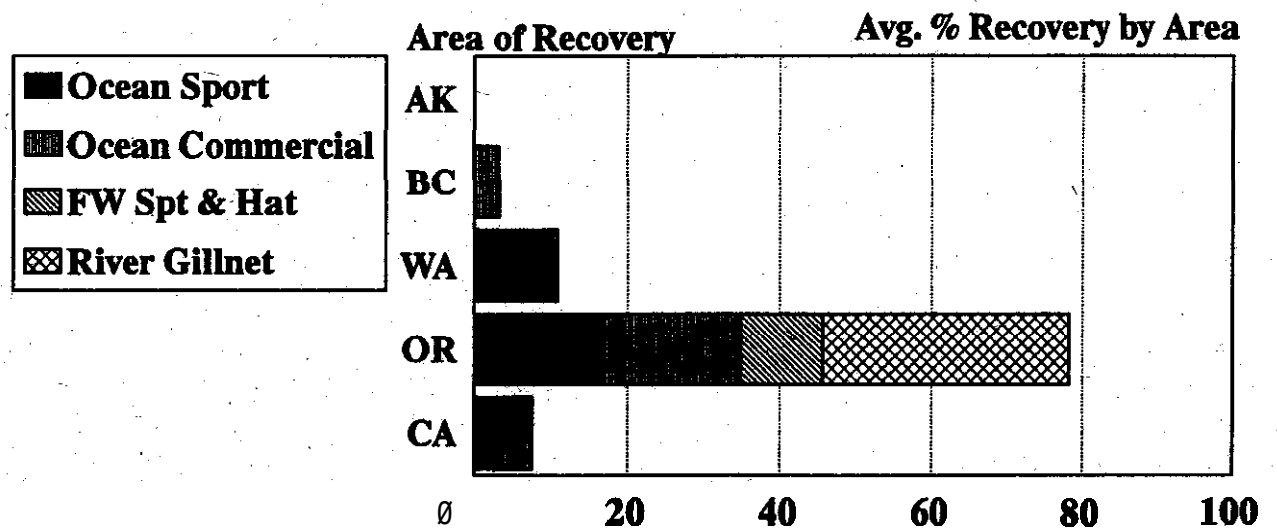
	AK	BC	WA	OR	CA
Ocean Sport		1.1	0.8	0.1	0.2
Ocean Commercial	0.1	20.4	24.2	4.6	0.2
FW Spt & Hat				7.5	
River Gillnet				40.9	

Avg. 0.08 % Survival

Figure 4.

Klaskanine Coho
Released in Klaskanine R

1985 - 1989 Brood Year



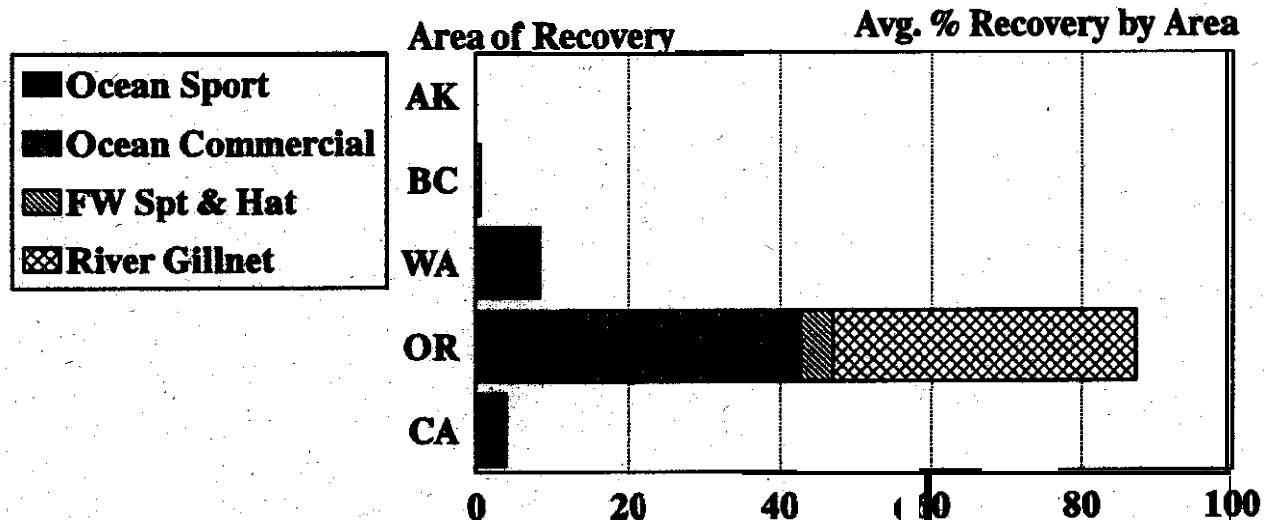
	AK	BC	WA	OR	CA
Ocean Sport	0	0.2	9.9	17.2	3.8
Ocean Commercial	0	3	0.9	17.7	3.8
FW Spt & Hat				10.7	
River Gillnet				32.7	

Avg. 4.37 % Survival

Figure 5.

Klaskanine (Tanner Creek Stock)Coho Released in Klaskanine R

1985 Brood Year



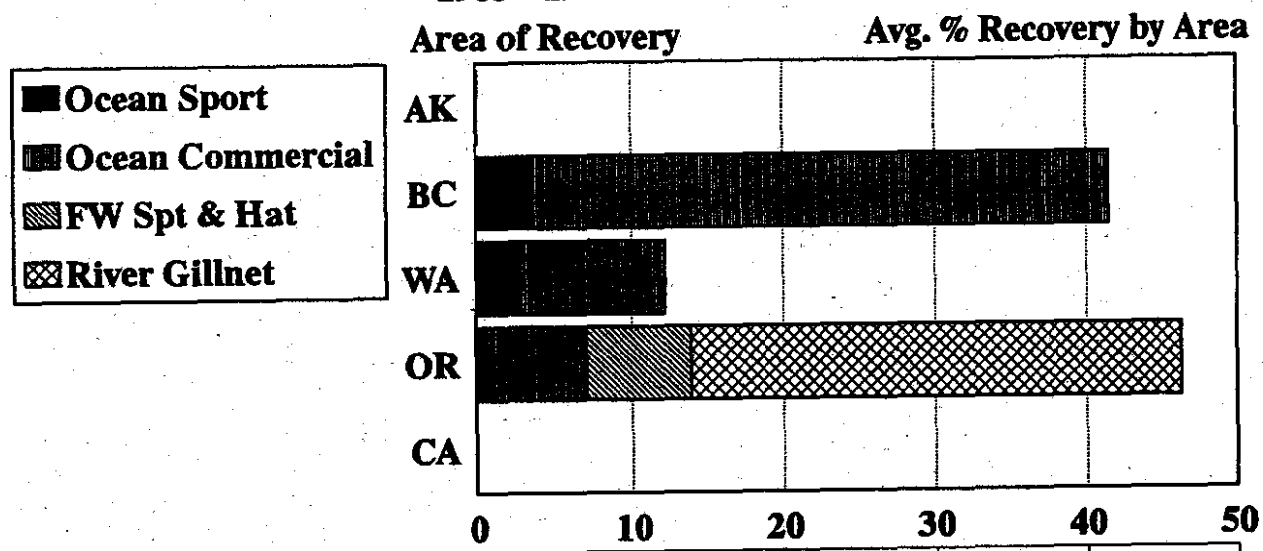
	AK	BC	WA	OR	CA
Ocean Sport	0	0	8.3	11.6	1.8
Ocean Commercial	0	0.6	0	31.1	2.1
FW Spt & Hat				4.2	
River Gillnet				40.3	

Avg. 5.47 % Survival

Figure 6 .

S.F. Klaskanine Pond Tule Fall Chinook Released in S. F. Klaskanine R.

1983 - 1987 Brood Year



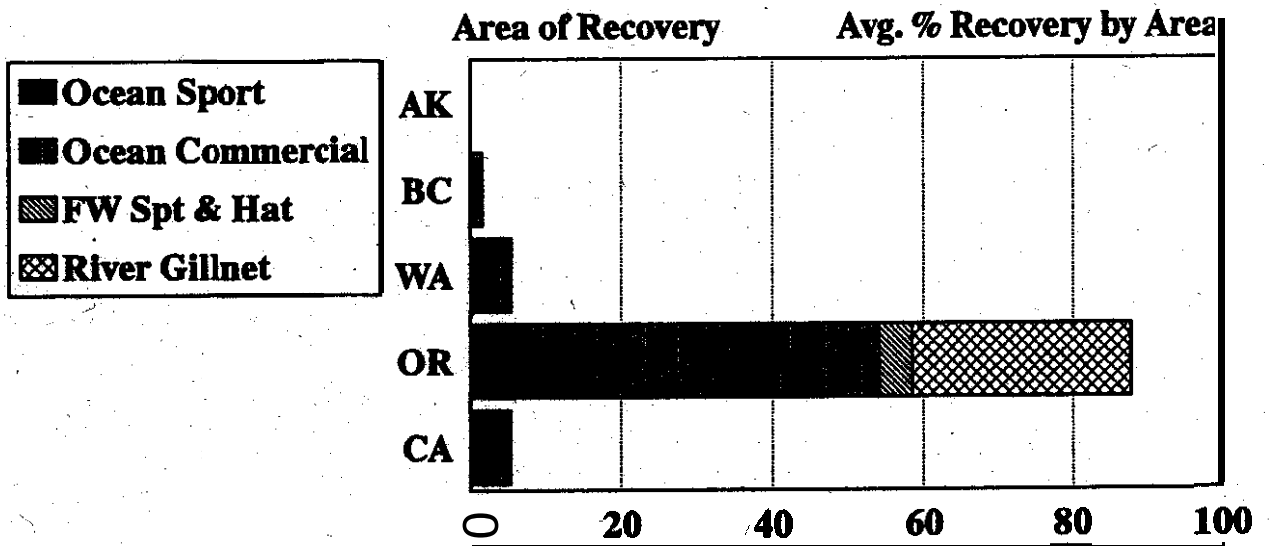
	AK	BC	WA	OR	CA
Ocean Sport		3.7	2.9	0.1	0
Ocean Commercial	0.1	37.8	9.3	6.9	0
FW Spt & Hat				6.9	
River Gillnet				32.4	

Avg. 0.39 % Survival

Figure 7.

Rogue Fall Chinook (SF Klaskanine Hat) Released in Klaskanine R

1984 - 1987 Brood Year



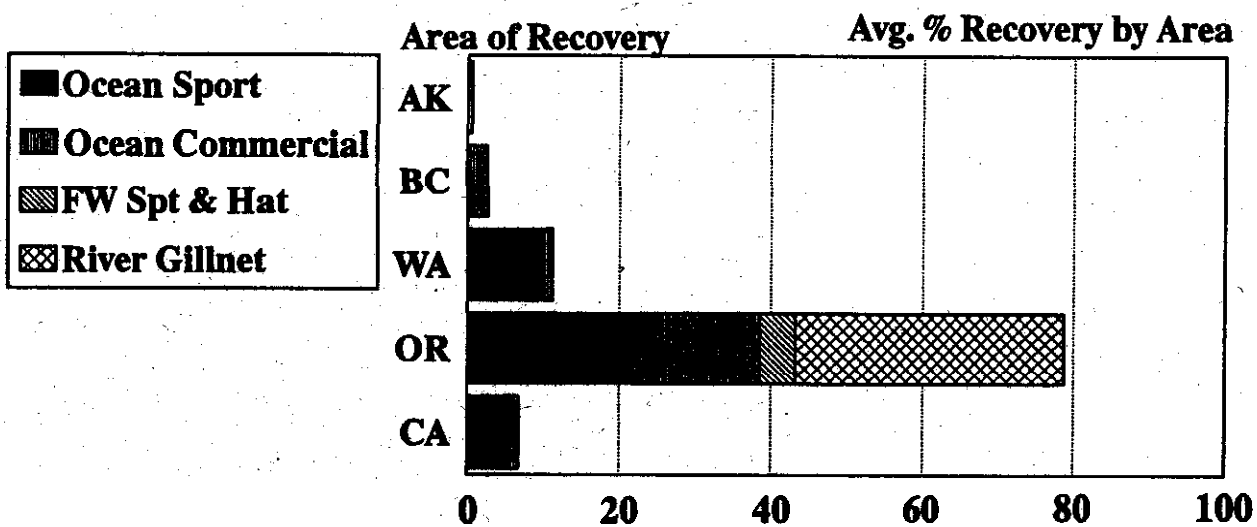
	AK	BC	WA	OR	CA
Ocean Sport			3.7	2.3	0.8
Ocean Commercial		1.6	1.7	51.8	4.5
FW Spt & Hat				4.5	
River Gillnet				29.2	

Avg. 2.88 % Survival

Figure 8.

SF Klaskanine Pond (Big Creek Stock)Coho Released in Tucker Creek

1986 Brood Year



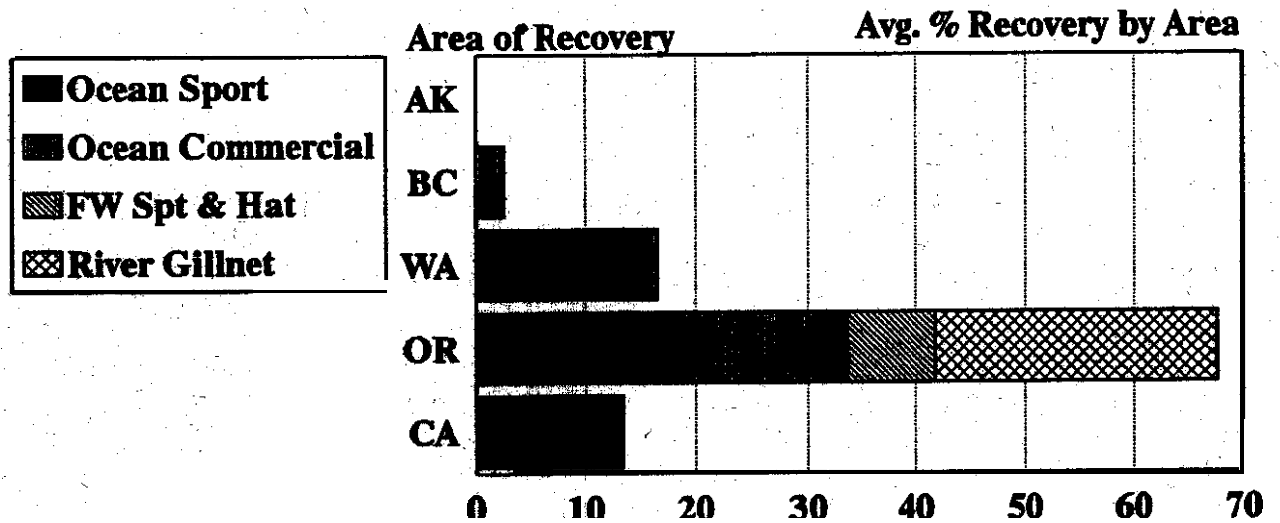
	AK	BC	WA	OR	CA
Ocean Sport	0	0	10.1	21.5	4.5
Ocean Commercial	0.6	2.7	1.1	17	2.2
FW Spt & Hat				4.7	
River Gillnet				35.6	

Avg. 3.12 % Survival

Figure 9.

SF Klaskanine Pond (Tanner Creek Stock) Coho Released in Klaskanine River, S. Fork

1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0	15.2	17	5.1
Ocean Commercial	0	2.5	1.3	16.6	8.3
FW Spt & Hat				8.2	
River Gillnet				25.8	

Avg. 6.99 % Survival

Figure 10.

The 1987 brood Sandy coho stock acclimated in the CEDC freshwater ponds and released in Youngs River survived at an average rate of 2.89 % (Figure 11).

The 1988 brood Klaskanine coho stock acclimated in the CEDC salt water net pens and released in the South Fork Klaskanine River (Youngs Bay) survived at a rate of 5.37 % (Figure 12).

The 1989 brood Sandy coho stock acclimated in the Youngs Bay saltwater-net pens, and released in the South Fork Klaskanine River survived at a rate of 0.53 % (Figure 13).

Gnat Creek Hatahery

Gnat Creek Hatchery is ibcated east of Knappa off Highway 30 on Gnat Creek a tributary to the Lower Columbia River. Gnat Creek Hatchery releases summer and winter steelhead and cutthroat trout. None of these groups of fish have been coded-wire tagged for evaluation.

Eagle Creek National Fish Hatchery

Eagle Creek National Fish Hatchery is located on Eagle Creek a tributaty of the Clackamas River southeast of Portland. Eagle Creek Hatchery presently rears and releases coho salmon in Eagle Creek. Additional coho are reared for ODFW and are transported 'to net pens for acclimation in Young Bay near Astoria. The saltwater net pens are operated by the Clasp Economic Development Commission (CEDE).

The 1987 brood Eagle Creek (Sandy stock) coho released in the Klaskanine River survived at a rate of 1.56 % (Figure 14).

The 1988 brood Eagle Creek (Sandy stock) coho released in the Eagle Creek survived at a rate of 5.48-.% (Figure 15).

The 1988 to 1989 brood Eagle Creek coho released in the Clackamas River survived at a rate of 1.69 %(Figure16

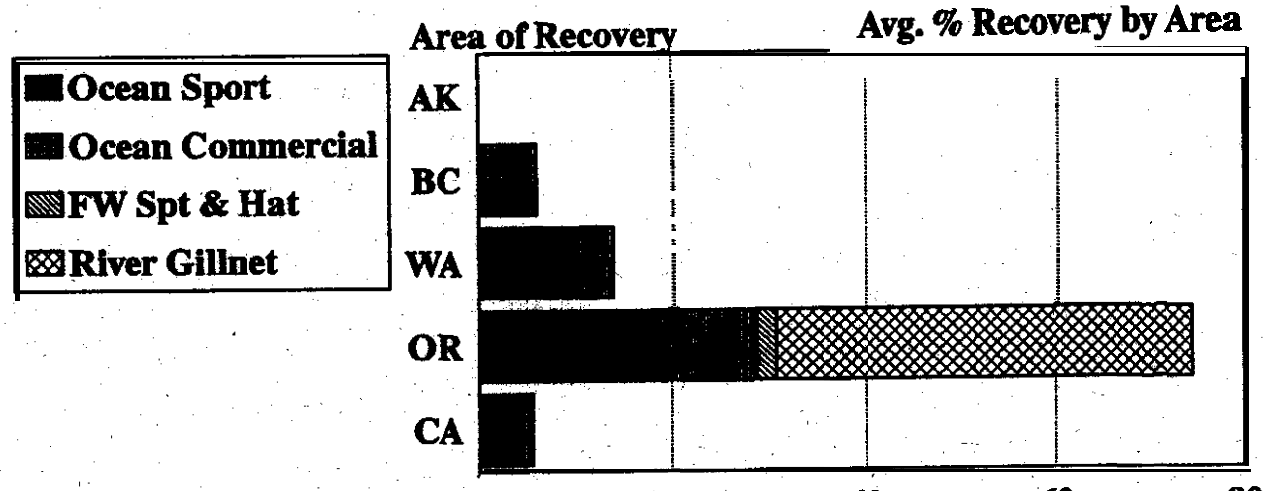
The 1988 to 1989, brood Eagle Creek (Clackamas stock) coho released in the Youngs River survived at a rate of 4.69 % (Figure 17

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 trout.

SF Klaskanine Pond (Sandy R. Stock) Coho Released in Youngs River

1987 Brood Year



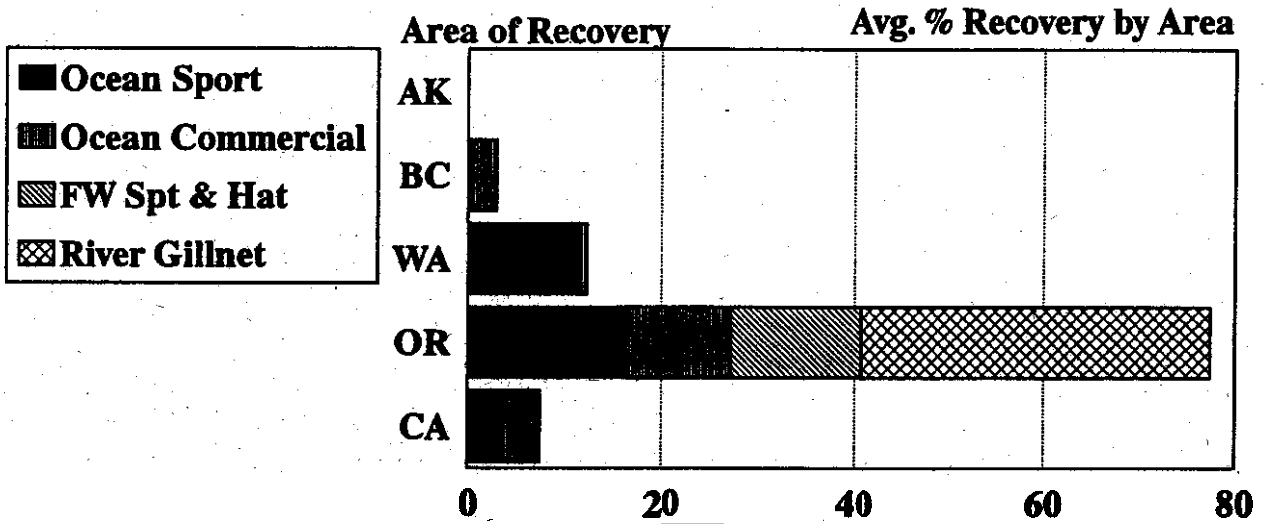
	AK	BC	WA	OR	CA
Ocean Sport	0	0.5	10.4	18.5	4.6
Ocean Commercial	0	5.5	3.5	10.5	0.9
FW Spt & Hat				1.9	
River Gillnet				43.7	

Avg. 2.98 % Survival

Figure 11.

SF Klaskanine Pond Coho
Released in Klaskanine R , S. Fork

1988 Brood Year



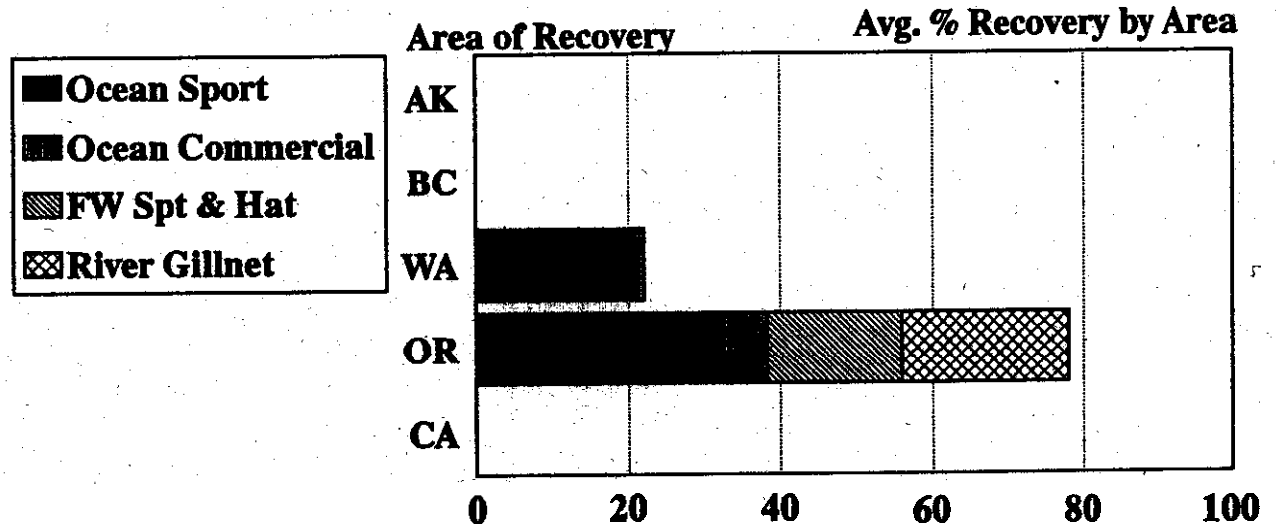
	AK	BC	WA	OR	CA
Oc ean Sport	0	0.6	11.7	16.4	
eanc ommercial	0	2.3	0.6	10.9	3.8
Oc FW Spt & Hat				13.4	
River Gillnet				36.7	3.7

Avg. 5.73 % Survival

Figure 12.

SF Klaskanine Pond (Sandy R. Stock) Coho Released in Klaskanine River, S. Fork

1989 Brood Year



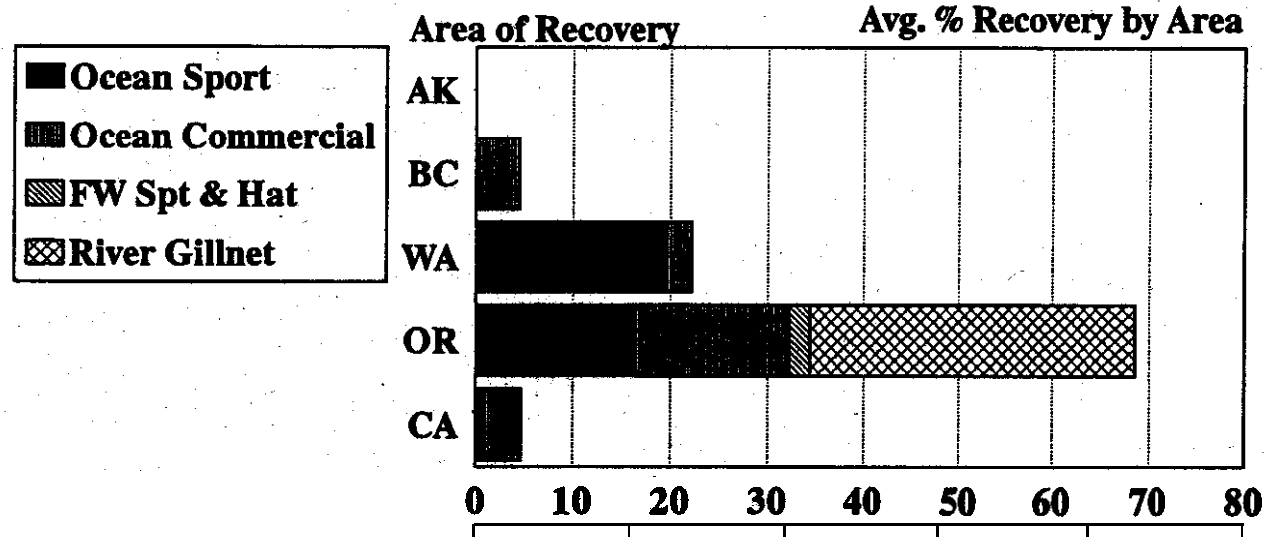
	AK	BC	WA	OR	CA
Ocean Sport	0	0	20.6	32.6	0
Ocean Commercial	0	0	1.4	5.7	0
FW Spt & Hat				17.7	
River Gillnet				22	

Avg. 0.53 % Survival

Figure 13.

Eagle Creek (Sandy R. Stock) Coho Released in Klaskanine R

1987 Brood Year



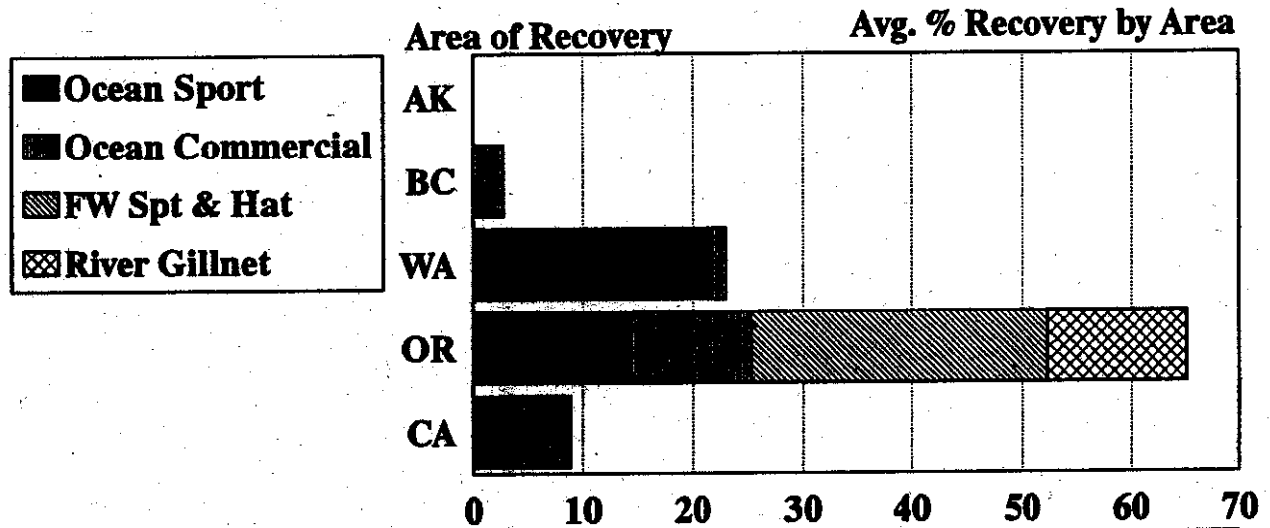
	AK	BC	WA	OR	CA
Ocean Sport	0	0	19.7	16.5	1
Ocean Commercial	0	4.5	2.5	15.7	3.7
FW Spt & Hat				2.2	
River Gillnet				34.2	

Avg. 1.56 % Survival

Figure 14.

Eagle Creek NFH (Sandy Stock) Coho Released in Eagle Creek

1988 Brood Year



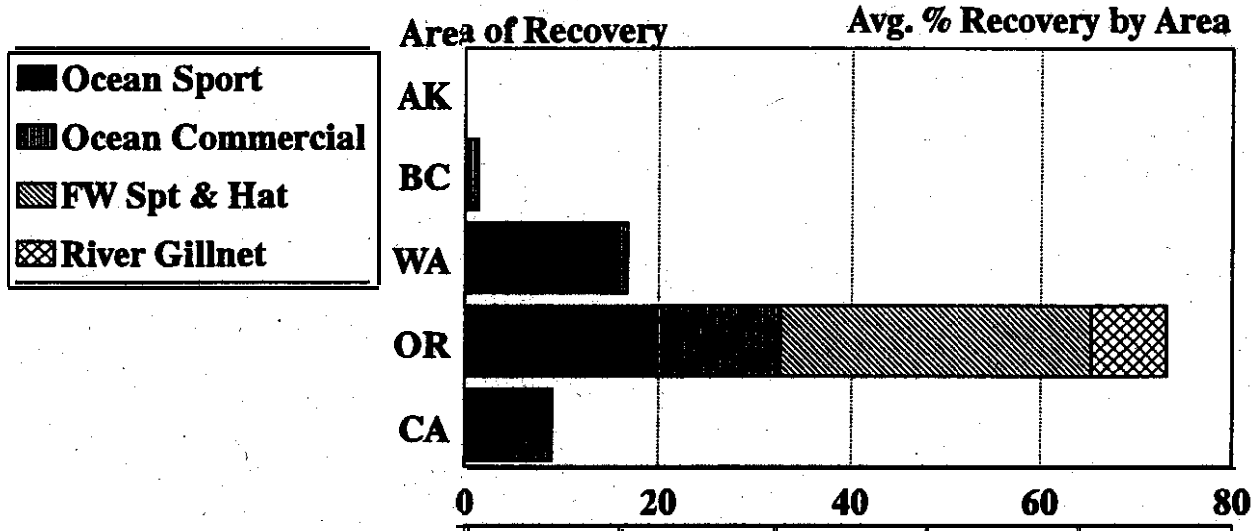
	AK	BC	WA	OR	CA
Ocean Sport	0	0	21.6	14.4	4.5
Ocean Commercial	0	2.8	1.5	10.9	4.4
FW Spt & Hat				27.1	
River Gillnet				12.8	

Avg. 5.48 % Survival

Figure 15.

Eagle Creek NFH Coho Released in Clackamas R.

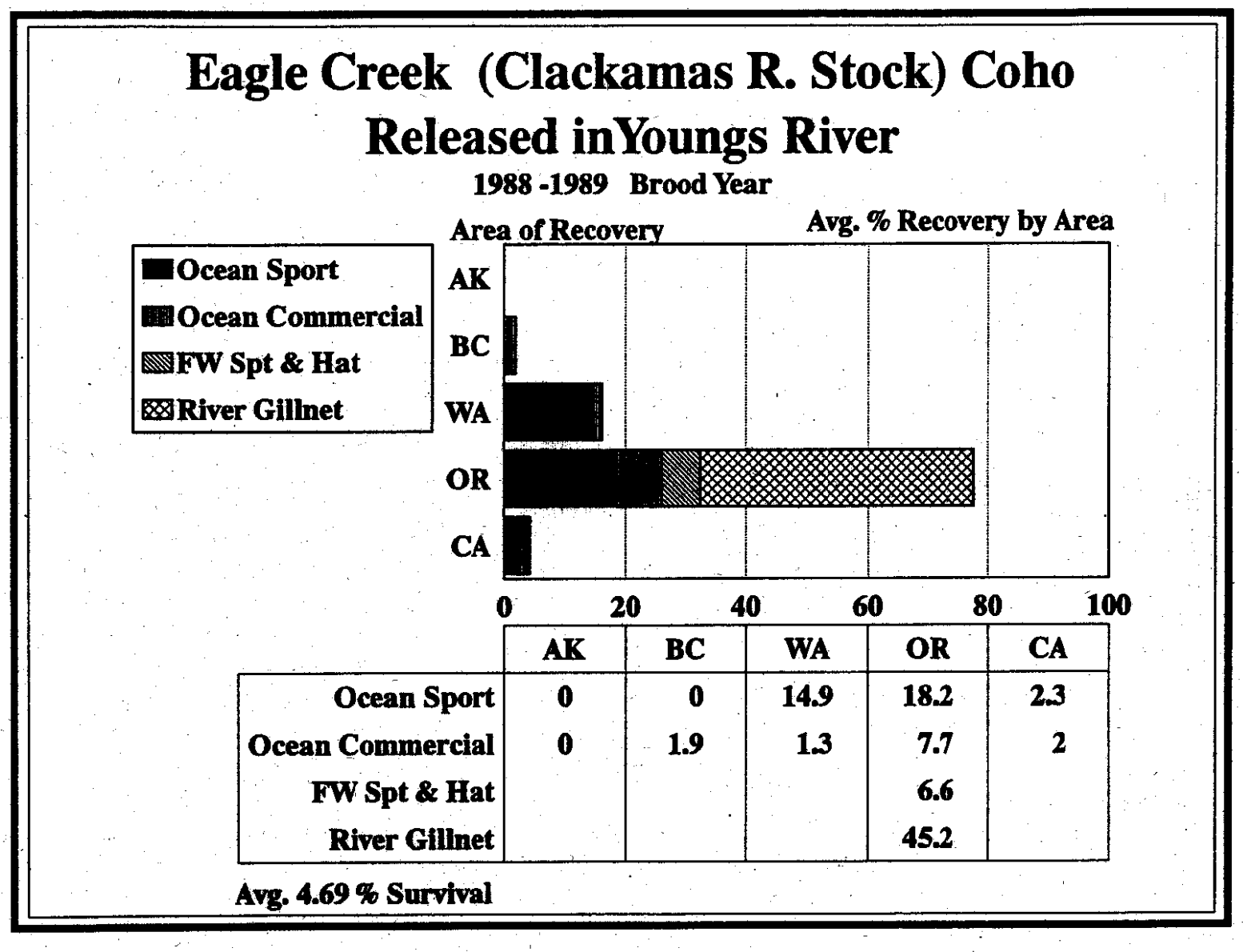
1988 - 1989 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0.3	15.6	19.9	4
Ocean Commercial	0	1.1	1.1	12.6	5.1
FW Spt & Hat				32.9	
River Gillnet				7.8	

Avg. 1.69 % Survival

Figure 16.



	AK	BC	WA	OR	CA
Ocean Sport	0	0	14.9	18.2	2.3
Ocean Commercial	0	1.9	1.3	7.7	2
FW Spt & Hat				6.6	
River Gillnet				45.2	

Figure 17.

The 1984 to 1987 brood Clackamas spring chinook released in the Clackamas River 'survived at an average rate of 0.43 %. They were caught primarily in the Oregon freshwater sport fishery with lesser contributions to the Alaska and British Columbia ocean commercial and Columbia River gillnet fisheries (Figure 18).

The 11987 brood Mid Willamette stock spring chinook released in the Clackamas River survived at an average rate of 1.01 %. They were caught primarily in the Oregon freshwater sport fishery with lesser contributioins to the Alaska and British Columbia ocean commercial and Columbia River gillnet fisheries (Figure 1'9).

The 1984 to 1987 brood Late Clackamas stock coho released in the Collawash River survived at a rate of 0.77 % (Figure 20

None of the summer and winter steelhead were marked with coded-wire tags for evaluation.

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 and cutthroat.

The 1983 brood Mid Willamette spring chinook salmon stock' released in the Santiam River and North Fork survived at an average rate of 1.04 % and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries (Figure 21).

The 1984 brood South Santiam spring chinook salmon released in the Santiam River and North, Fork survived at an average'rate 'of l.l'% and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries (Figure 22).

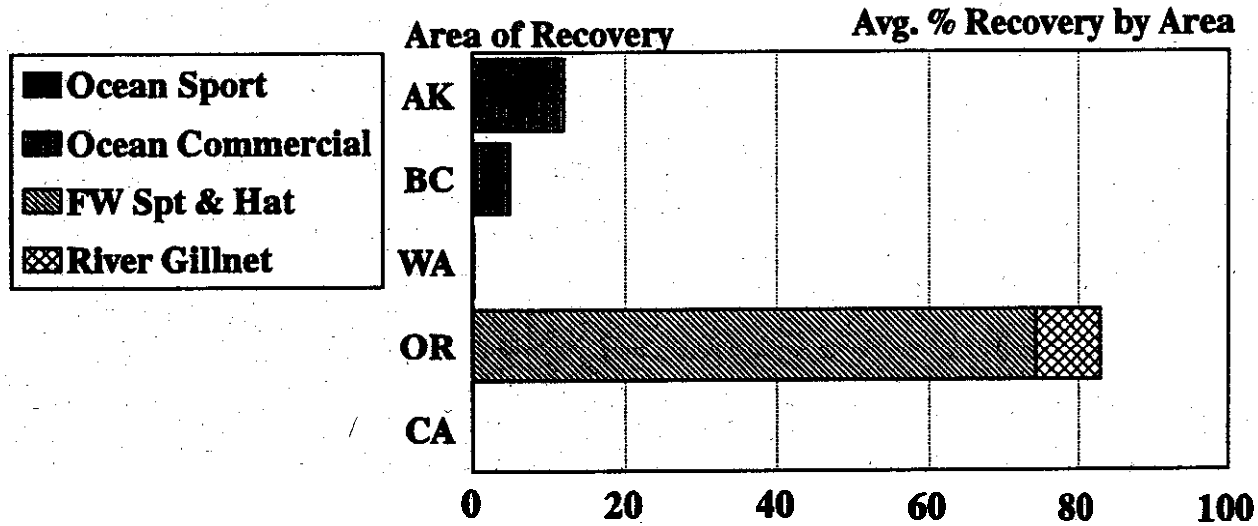
The 1984 to -1987 brood years of North Santiam spring chinook salmon released in the Santiam River and North Fork survived at' an average rate of 1.37 % 'and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries (Figure 23).

The 1984 to 1987 brood of North Santiam spring chinook salmon reared at Marion Forks Hatchery and released in the South Santiam River survived at a rate of 1.23 % and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries (Figure 24).

The winter steelhead and cutthroat trout released by the Marion Forks Hatchery were not coded-wire tagged for evalutaion.

Clackamas Spring Chinook Released in Clackamas R

1984 - 1987 Brood Year



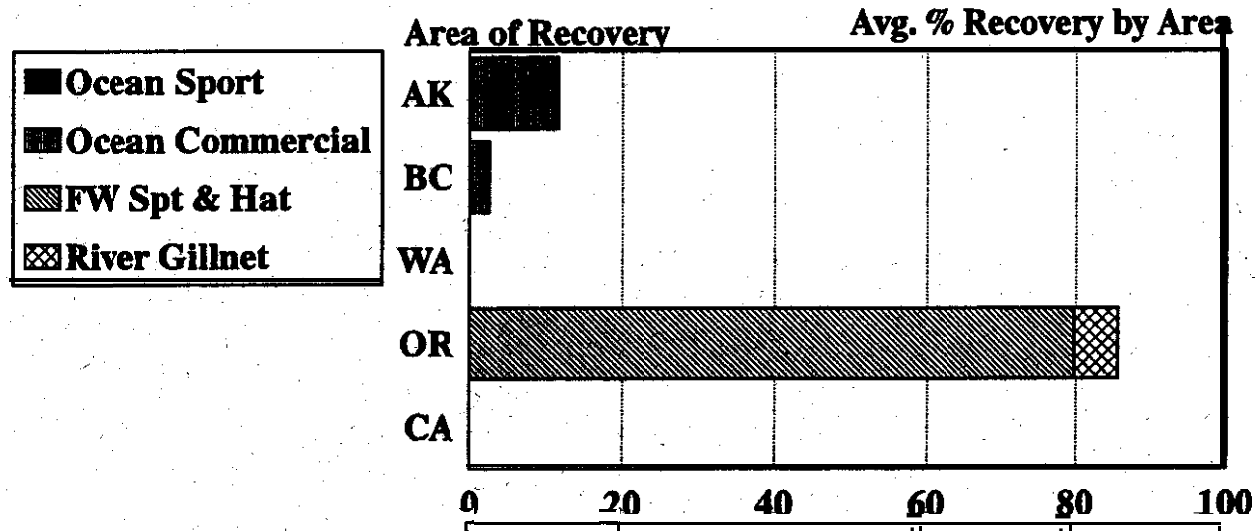
	AK	BC	WA	OR	CA
Ocean Sport	0	0.7	0	0	0
Ocean Commercial	12	4.2	0.2	0	0
FW Spt & Hat				74.4	
River Gillnet				8.7	

Avg. 0.43 % Survival

Figure 18.

M. Willamette Stock Spring Chinook Released in Clackamas R

1987 Brood Year



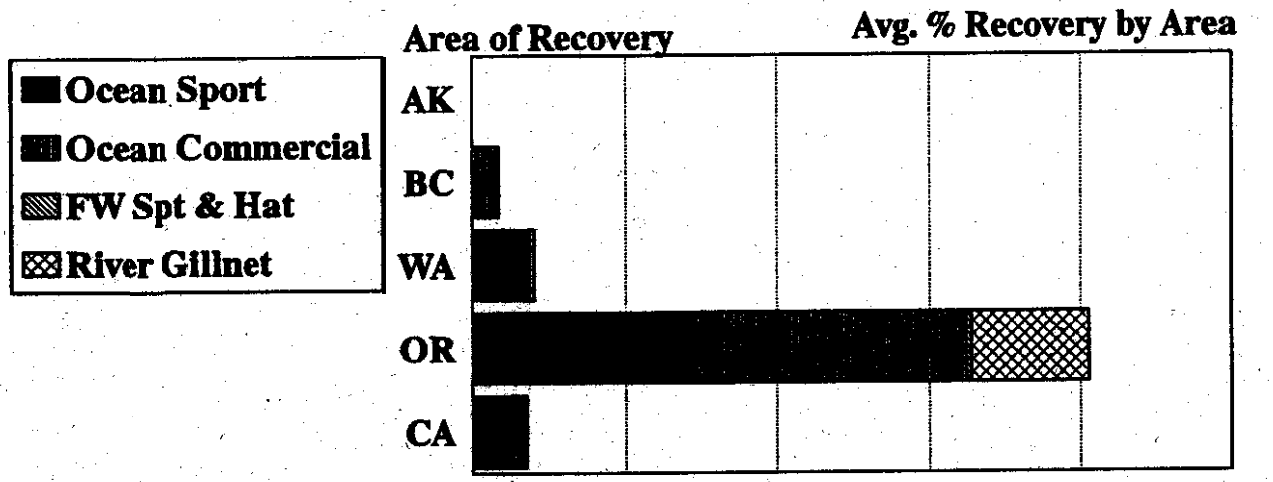
	AK	BC	WA	OR	CA
Ocean Sport	0.6	0	0	0	0
Ocean Commercial	11	2.6	0	0	0
FW Spt & Hat				79.8	
River Gillnet				5.3	

Avg. 1.01 % Survival

Figure 19.

Clackamas River Late Coho Stock Released in Collawash River

1985 - 1987 Brood Year



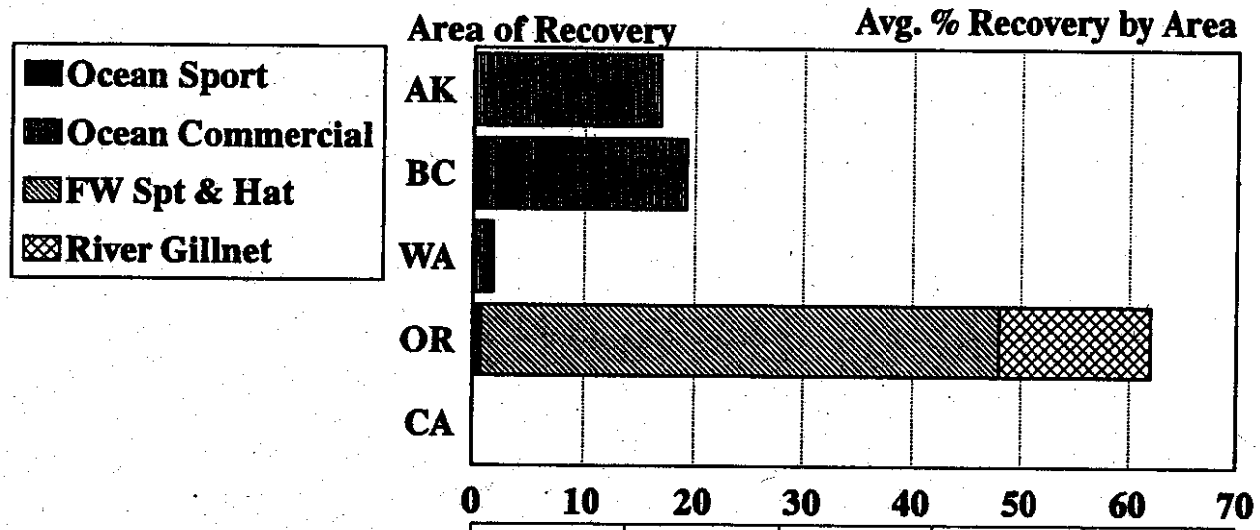
	AK	BC	WA	OR	CA
Ocean Sport	0	0	7.6	29.4	5.1
Ocean Commercial	0	3.5	0.6	35.6	2.1
FW Spt & Hat				0.6	
River Gillnet				15.5	

Avg. 0.77 % Survival

Figure 20.

Marion Forks (M. Willamette Stk) Spring Chinook Released in Santiam R. & N. Fork

1983 Brood Year



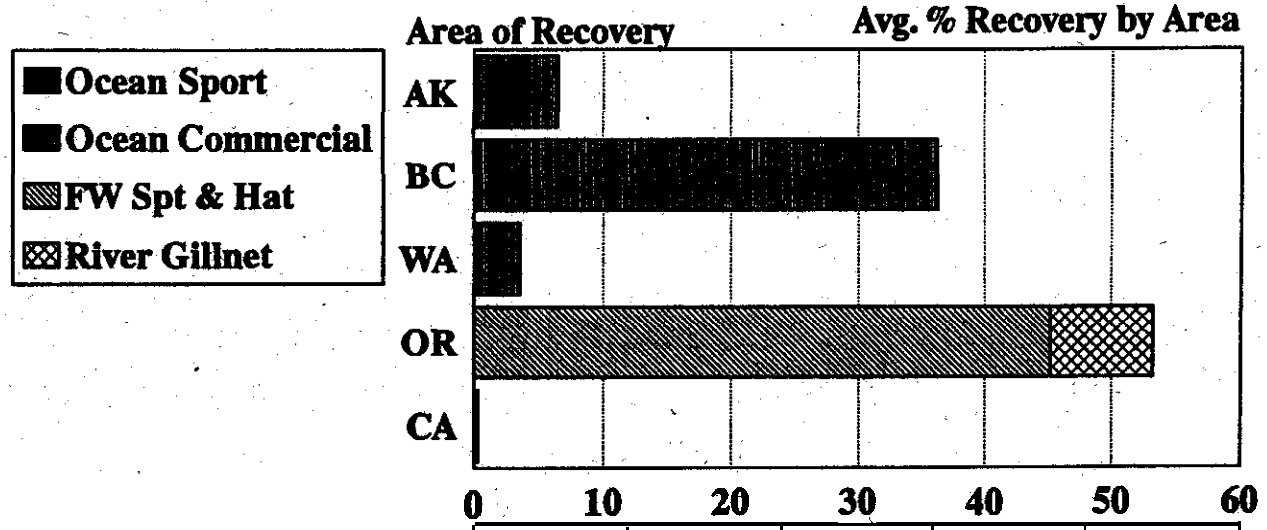
	AK	BC	WA	OR	CA
Ocean Sport	0.2	1.3	0.3	0.1	0
Ocean Commercial	16.7	18	1.5	0.6	0
FW Spt & Hat				47.3	
River Gillnet				14	

Avg. 1.04 % Survival

Figure 21.

Marion Forks (S. Santiam Stock) Spring Chinook Released in Santiam R. & N. Fork

1984 Brood Year



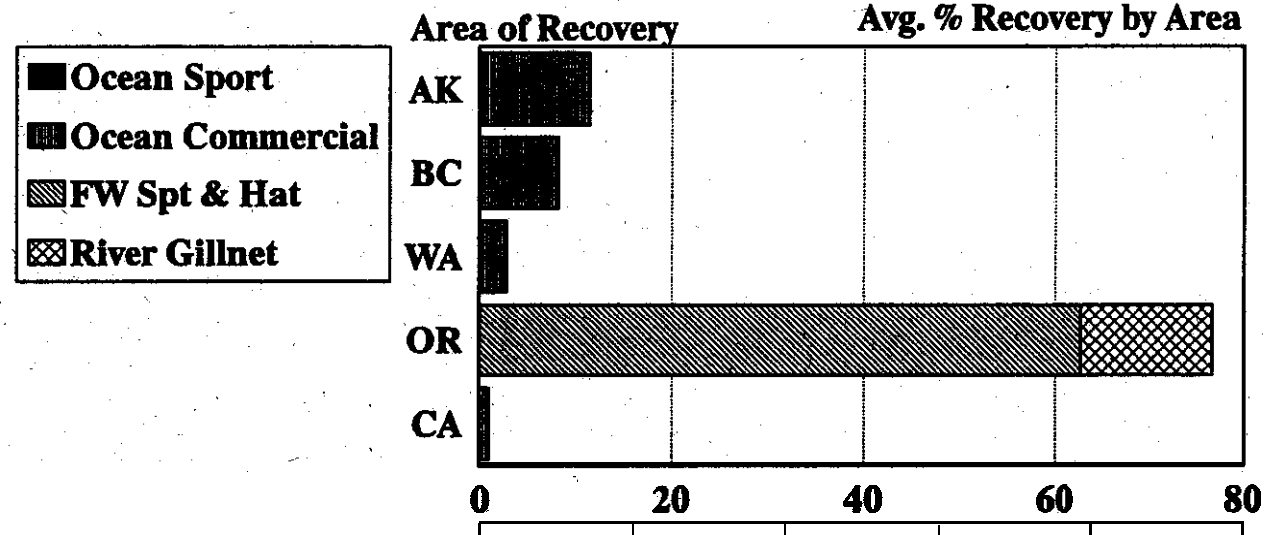
	AK	BC	WA	OR	CA
Ocean Sport	0.1	0.6	0.6	0	0.3
Ocean Commercial	6.5	35.7	3	0	0
FW Spt & Hat				45.2	
River Gillnet				8	

Avg. 1.1 % Survival

Figure 22.

Marion Forks (N. Santiam Stock) Spring Chinook Released in Santiam R. & N. Fork

1984 - 1987 Brood Year



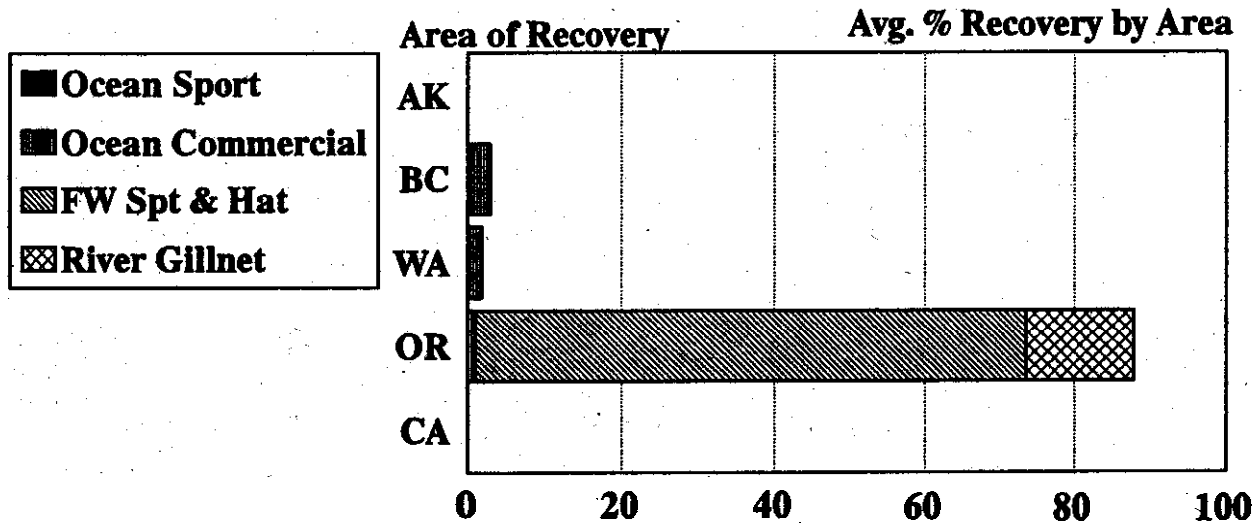
	AK	BC	WA	OR	CA
Ocean Sport	0.5	0.2	0.4	0	0
Ocean Commercial	10.9	8	2.3	0	1
FW Spt & Hat				62.8	
River Gillnet				14	

Avg. 1.37 % Survival

Figure 23.

Marion Forks (N. Santiam Stock) Spring Chinook Released in Santiam R., S. Fork

1985 - 1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0.3	0.2	0	0
Ocean Commercial	7..7	2.6	1.6	0.9	0
FW Spt & Hat				72.8	
River Gillnet				14.1	

Avg. 1.23 % Survival

Figure 24.

South Santiam Hatchery

The South Santiam Hatchery is located belowe Foster Dam on the South Santiam River near Sweet Home. South Santiam Hatchery rears and releases spring chinook salmon and summer steelhead trout.

The 1984 to 1987 brood years of spring chinook salmon reared at South Santiam Hatchery and released in the South Santiam River survived at a rate of 1.08,% and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 25).

The 1986 brood'years of South Santiam spring chinook salmon reared at South Santiam Hatchery and released in the Clackamas River survived at a rate of 2.3 % and contirbuted primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 26).

The winter steelhead trout released by the South Santiam Hatchery were not coded-wire tagged to permit evaluation.

Stayton Rearing Pond

Stayton Pond, a refurbished gravel pit located south of Stayton is operated as. a satellite of the South Santiam Hatchery. Tule fall chinook are reared and released from Stayton Pond.

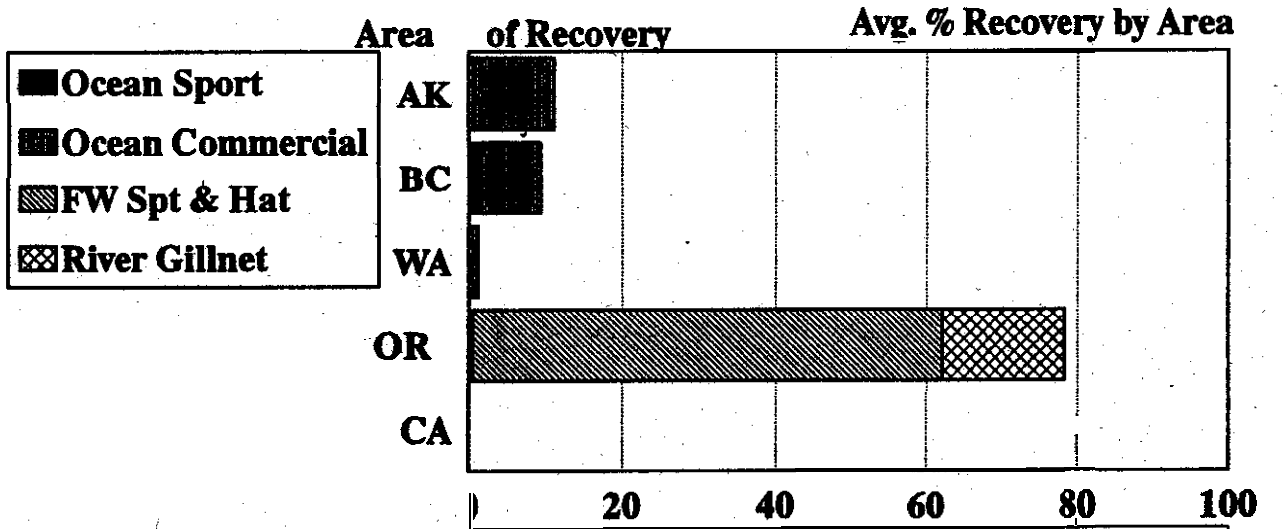
The 1983 to 1987 brood, of tule fall chinook released from Stayton pond survived an-average rate of 0.81 % and contributed primarily to the British Columbia, Washington and Oregon ocean sport, and commerical fisheries and the Columbia River gillnet fishery (Figure 27).

Roaring River Hatchery

Roaring 'River Hatchery rears and releases winter steelhead and rainbow trout., None of these fish have been coded-wire tagged for evaluation.

S. Santiam (S. Santiam Stock) Spring Chinook Released in Santiam R., S. Fork

1984 - 1987 Brood Year



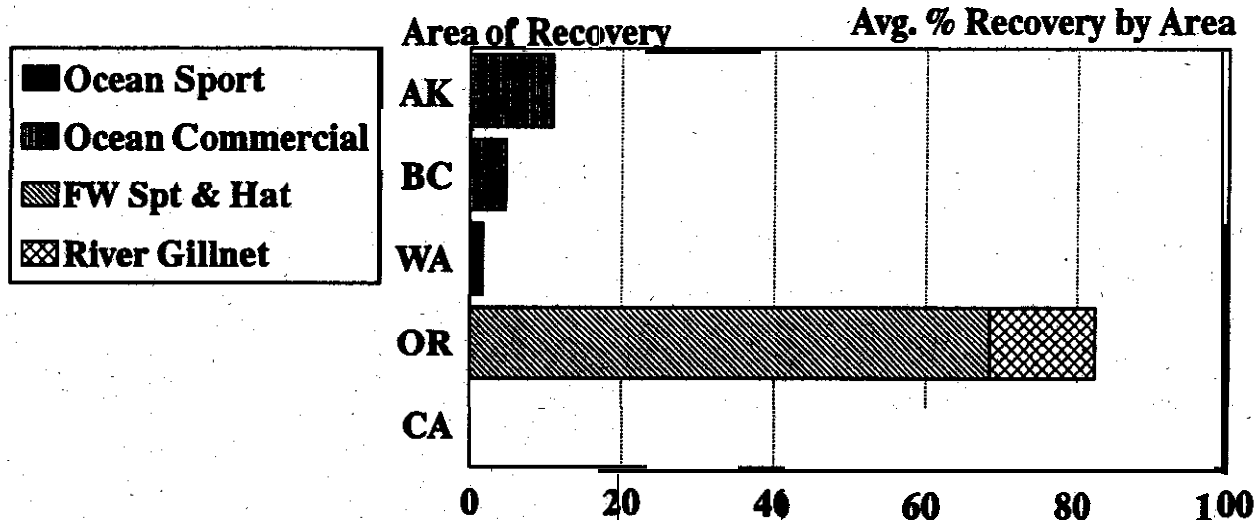
	AK	BC	WA	OR	CA
Ocean Sport	0	1.3	0	0.2	0
Ocean Commercial	11.2	8.1	1.2	OA	0
FW Spt & Hat				61.5	
River Gillnet				16.2	

Avg. 1.08 % Survival

Figure 25.

S. Santiam Stock Spring Chinook Released in Clackamas R

1986 Brood Year



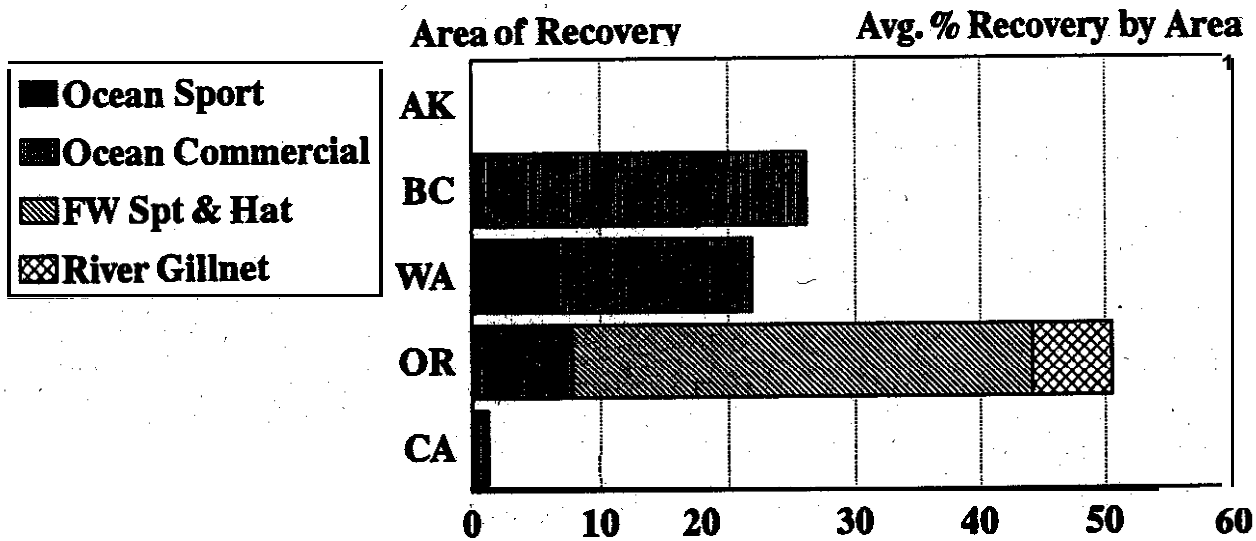
	AK	BC	WA	OR	CA
Ocean Sport	0	0	1.7	0	0
Ocean Commercial	11	4.8	0	0	0
FW Spt & Hat				68.4	
River Gillnet				14.1	

Avg. 2.3 % Survival

Figure 26.

Stayton Pond Tule Fall Chinook Released in Willamette R

1983 - 1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport		0.8	6.6	OA	0.3
Ocean Commercial		25.4	15.3	7.4	1
FW Spt & Hat				36A	
River Gillnet				6.3	

Avg. 0.81 % Survival

Figure 27.

McKenzie Batahery

McKenzie 'Hatchery is located on the McKenzie River off Highway 126 18 miles east of Springfield. McKenzie Hatchery rears and releases spring chinook salmon and summer steelhead trout.

The 1984 to 1987 brood years of spring chinook salmon rleased in the McKenzie River survived at a rate of 1.19% and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 28).

None of the summer steelhead released from McKenzie Hatchery have been coded-wire tagged for evaluation.

Leaburg Hatchery

Leaburg Hatchery is located 'on the McKenzie River off Highway 126, 16 miles east of Springfield. McKenzie 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 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.

The 1904 to 1987 brood 'years of spring chinook salmon reared, at , Willamette Hatchery and released- in the middle fork of the Willamette River survived at a rate of. 1.24% and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 29).

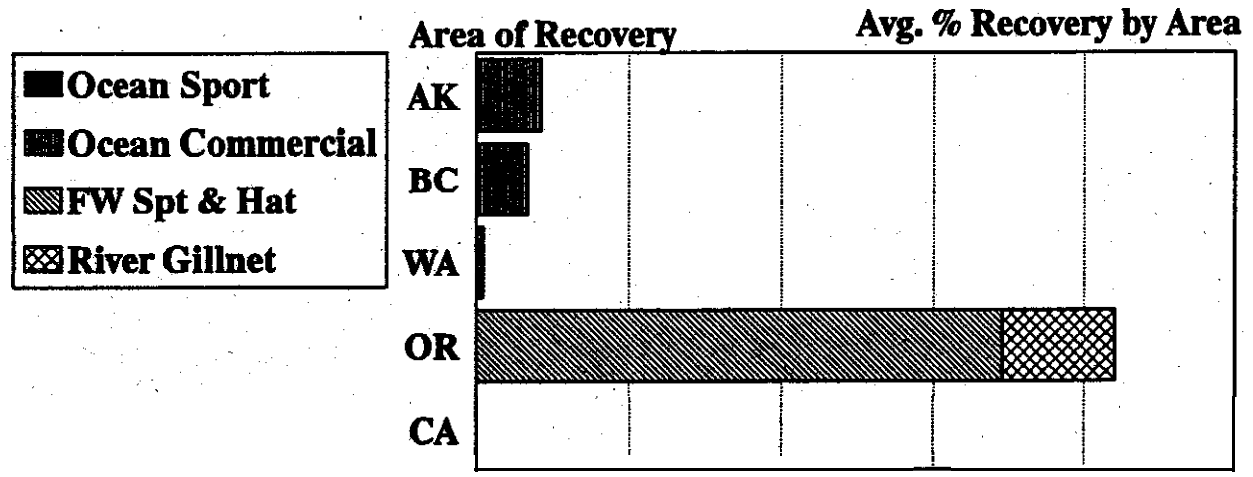
Sandy Hatahery

Sandy Hatchery is located on the Sandy River 1 mile northeast of Sandy off Highway 26. Sandy Hatchery rears and releases coho salmon, rainbow and brook trout.

The 1985 to 1989 brood years of coho released 'in the Sandy River survived at an average rate of 4.92 % and contributed primariay to the Washington and Oregon ocean, sport and commercial fisheries and the Columbia River gillnet fishery (Figure 30).

McKenzie Spring Chinook
Released in McKenzie R

1984 - 1987 Brood Year



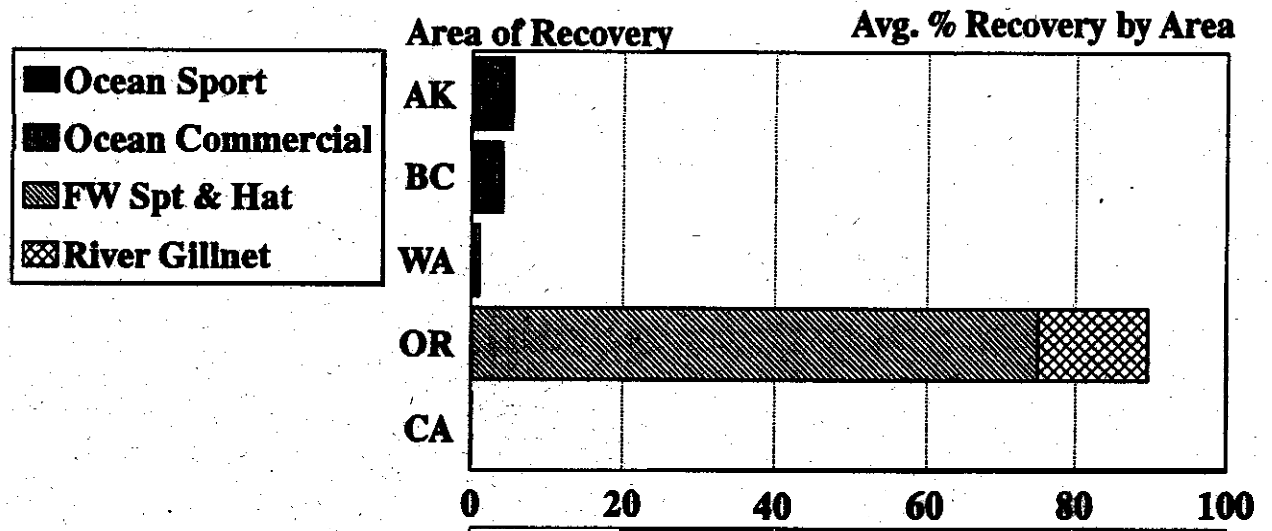
	AK	BC	WA	OR	CA
Ocean Sport	0.2	0.1	0.1	0	0
Ocean Commercial	8.3	6.6	0.8	0	0
FW Spt & Hat				69.1	
River Gillnet				14.9	

Avg. 1.19 % Survival

Figure 28.

Willamette Spring Chinook
Released in Wllamette R., M. Fork

1984 - 1987 Brood Year

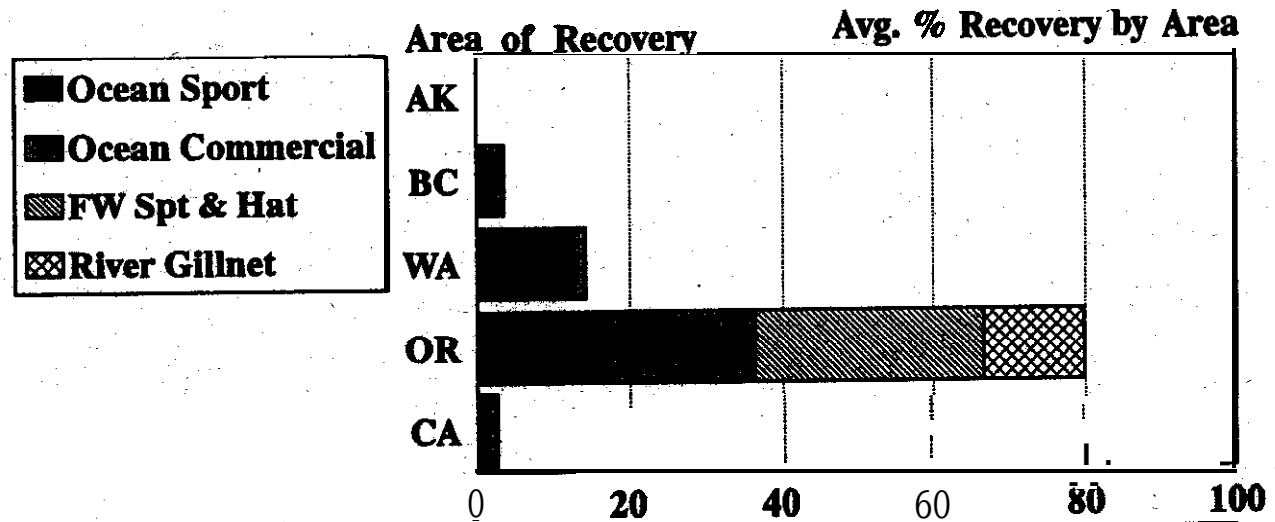


	AK	BC	WA	OR	CA
Ocean Sport	0.1	0.1	0.2	0.1	0.1
Ocean Commercial	5.3	4	0.9	0	0
FW Spt & Hat				75	
River Gillnet				14.4	

Avg. 1.24 % Survival

Figure 29.

Sandy Coho
Released in Sandy River
1985 - 1989 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0	12.8	17.4	1.2
Ocean Commercial	0	3.5	1.3	19	1.3
FW Spt & Hat				30.2	
River Gillnetlnet				13.3	

Avg. 4.92 % Survival

Figure 30.

The 1989 brood year of Sandy stock coho reared at Trojan pond and released in the Columbia River survived at an average rate of' 0.2 % and contributed primarily to the Washington and Oregon ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 31).

None of the rainbow or brook trout released by Sandy Hatchery were coded-wire tagged for evaluation.

Cascade Hatchery

The Cascade Hatchery is located off Highway 84 near Bonneville, Dam. Cascade Hatchery rears and releases coho salmon that are presently all trucked and released in the Yakima and Umatilla River systems.

The 1985 to 1989 brood years of coho released in the Umatilla River survived at an average rate of 1.98 % and contirbuted primarily to the Washington, Oregon and California ocean sport, and commercial fisheries and the Columbia River gillnet fishery (Figure 32).

The 1986 to 1989 brood years of coho released in the Yakima River survived, at an average rate of-l.17 % and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery' (Figure 33).

Bonneville Hatchery

Bonneville Hatchery is located on the Columbia River below Bonneville Dam just off Highway 84. Bonneville Hatchery rears, and releases tule and up river bright fall chinook, spring chinook and coho salmon.

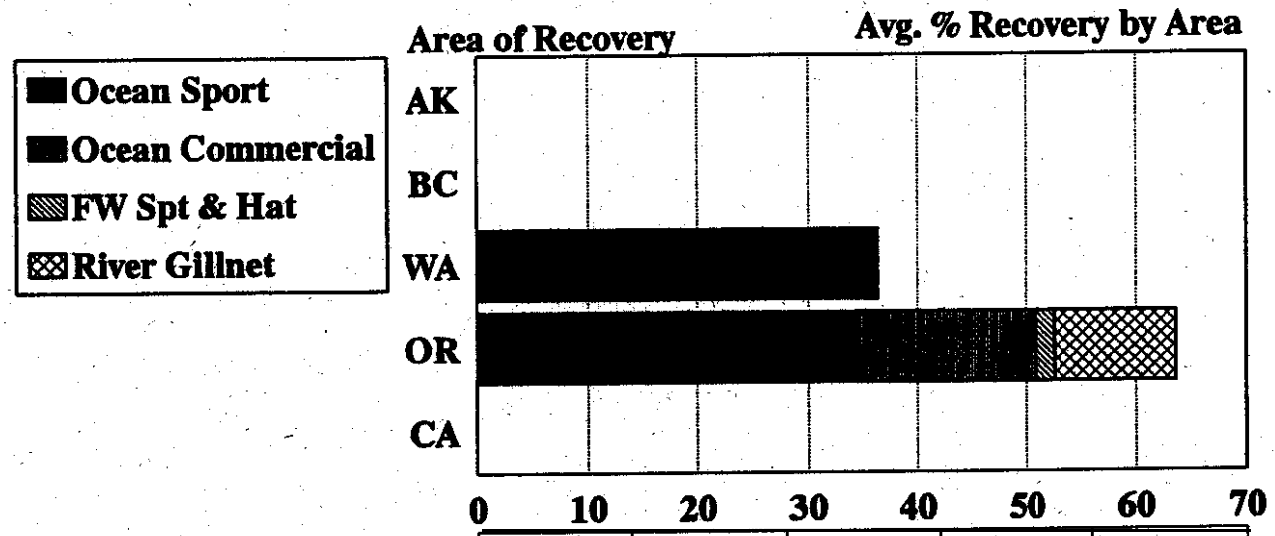
The 1983 to 1987 brood years of tule fall chinook survived at an average rate of 0.74 % and contributed primarily to the British Columbia, Washington and Oregon ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 34).

The 1983 to 1907 brood years, of up river bright fall chinook survived at an average rate of 1.93 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery (Figure 35).

The 1983 to 1987 brood years of up river bright fall chinook released in the Umatilla River survived at an average rate of 1.42 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery (Figure 36).

Trojan Pond (Sandy River Stock) Coho Released in Columbia River

1989 Brood Year



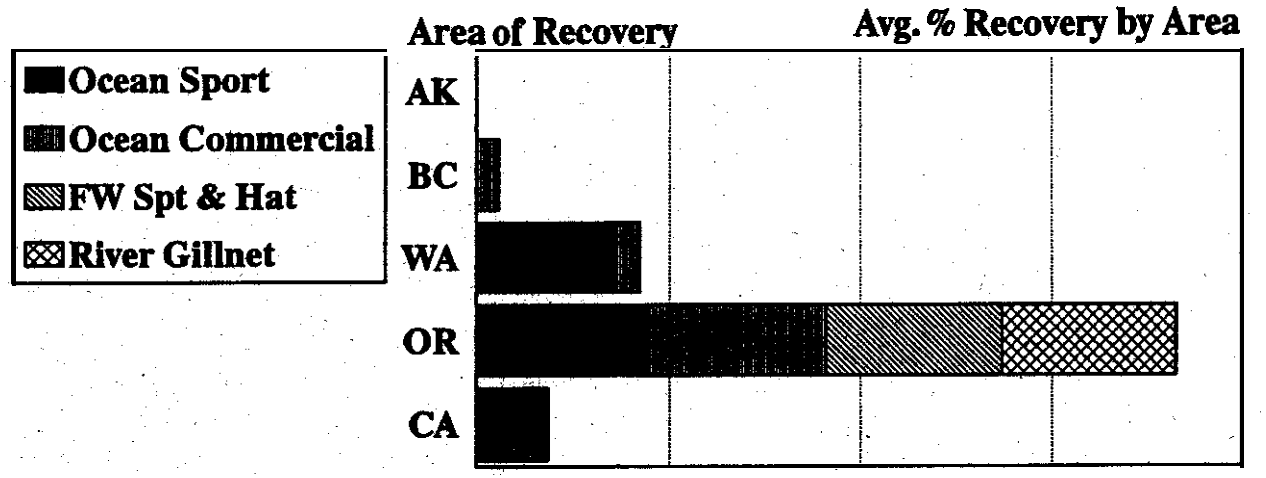
	AK	BC	WA	OR	CA
Ocean Sport	0	0	36.4	34.5	0
Ocean Commercial	0	0	0	16.4	0
FW Spt & Hat				1.8	
River Gillnet				10.9	

Avg. .2 % Survival

Figure 31.

Cascade Coho
Released in Umatilla R.

1985 - 1989 Brood Year



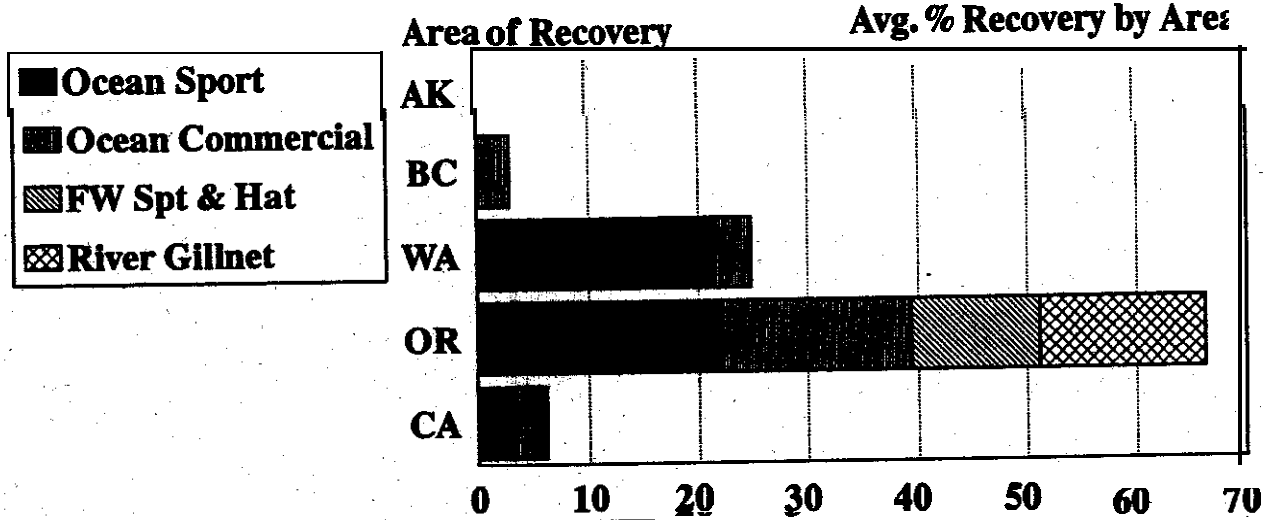
	AK	BC	WA	OR	CA
Ocean Sport	0	0.1	14.6	17.7	3.5
Ocean Commercial	0	2.2	2.4	18.7	4
FW Spt & Hat				18.5	
River Gillnet				18.3	

Avg. 1.98 % Survival

Figure.32.

Cascade Coho
Released in Yakima R.

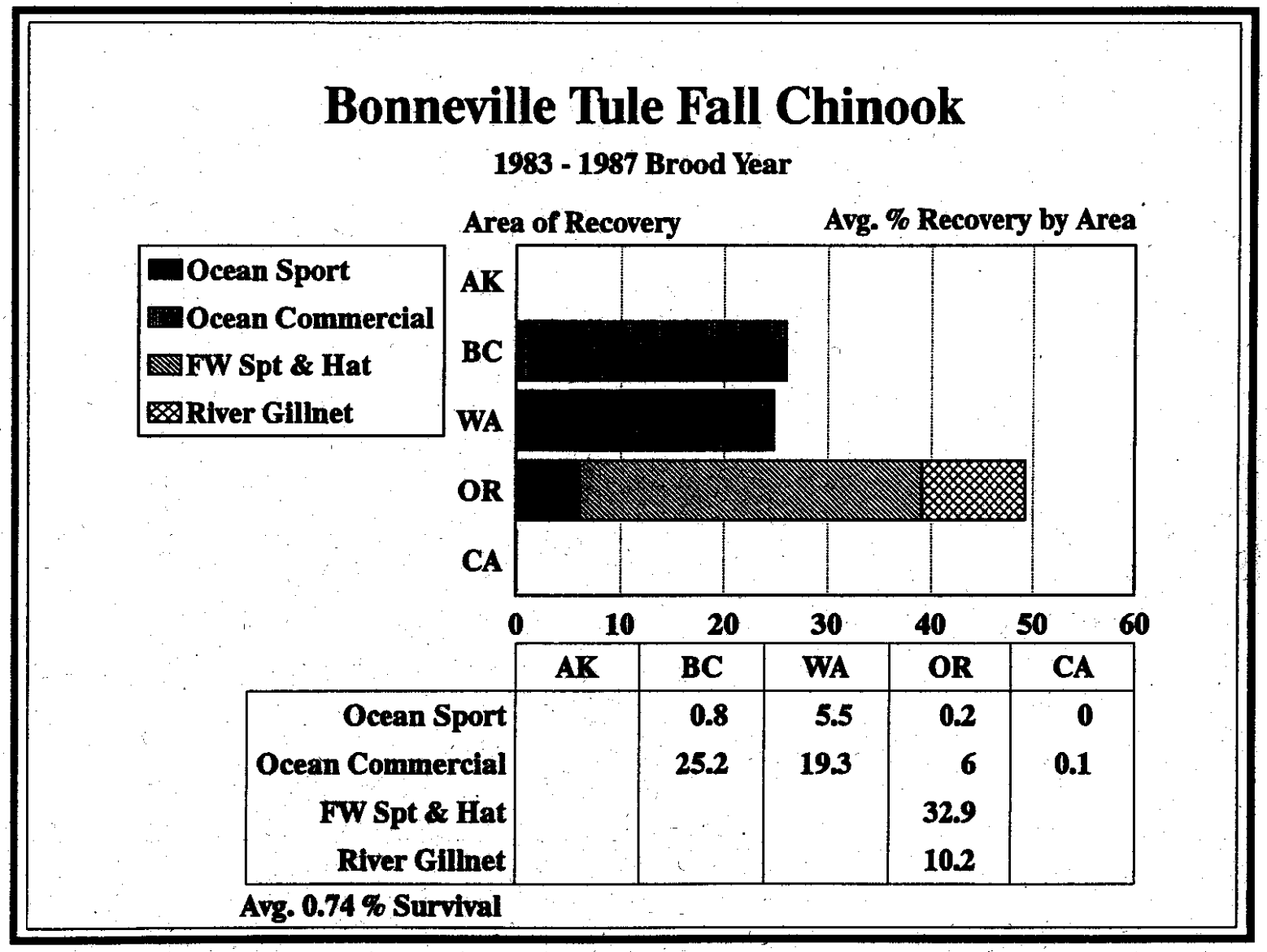
1986 - 1989 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0.2	21.3	22.2	3.5
Ocean Commercial	0	2.7	3.5	17.2	2.7
FW Spt & Hat				11.8	
River Gillnet			15.1		

Avg. 1.17 % Survival

Figure 33.

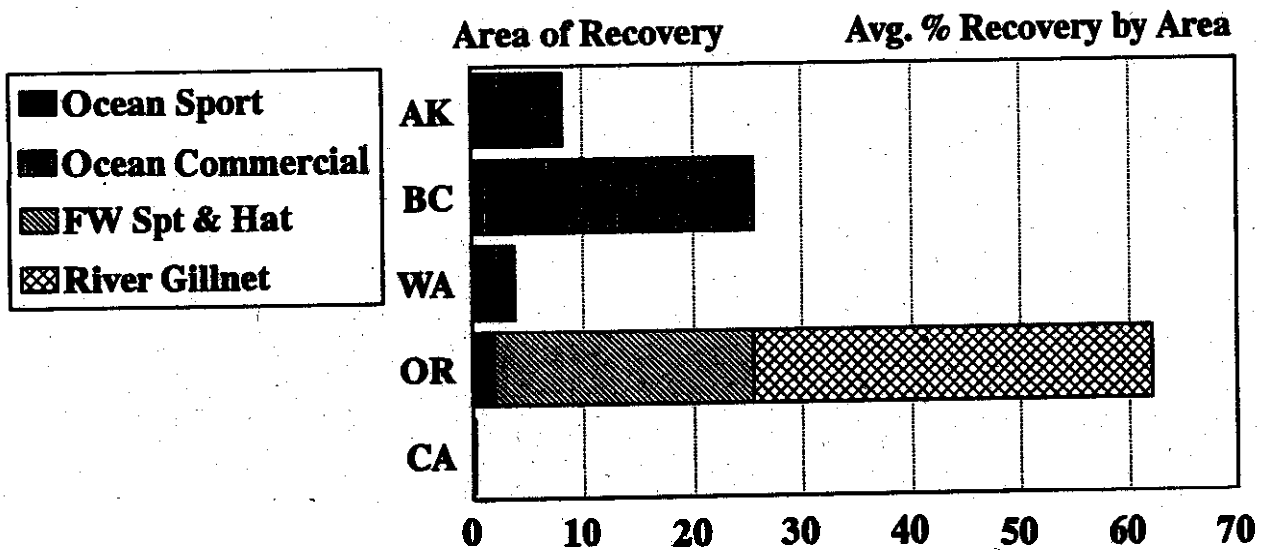


	AK	BC	WA	OR	CA
Ocean Sport		0.8	5.5	0.2	0
Ocean Commercial		25.2	19.3	6	0.1
FW Spt & Hat				32.9	
River Gillnet				10.2	

Figure 34.

Bonneville URB Fall Chinook

1983 - 1987 Brood Year



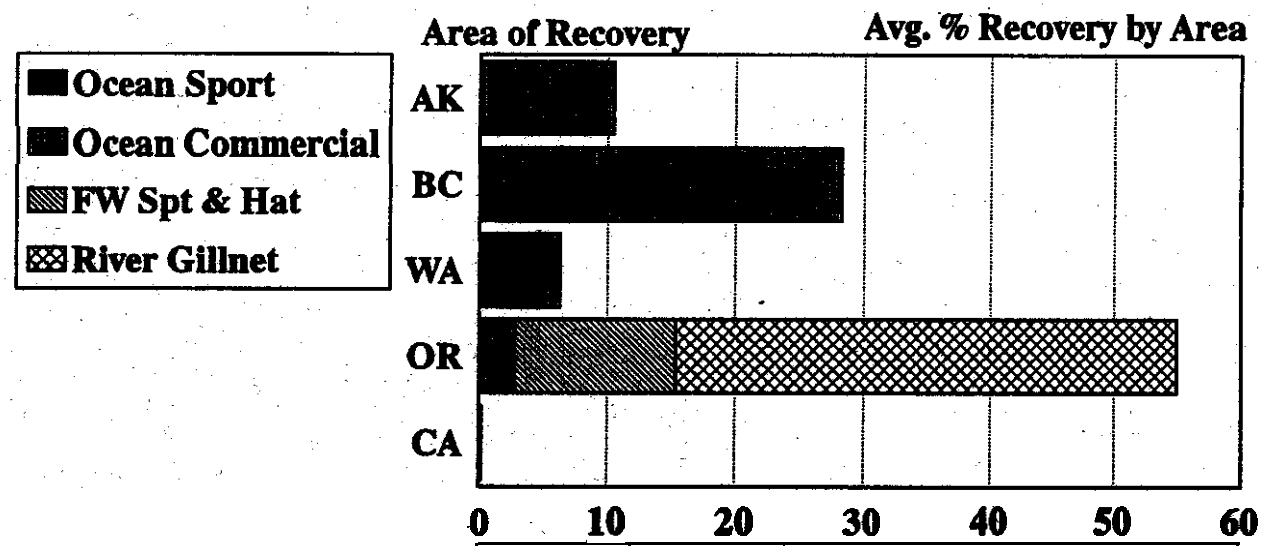
	AK	BC	WA	OR	CA
Ocean Sport	0.1	1	2	0.2	0.1
Ocean Commercial	8.1	24.6	1.8	1.7	0.1
FW Spt & Hat				23.6	
River Gillnet				36.6	

Avg. 1.93 % Survival

Figure 35

Bonneville URB Fall Chinook Released in Umatilla R

1983 - 1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0.3	1.7	4.1	0.4	0
Ocean Commercial	10.2	26.5	2.3	2.4	0.2
FW Spt & Hat				12.6	
River Gillnet				39.6	

Avg. 1.42% Survival

Figure.36.

The 1986 brood of up river bright summer chinook released in the Columbia River at Bonneville Hatchery survived at an average rate of 0.22,% and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery (Figure 37).

The 1985 to 1989 brood years of coho survived at an average rate of 3.35 and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 38).

Oxbow Hatchery

Oxbow Hatchery is located on the Columbia River 2 miles east of Cascase Locks off Highway 84. Oxbow Hatchery rears coho and spring chinook salmon. Part of the coho reared in the Herman Creek ponds are trucked to Bonneville Hatchery for extended rearing and acclimation prior to release at Bonneville. The remainder of the coho started at Oxbow are stocked in Wahkeena Pond for extended rearing and released from that location. Wahkeena Pond is operated as a satellite of Oxbow 'Hatchery,.

The 1983 to 1984 brood Carson stock spring chinook reared at Oxbow Hatchery and released in Lookingglass Creek survived at a rate of 0.06 % and contributed' primarily to the California ocean commercial fishery and the Columbia freshwater sport and Columbia River gillnet fishery (Figure 39).

The 1986 to 1987 brood Carson stock spring chinook reared at Oxbow Hatchery and released in the west Pork of Hood River' survived at a rate of 0.19 % and contributed primarily to the Columbia freshwater sport and Columbia River gillnet fishery (Figure 40).

Wahkeena Pond

Wahkeena Pond is a natural lake rearing location located near Rooster Rook State Park off Highway 84. Coho stocked in Wahkeena Pond are fed daily by the crew from Oxbow Hatchery.

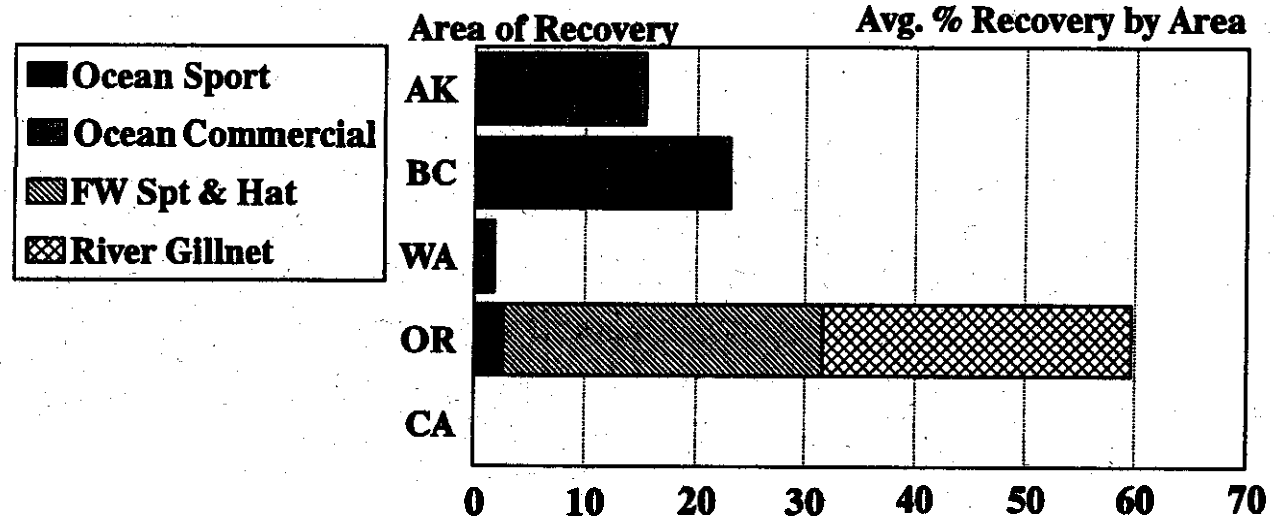
The 1985 to 1989 brood years of coho reared in Wahkeena Pond survived at an average rate of 1.33 % and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries 'and the Columbia River gillnet fishery ('Figure 39).

Round Butte Ratahery

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.

Bonneville URB Summer Chinook Released in Tanner Creek

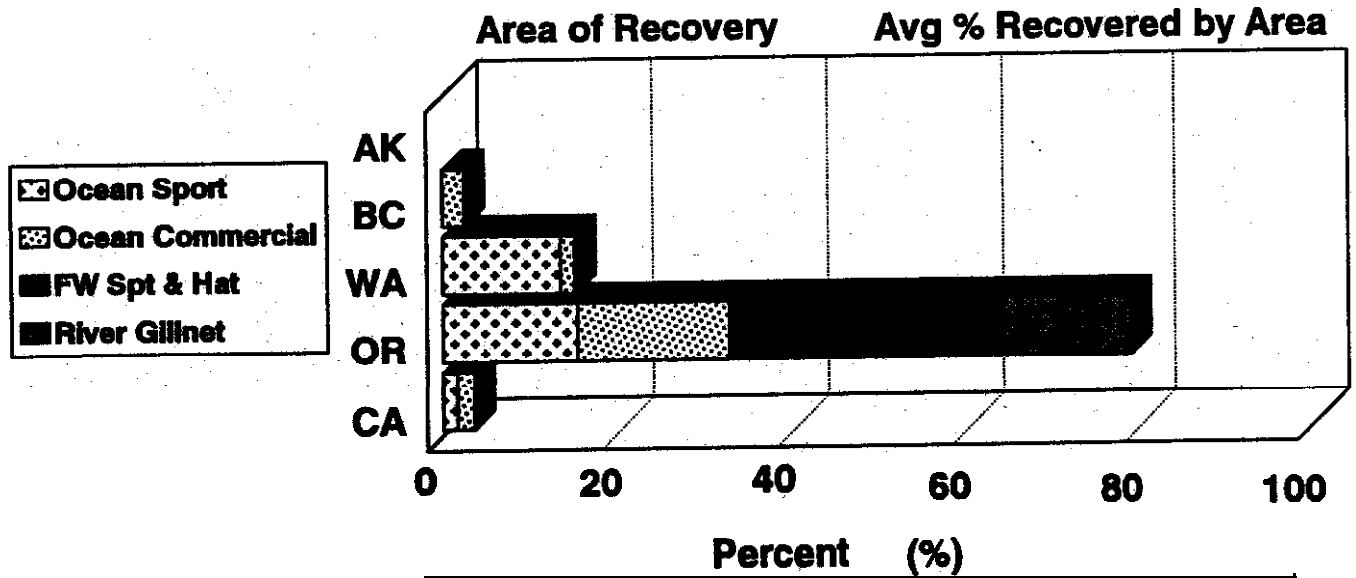
1986 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0.9	4.2	0.3	0	0
Ocean Commercial	14.5	18.9	1.5	2.6	0
FW Spt & Hat				29	
River Gillnet				28.1	

Avg. 0.22 % Survival

Figure 37.



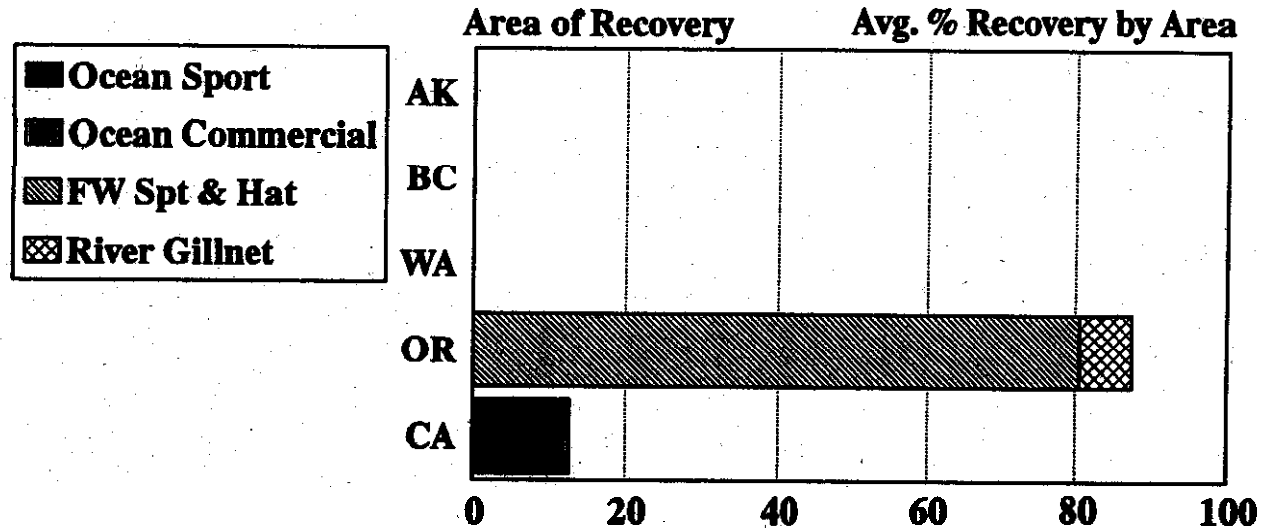
	AK	BC	WA	OR	CA
Ocean Sport			13.5	15.4	1.6
Ocean Commercial		2.4	1.6	17.6	1.9
FW Spt & Hat				31.2	
River Gillnet				14.9	

Avg: 3.35 % Survival

Figure 38.

Carson Spring Chinook (Lookingglass Hat) Released in Lookingglass Creek

1983 - 1984 Brood Year



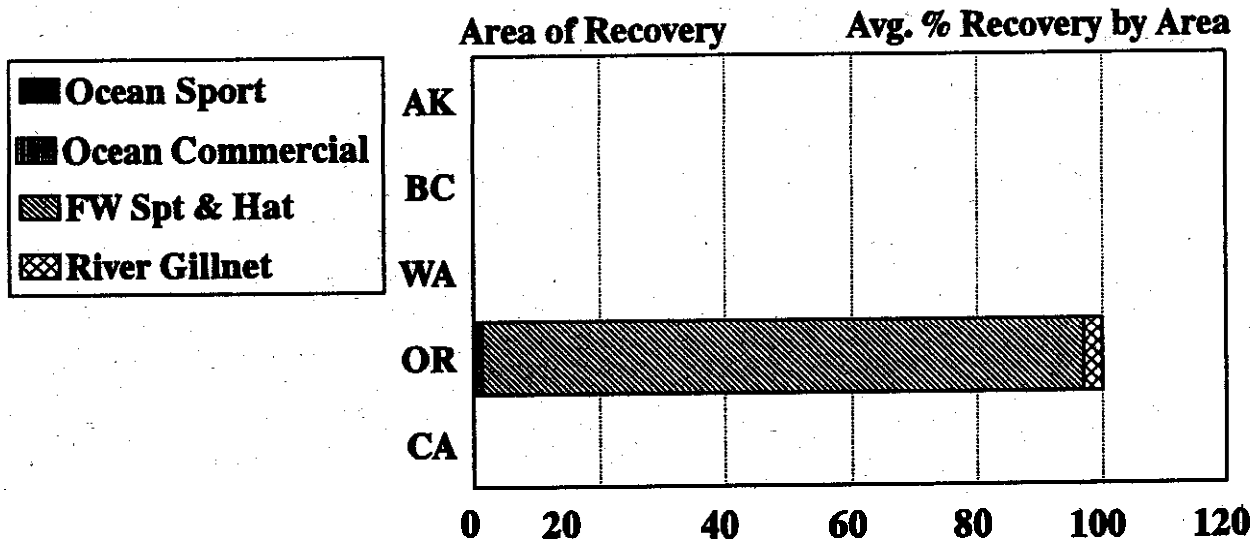
	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0		0 0	0	12.6
FW Spt & Hat				80.5	
River Gillnet				7	

Avg. 0.06 % Survival

Figwre 39.

Carson Spring Chinook (Lookingglass Hat) Released in W. Fk Hood R.

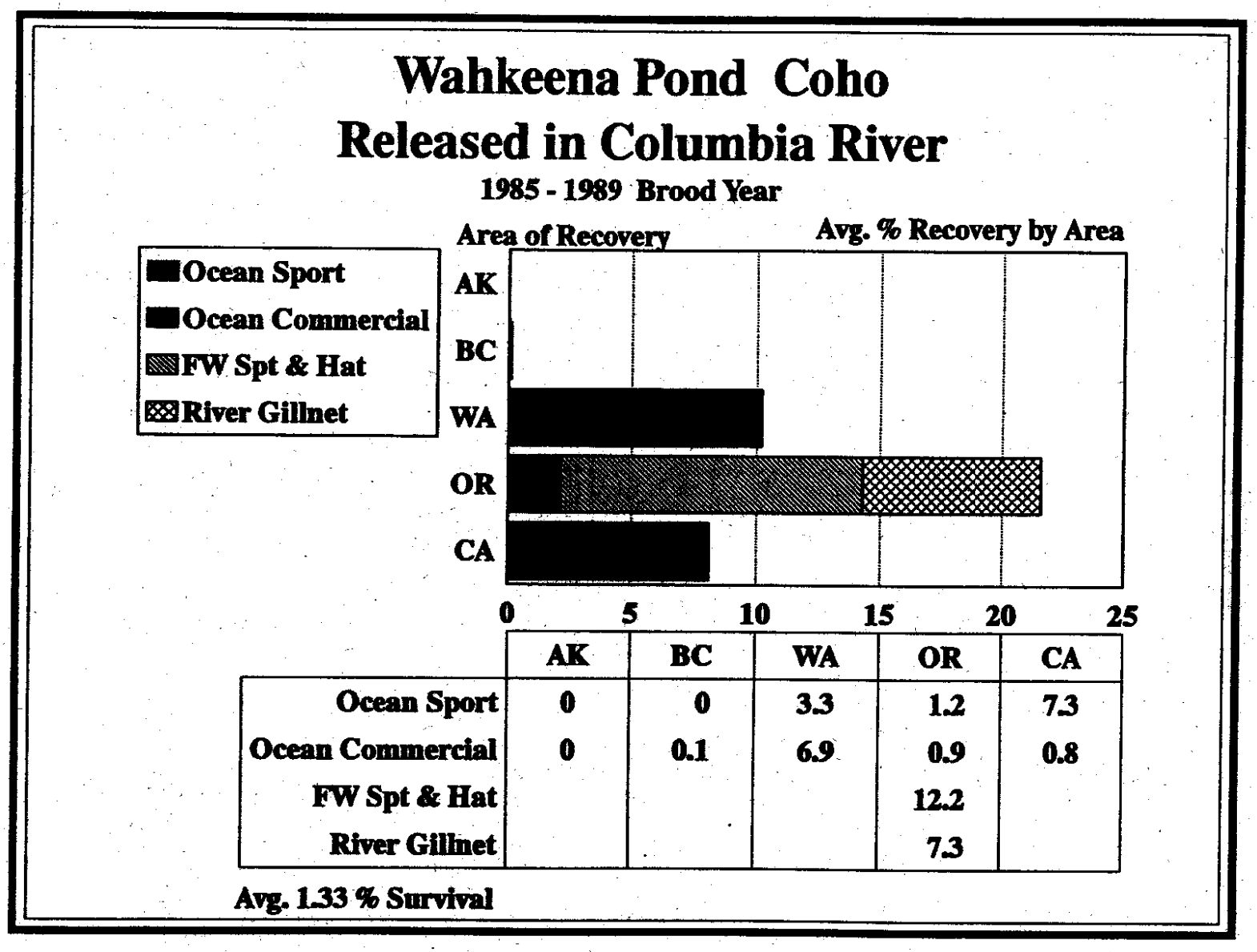
1986 - 1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0	0	0	1.4	0
FW Spt & Hat				95.6	
River Gillnet				3.1	

Avg. 0.19 % Survival

Figure 40.



	AK	BC	WA	OR	CA
Ocean Sport	0	0	3.3	1.2	7.3
Ocean Commercial	0	0.1	6.9	0.9	0.8
FW Spt & Hat				12.2	
River Gillnet				7.3	

Figure 41.

The 1983 to 1987 brood years of Deschutes spring chinook reared at Round Butte hatchery and released in the Deschutes River survived at an average rate of 1.55 % and contributed primarily to the freshwater sport fishery in the Columbia and Deschuted Rivers (Figure 42).

The summer steelhead and brown trout released from Round Butte Hatchery have not been coded-wire tagged for evaluation.

Oak Springs Hatchery

Oak Springs Hatchery is located on the Deschutes River 3 miles north of Maupin. Oak Springs Hatchery rears and releases summer and winter steelhead and rainbow trout.

The 1987 to-1988' brood Umatilla stock summer steelhead reared at Oaks Springs and released in the Umatilla River survived at an average rate of 0.28 % and contributed primarily to the Oregon Columbia River sport and gillnet fisheries (Figure 43).

Wizard Falls Hatahery

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

Fall River Hatahery

Fall River Hatchery is located on Fall River, a tributary of the Deschutes River south east of Rend. Fall River Hatchery rears' and releases cutthroat, brook and rainbow trout., None of theses fish have been coded-wire. tagged for evaluation.,

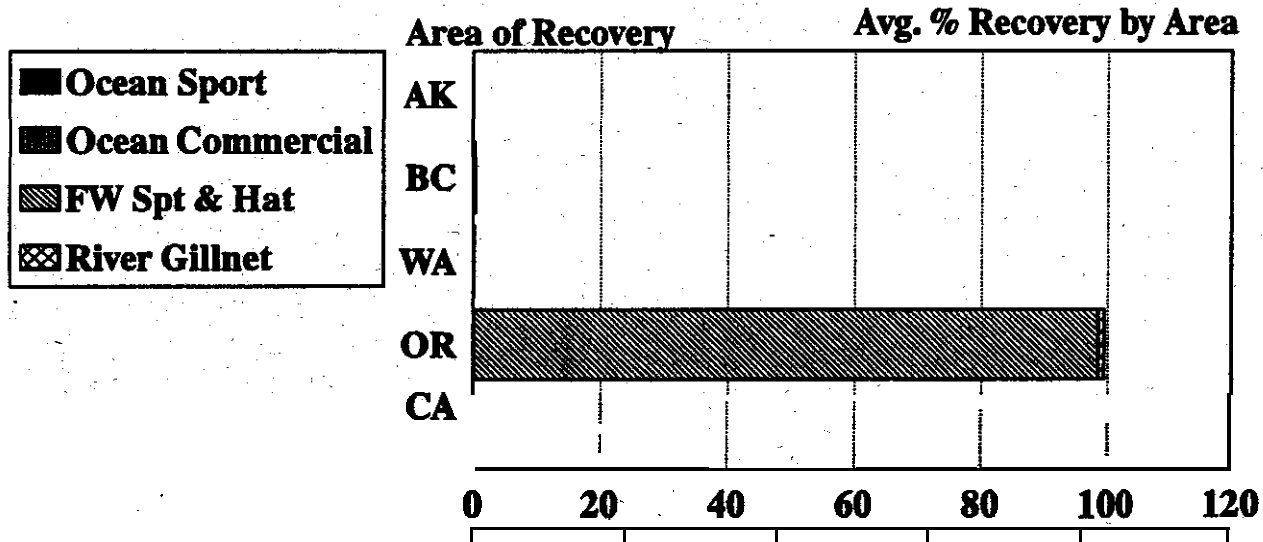
Irrigon Hatchery

Irrigon Hatchery is located on the Columbia River off Highway 730 near Irrigon. Irrigon rears and releases spring and fall chinook salmon, summer steelhead and rainbow trout.

The 1984 to 1987 brood up river bright fall chinook reared at Irrigon hatchery and released in the Umatilla River survived at an average rate of 1.13 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries, and the Columbia River freshwater sport and gillnet fishery (Figure 44).

Round Butte (Deschutes Stock) Spring Chinook Released in Deschutes R.

1983 - 1987 Brood Year



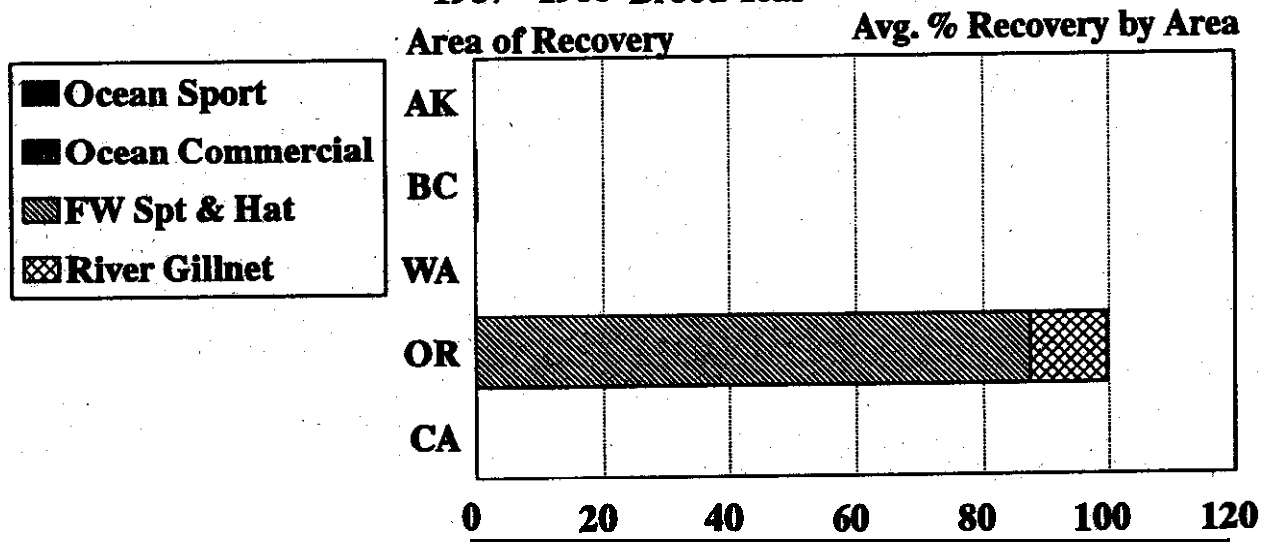
	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0	0.4	0.2	0.2	0
FW Spt & Hat				98.4	
River Gillnet				0.9	

Avg. 1.55 % Survival

Figure 42.

Oak Springs (Umatilla Stock) Summer Steelhead Released in Spring Creek (Umatilla River)

1987 - 1988 Brood Year



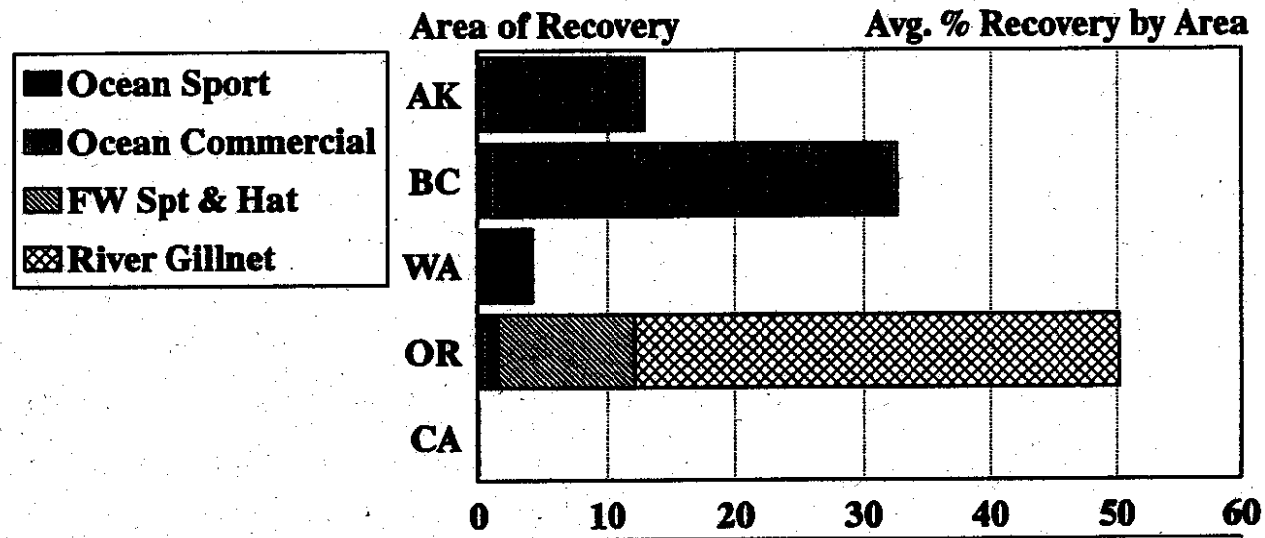
	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0	0.3	0	0	0
FW Spt & Hat				87.6	
River Gillnet				12.2	

Avg. 0.28% Survival

Figure 43.

Umatilla URB Fall Chinook (Irrigon Hat) Released in Umatilla R

1984 - 1987 Brood Year



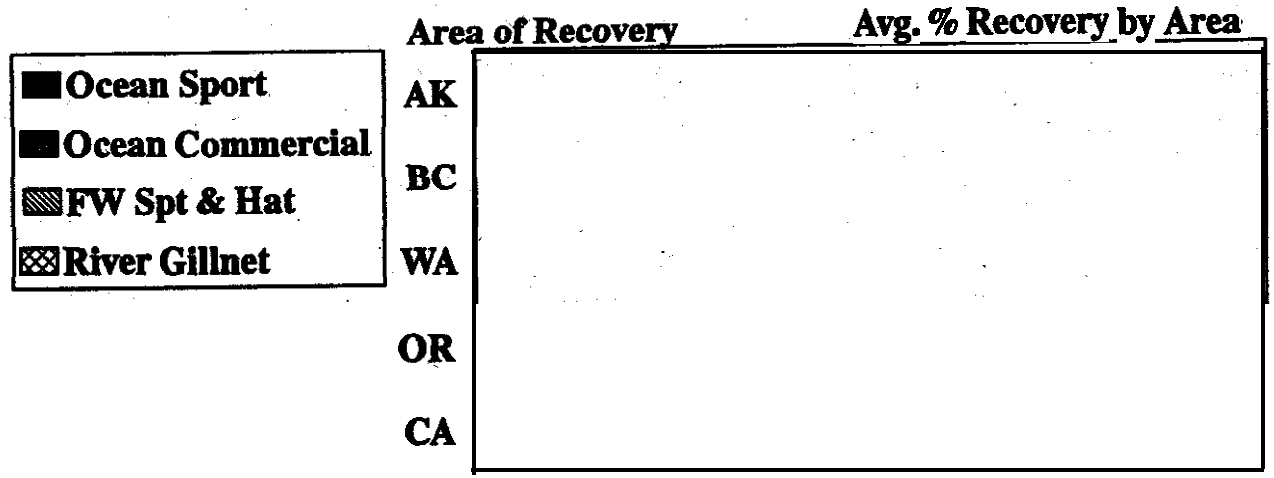
	AK	BC	WA	OR	CA
Ocean Sport	0.1	1	2.1	0.4	0.1
Ocean Commercial	12.8	31.6	2.1	1.1	0
FW Spt & Hat				10.7	
River Gillnet				38	

Avg. 1.13 % Survival

Figure 44.

Irrigon Hat. (Rapid R. Stock) Spring Chinook Released in Lookingglass Cr.

1986 - 1987 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0	0	0	0	0
FW Spt & Hat				0	
River Gillnet				0	

Avg. 0.00 % Survival

Figure 45.

The 1986 to 1987 brood Rapid River stock spring chinook reared at Irrigon hatchery and released in the Lookingglass Creek survived at an average rate of 0.00 %.(Figure 45).

The 1985 to 1988 brood Imnaha stock summer steelhead reared at Irrigon hatchery and released in Little Sheep Creek survived at a rate of 0.43 % and contributed primarily to 'the Columbia River freshwater sport and gillnet fisheries (Figure 46).

Umatilla Hatahery

Umatilla Hatchery, constructed in 1990 is located on the Columbia River adjacent to the Irrigon Hatchery. Umatilla Hatchery rears Columbia up, river bright fall chinook salmon and summer steelhead trout. Representative groups of these fish have been coded-wire tagged but no completed recovery data is available at the present time.

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.

The 1982 to 1986 brood Rapid River stock spring chinook reared a Lookingglass hatchery and realeased in Lookingglass Creek survived at an average rate of 0.07 % and contributed primarily to the freshwater sport and Columbia river gillnet fisheries (Figure 47).

The 1904 to 1986 brood Lookingglass stock spring chinook released in the Imnaha river survived at an average rate of 0.06% and contributed to the freshwater sport and Columbia River, sport fisheries (Figure 48)

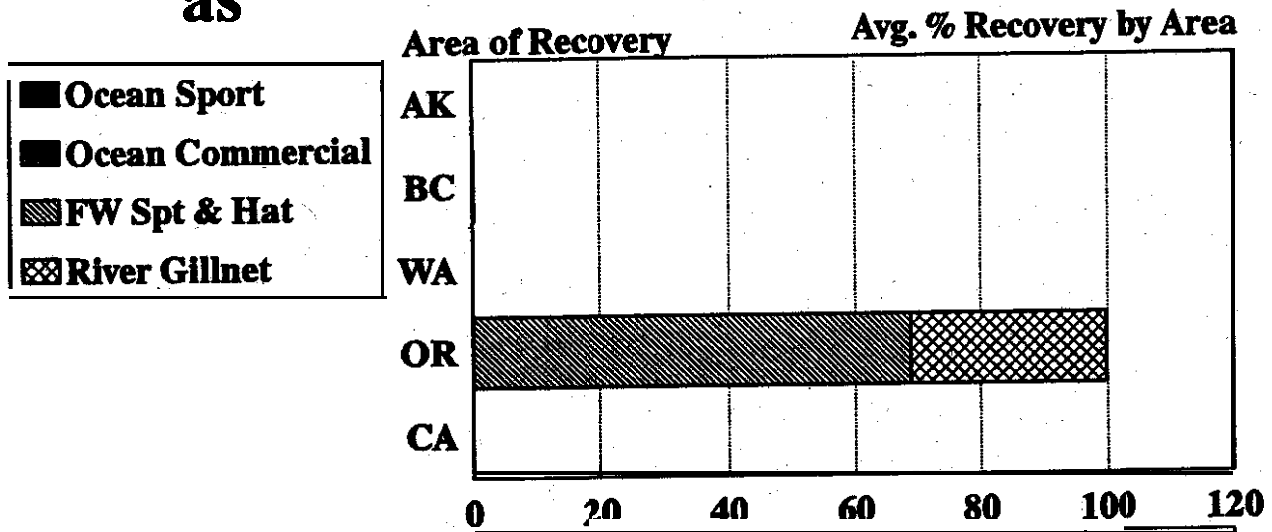
The 1983 to 1987 brood Imnaha stock spring chinook released in the Imnaha river also survived at an average rate of 0.14 % and contributed to the freshwater sport and Columbia River sport fisheries (Figure 49).

The 1986 to 1987 Carson stock spring chinook reared at Lookingglass hatchery and released in the Meacham Creek survived at an average rate of 0.23 % and contributed primarily to the Columbia river freshwater sport and gillnet fisheries (Figure 50).

The 1983 to 1986 brood Carson stock of spring chinook reared at Lookingglass hatchery and released in Big Canyon Creek survived at an average rate of 0.00 % and contributed primariliy to the freshwater sport, gillnet and hatchery return (Figure 51)..

Irrigon (Imnaha Stock) Summer Steelhead Rele ed in Sheep Creek (Grande Ronde) as

1985 - 1988 Brood Year



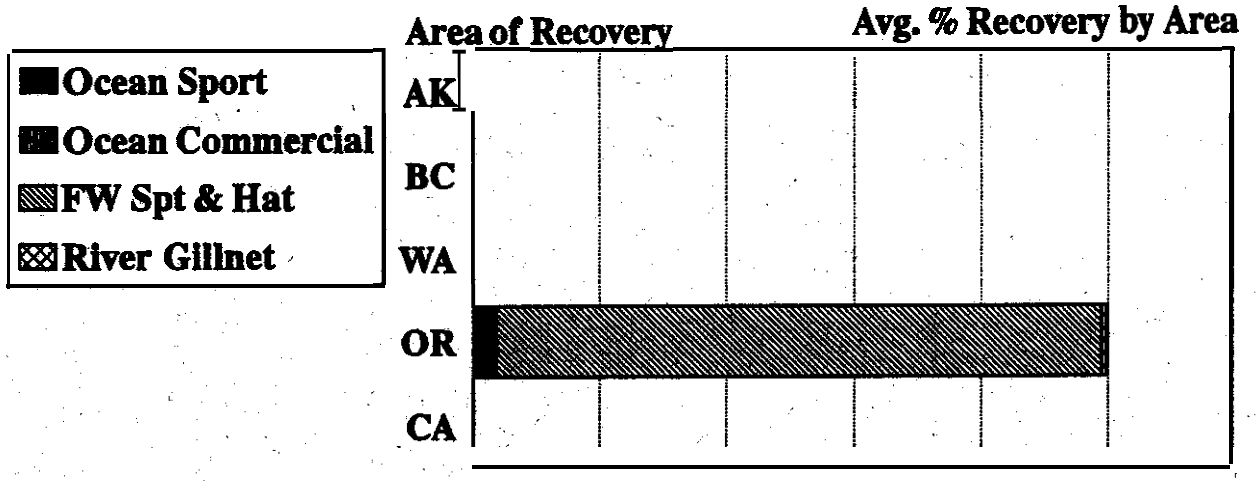
	AK	BC	WA	OR	CA
Ocean Sport	0	0	3	0	0
Ocean Commercial	0	0.2	0	0	0
Spt & Hat				69	
River Gillnet				30.9	

Avg. 0.43 % Survival

Figure 46.

Lookingglass (Rapid R. Stock) Spring Chinook Released in Lookingglass Cr.

1985 - 1987 Brood Year



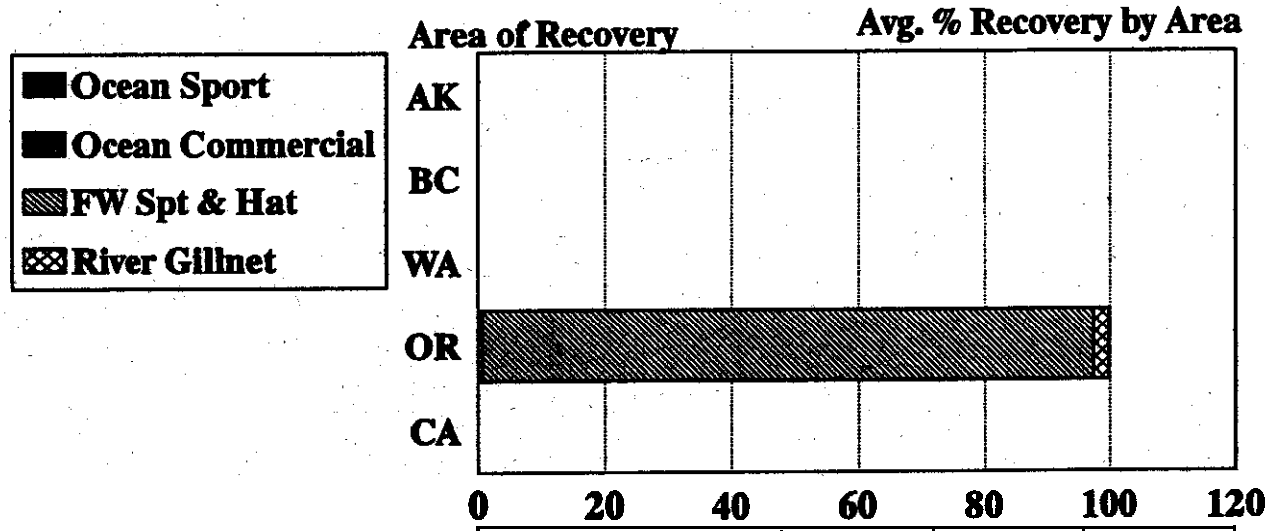
	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	3.7	0.1
Ocean Commercial	0	0	0	0	0
FW Spt & Hat				95.4	
River Gillnet				0.8	

Avg. 0.07 % Survival

Figure 4 7 .

Lookingglass (Lookingglass Stock) Spring Chinook Released in Imnaha R

1984 - 1986 Brood Year



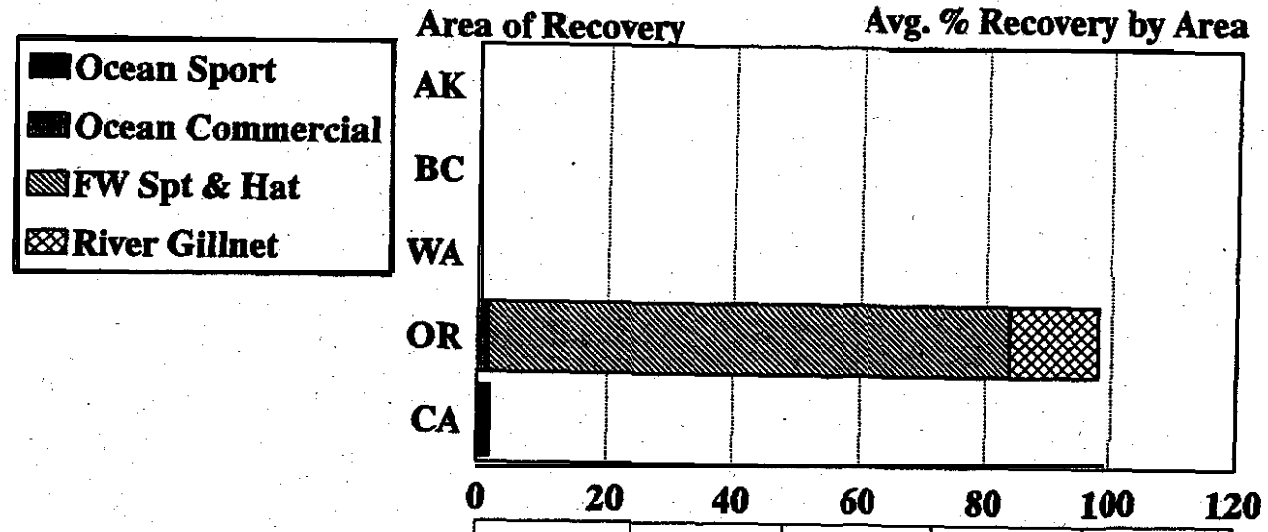
	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0	0	0	0.7	0
FW Spt & Hat				96.8	
River Gillnet				2.5	

Avg. 0.06 % Survival

Figure 48.

Lookingglass (Imnaha Stock) Spring Chinook Released in Imnaha R

1983 - 1987 Brood Year



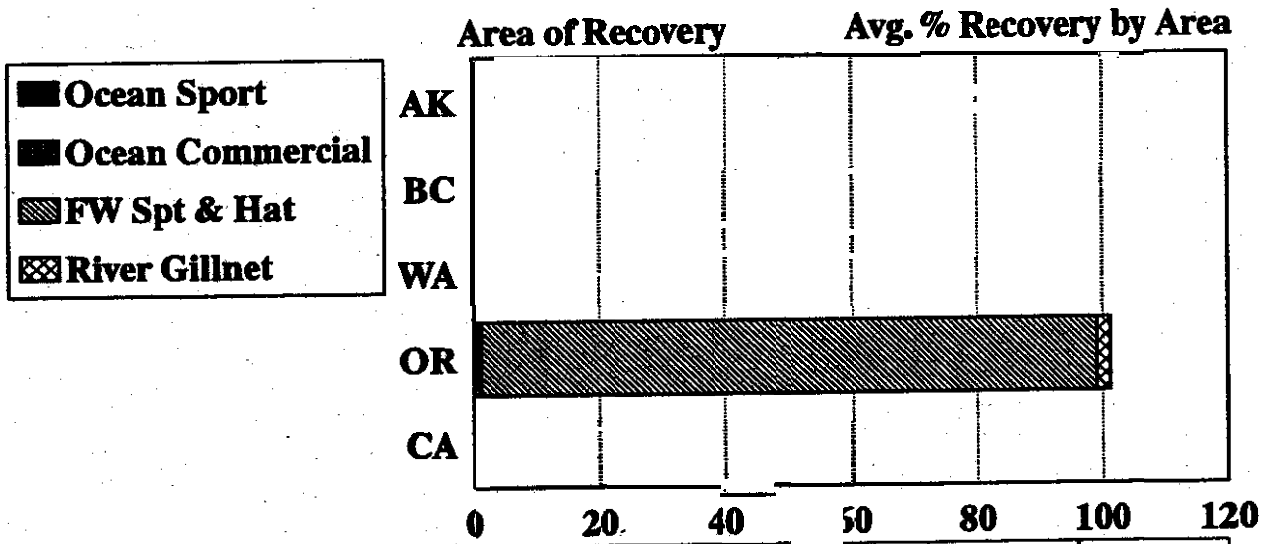
	AK	BC	WA	OR	CA
Ocean Sport	0	Ø	0	Ø	0
Ocean Commercial	0	Ø	0	1.6	2
FW Spt & Hat				82.3	
River Gillnet				14.1	

Avg. 0.14 % Survival

Figure 49.

Carson Spring Chinook (Lookingglass Hat) Released in Meacham Cr.

1986 - 1987 Brood Year



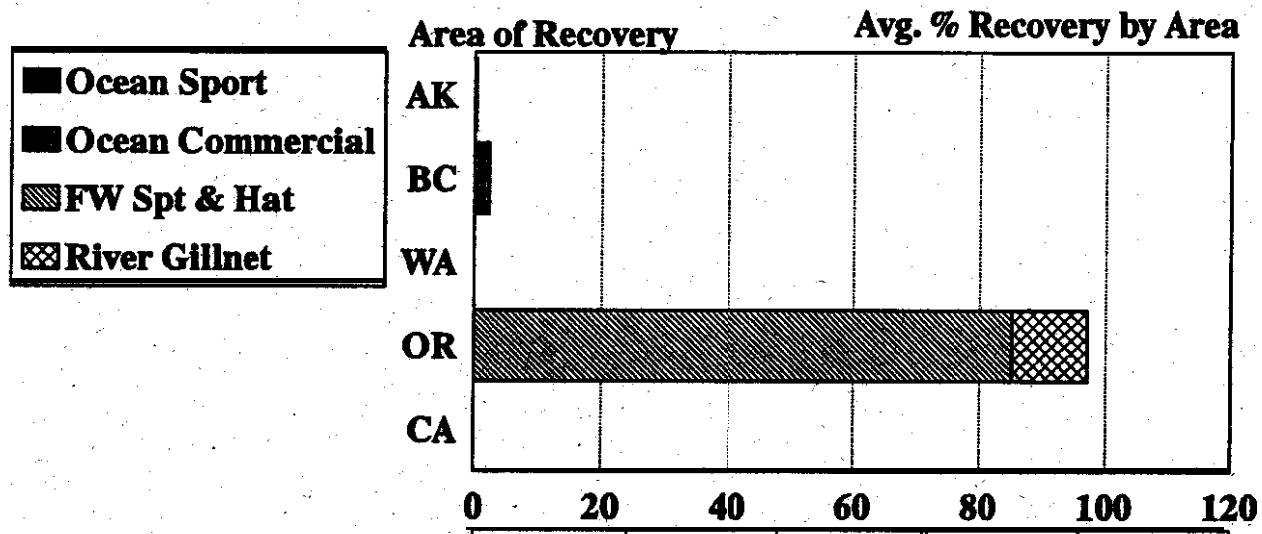
	AK	BC	WA	OR	CA
Ocean Sport	0	0	0.2	0	0
Ocean Commercial		0	0	1.4	0
FW Spt & Hat	0			97.8	
River Gillnet				2.1	

Avg. 0.23 % Survival

Figure 50.

Lookingglass (Carson Stock) Spring Chinook Released in Big Canyon Cr.

1983 - 1985 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0.1	0	0	0	0
Ocean Commercial	0.2	2.5	0	0	0
FW Spt & Hat				85.2	
River Gillnet				12	

Avg. .08 % Survival

Figure 51.

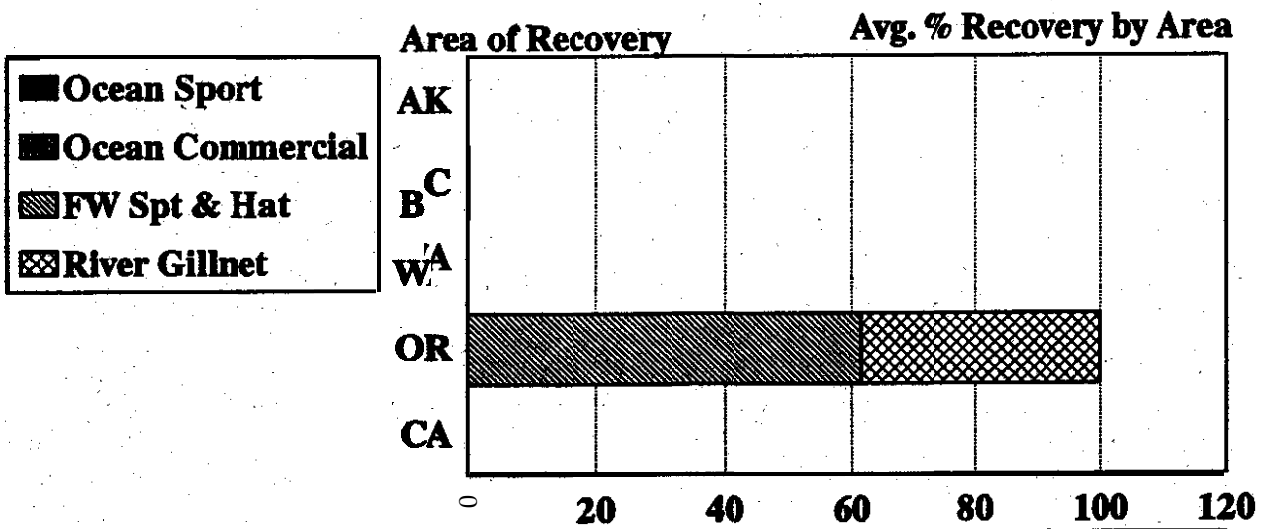
Wallowa Hatchery

Wallowa Hatchery is located on the Wallowa River near Enterprise. The Wallowa Hatchery rears and releases spring chinook salmon, summer steelhead and rainbow trout.

The 1985 to 1988 brood Wallowa stock summer steelhead reared at Irrigon hatchery, acclimated at Wallowa hatchery and released in Spring Creek (Wallowa River) survived at a rate of 0.71 % and contributed primarily to the Columbia River freshwater sport and gillnet fisheries (Figure 52).

Irrigon (Wallowa Stock) Summer Steelhead Released in Spring Creek (Wallowa River)

1985 - 1988 Brood Year



	AK	BC	WA	OR	CA
Ocean Sport	0	0	0	0	0
Ocean Commercial	0	0.2	0	0	0
FW Spt & Hat				61.6	
River Gillnet				38.3	

Avg. 0.71% Survival

Figure 52.

APPENDIX

Appendix Table 1. Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through *Finalized 1992 returns)

Fall Chinook

										Percent Recovery for All Areas											
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Freshwater Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Bonneville	Chf	Tanner Cr	Tanner Cr	1983	321,814	2,604	4,147,076	4,471,494	0.03	0.0	0.0	0.0	34.5	11.2	0.8	0.3	0.3	3.0	49.8	0.0	0.0
Bonneville	Chf	Tanner Cr	Tanner Cr	1984	317,321	8,998	552,982	877,301	2.76	0.0	0.0	2.3	27.0	8.2	10.6	0.5	6.3	20.2	26.6	0.1	0.2
Bonneville	Chf	Tanner Cr	Tanner Cr	1986	421,391	5,200	9,457,656	9,884,249	0.15	0.0	0.0	0.5	14.9	2.2	22.0	0.1	16.5	9.5	34.3	0.0	0.0
Bonneville	Chf	Tanner Cr	Tanner Cr	1987	315,679	3,998	9,785,318	10,104,995	0.02	0.0	0.0	0.4	24.2	2.3	43.6	0.0	0.7	8.1	20.8	0.0	0.0
				Average	344,051	4,700	5,985,759	6,334,510	0.74	0.0	0.0	0.8	25.2	5.5	19.3	0.2	6.0	10.2	32.9	0.0	0.1
Bonneville	Chf	URB	Tanner Cr	1983	306,916	2,969	394,928	704,813	1.97	0.2	9.0	1.5	25.3	3.2	1.9	0.2	3.1	36.1	17.4	0.1	0.0
Bonneville	Chf	URB	Tanner Cr	1984	50,346	194	51,106	101,646	3.52	0.1	3.8	1.3	34.7	2.6	3.3	0.6	1.9	37.4	13.8	0.3	0.0
Bonneville	Chf	URB	Tanner Cr	1985	427,615	7,040	1,407,671	1,842,326	2.62	0.3	10.5	0.2	23.5	1.9	0.8	0.2	0.8	34.7	28.8	0.2	0.0
Bonneville	Chf	URB	Tanner Cr	1986	582,442	4,206	515,406	1,102,058	1.06	0.1	11.4	1.1	24.9	1.3	2.1	0.1	2.9	22.5	33.2	0.1	0.3
Bonneville	Chf	URB	Tanner Cr	1987	183,506	1,163	5,621,188	5,805,859	0.27	0.0	5.8	0.7	14.5	0.9	1.0	0.1	0.0	50.4	26.6	0.0	0.0
				Average	310,165	3,115	1,598,060	1,911,340	1.93	0.1	8.1	1.0	24.6	2.0	1.8	0.2	1.7	36.6	23.6	0.1	0.1
Bonneville	Chf	URB	Umatilla R	1983	296,747	3,436	862,227	1,164,412	0.78	0.2	9.0	0.4	27.3	1.6	1.0	0.2	2.5	53.3	4.5	0.0	0.2
Bonneville	Chf	URB	Umatilla R	1984	237,594	5,939	3,030,639	3,274,172	0.87	0.2	13.9	0.7	23.9	1.2	2.0	0.0	1.6	54.1	2.4	0.0	0.3
Bonneville	Chf	URB	Umatilla R	1985	100,127	1,260	110,119	211,506	2.22	0.5	9.6	2.7	26.7	5.4	2.9	0.5	2.0	36.0	11.6	0.0	0.0
Bonneville	Chf	URB	Meacham Cr	1986	158,960	1,146	40,235	200,341	2.76	0.1	7.8	0.8	27.8	4.1	3.4	1.0	2.2	23.9	29.0	0.2	0.0
Bonneville	Chf	Wash. Brights	Umatilla R	1987	88,408	4,281	3,400	94,089	0.47	0.3	10.6	3.7	26.7	8.0	2.2	0.2	3.9	26.6	15.3	0.0	0.4
				Average	176,367	3,213	808,324	988,904	1.42	0.3	10.2	1.7	26.5	4.1	2.3	0.4	2.4	39.6	12.6	0.0	0.2
Big Creek	Chf	Big Creek	Big Cr	1986	309,516	3,038	8,379,938	8,692,492	0.18	0.0	0.0	0.0	27.6	7.5	25.8	0.0	10.6	2.7	24.7	0.0	1.2
Big Creek	Chf	Big Creek	Big Cr	1987	313,024	4,032	8,534,864	8,851,920	0.05	0.0	0.0	1.7	26.5	26.9	9.1	2.4	3.4	2.2	27.9	0.0	0.0
				Average	311,270	3,535	8,457,401	8,772,206	0.12	0.0	0.0	0.9	27.1	17.2	17.5	1.2	7.0	2.5	26.3	0.0	0.6
Big Creek	Chf	Rogue R	Big Cr	1983	114,492	535	312	115,339	2.45	0.0	0.0	0.0	3.2	5.1	1.6	3.0	36.5	22.6	13.5	0.6	14.0
Big Creek	Chf	Rogue R	Big Cr	1984	98,850	2,768	0	101,618	3.65	0.0	0.0	0.1	2.7	4.1	3.2	1.7	48.9	19.5	11.2	0.2	8.3
Big Creek	Chf	Rogue R	Big Cr	1985	145,544	244	244	146,032	2.04	0.0	0.0	0.3	2.9	2.6	1.2	3.3	55.7	8.9	13.5	0.4	10.9
Big Creek	Chf	Rogue R	Big Cr	1986	156,574	590	1,180	158,344	2.23	0.0	0.0	0.6	2.9	8.6	1.9	3.9	47.1	3.3	25.9	2.0	3.8
Big Creek	Chf	Rogue R	Big Cr	1987	148,571	5,293	0	153,864	2.18	0.0	0.0	0.1	3.2	11.1	2.0	4.6	42.0	2.5	31.2	0.2	3.2
				Average	132,806	1,886	347	135,039	2.51	0.0	0.0	0.2	3.0	6.3	2.0	3.3	46.0	11.4	19.1	0.7	8.0
Irrigon	Chf	URB	Umatilla R	1984	88,396	2,214	116,205	206,815	3.16	0.1	5.1	2.3	36.6	4.1	6.7	0.8	1.6	35.7	7.0	0.0	0.0
Irrigon	Chf	URB	Umatilla R	1985	209,145	4,658	1,815,799	2,029,602	0.49	0.0	10.5	0.9	24.9	1.3	0.4	0.4	1.6	51.1	9.0	0.0	0.0
Irrigon	Chf	Wash. Brights	Umatilla R	1986	122,996	4,589	1,351,245	1,478,830	0.80	0.3	14.5	0.8	28.3	1.4	1.3	0.4	1.3	39.1	11.9	0.5	0.0
Irrigon	Chf	Wash. Brights	Umatilla R	1987	196,285	0	1,666,472	1,666,757	0.07	0.0	20.9	0.0	36.6	1.5	0.0	0.0	0.0	26.1	14.9	0.0	0.0
				Average	154,708	2,865	1,242,930	1,400,501	1.13	0.1	12.8	1.0	31.8	2.1	2.1	0.4	1.1	38.0	10.7	0.1	0.0

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through "Finalized 1992 returns)

										Percent Recovery for All Areas											
																		Freshwater			
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Klaskanine	Chf	Big Creek	Klaskanine R, N Fk	1986	194,857	10,463	3,555,480	3,760,800	0.15	0.0	0.2	0.0	40.7	1.6	13.6	0.2	9.1	31.7	2.1	0.4	0.4
Klaskanine	Chf	Big Creek	Klaskanine R, N Fk	1987	203,546	1,857	3,548,953	3,754,356	0.01	0.0	0.0	2.2	0.0	0.0	34.6	0.0	0.0	50.1	12.9	0.0	0.0
				Average	199,102	6,160	3,552,217	3,757,478	0.08	0.0	0.1	1.1	20.4	0.8	24.2	0.1	4.6	40.9	7.5	0.2	0.2
S F Klask Pd	Chf	Rogue R	Klaskanine R, S Fk	1984	49,936	884	31,057	81,857	7.39	0.0	0.0	0.1	2.3	6.0	2.4	1.5	46.2	28.7	2.7	0.4	12.6
S F Klask Pd	Chf	Rogue R	Klaskanine R, S Fk	1985	30,069	2,848	218,545	251,462	0.80	0.0	0.0	0.0	2.4	0.0	0.8	4.7	55.9	31.6	1.3	1.5	1.7
S F Klask Pd	Chf	Rogue R	Klaskanine R, S Fk	1986	2,760	20	17,220	20,000	0.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	30.0	10.0	0.0	0.0
S F Klask Pd	Chf	Rogue R	Klaskanine R, S Fk	1987	26,481	181	53,128	79,770	2.95	0.0	0.0	0.0	1.5	8.7	3.5	3.1	45.9	28.5	3.9	1.4	3.8
				Average	27,312	973	79,986	108,272	2.68	0.0	0.0	0.0	1.6	3.7	1.7	2.3	51.8	29.2	4.5	0.8	4.5
S F Klask Pd	Chf	Tanner Cr	Klaskanine R, S Fk	1983	108,911	1,080	2,759,106	2,867,097	0.08	0.0	0.0	0.0	32.9	0.0	20.3	0.0	2.5	38.0	6.3	0.0	0.0
S F Klask Pd	Chf	Tanner Cr	Klaskanine R, S Fk	1984	101,415	1,036	2,892,321	2,994,772	1.67	0.1	0.4	4.3	37.1	5.9	10.2	0.3	5.8	33.9	2.2	0.0	0.0
S F Klask Pd	Chf	Tanner Cr	Klaskanine R, S Fk	1985	99,043	5,583	2,904,840	3,009,466	0.11	0.0	0.0	0.0	55.6	4.3	3.7	0.0	3.7	17.6	14.8	0.0	0.0
S F Klask Pd	Chf	Big Creek	Columbia R-1	1986	135,975	6,576	1,199,910	1,342,461	0.07	0.0	0.0	14.0	32.1	4.2	0.7	0.0	8.4	29.9	10.6	0.0	0.0
S F Klask Pd	Chf	Big Creek	Klaskanine R, S Fk	1987	139,660	11,755	2,928,035	3,079,450	0.04	0.0	0.0	0.1	31.0	0.0	11.6	0.0	14.2	42.4	0.6	0.0	0.0
				Average	116,601	5,206	2,536,842	2,658,649	0.39	0.0	0.1	3.7	37.8	2.9	9.3	0.1	6.9	32.4	6.9	0.0	0.0
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
S F Klask Pd	Chf	Tanner Cr	Klaskanine R, S Fk	1983	108,911	1,080	2,759,106	2,867,097	0.08	0.0	0.0	0.0	32.9	0.0	20.3	0.0	2.5	38.0	6.3	0.0	0.0
S F Klask Pd	Chf	Tanner Cr	Klaskanine R, S Fk	1984	101,415	1,036	2,892,321	2,994,772	1.67	0.1	0.4	4.3	37.1	5.9	10.2	0.3	5.8	33.9	2.2	0.0	0.0
S F Klask Pd	Chf	Tanner Cr	Klaskanine R, S Fk	1985	99,043	5,583	2,904,840	3,009,466	0.11	0.0	0.0	0.0	55.6	4.3	3.7	0.0	3.7	17.6	14.8	0.0	0.0
S F Klask Pd	Chf	Big Creek	Columbia R-1	1986	135,975	6,576	1,199,910	1,342,461	0.07	0.0	0.0	14.0	32.1	4.2	0.7	0.0	8.4	29.9	10.6	0.0	0.0
S F Klask Pd	Chf	Big Creek	Klaskanine R, S Fk	1987	139,660	11,755	2,928,035	3,079,450	0.04	0.0	0.0	0.1	31.0	0.0	11.6	0.0	14.2	42.4	0.6	0.0	0.0
				Average	116,601	5,206	2,536,842	2,658,649	0.39	0.0	0.1	3.7	37.8	2.9	9.3	0.1	6.9	32.4	6.9	0.0	0.0
Stayton Pond	Chf	Tanner Cr	Willamette R	1983	148,072	7,678	5,014,857	5,170,607	0.22	0.0	0.0	0.0	28.9	8.6	14.0	0.0	9.1	5.4	29.5	0.0	4.8
Stayton Pond	Chf	M Willamette	Willamette R & Tr	1984	180,582	13,543	4,340,069	4,534,194	3.41	0.0	0.2	3.0	31.0	7.1	10.0	0.5	5.4	18.1	24.0	0.2	0.5
Stayton Pond	Chf	Tanner Cr	Willamette R & Tr	1985	183,215	12,040	4,738,291	4,933,546	0.19	0.0	0.0	0.0	27.2	7.6	18.3	0.0	5.3	8.2	33.5	0.0	0.0
Stayton Pond	Chf	Tanner Cr	Willamette R & Tr	1986	199,944	1,733	5,570,245	5,786,922	0.09	0.0	0.0	0.0	11.9	3.6	23.6	0.0	13.7	0.0	45.8	1.2	0.0
Stayton Pond	Chf	Tanner Cr	Willamette R & Tr	1987	193,340	5,149	4,859,788	5,058,277	0.13	0.0	0.0	1.2	28.1	6.0	10.3	1.7	3.6	0.0	49.1	0.0	0.0
				Average	180,427	8,029	4,904,654	5,093,109	0.81	0.0	0.0	0.8	25.4	6.6	15.3	0.4	7.4	6.3	36.4	0.3	1.0

Appendix Table 1 (Cont.). Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through 'Finalized 1992 returns)

Spring Chinook

										Percent Recovery for All Areas											
																		Freshwater			
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Bonneville	Chs	Carson	Hood R, W Fk	1986	50,744	1,015	98,180	149,939	0.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	6.1	91.2	0.0	0.0
Bonneville	Chs	Lookingglass Cr	Hood R, W Fk	1987	52,248	454	81,615	134,317	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
				Average																	
Oxbow	Chs	Carson	Lookingglass Cr	1983	70,213	3,202	75,129	148,544	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	62.2	0.0	25.2
Bonneville	Chs	Carson	Lookingglass Cr	1984	145,231	9,038	248	154,517	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	98.6	0.0	0.0
				Average	107,722	6,120	37,689	151,531	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	80.5	0.0	12.6
Bonneville	Chs	Carson	Meacham Cr	1986	156,649	4,100	47,360	208,109	0.31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	95.9	0.0	0.0
Bonneville	Chs	Lookingglass Cr	Meacham Cr	1987	233,709	1,465	2,705	237,879	0.15	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	99.6	0.0	0.0
				Average																	
Clackamas	Chs	Clackamas R E	Clackamas R	1984	57,522	3,264	388,520	449,326	0.28	0.0	5.7	2.4	10.4	0.0	0.0	0.0	0.0	2.6	78.9	0.0	0.0
Clackamas	Chs	Clackamas R E	Clackamas R	1985	76,409	4,789	694,890	778,088	0.07	0.0	22.9	0.0	1.2	0.0	0.0	0.0	0.0	15.9	60.1	0.0	0.0
Clackamas	Chs	Clackamas R E	Clackamas R	1986	69,409	2,496	0	71,907	0.51	0.0	8.5	0.3	2.6	0.0	0.6	0.0	0.0	13.3	74.6	0.0	0.0
Clackamas	Chs	Clackamas R E	Clackamas R	1987	61,871	1,547	524	126,942	0.85	0.0	10.9	0.0	2.4	0.0	0.0	0.0	0.0	2.9	83.8	0.0	0.0
				Average	66,803	3,030	537,234	807,088	0.43	0.0	12.0	0.7	4.2	0.0	0.2	0.0	0.0	8.7	74.4	0.0	0.0
Clackamas	Chs	S Santiam R	Clackamas R	1986	15,553	285	0	15,838	2.30	0.0	11.0	0.0	4.6	1.7	0.0	0.0	0.0	14.1	68.4	0.0	0.0
Clackamas	Chs	M Willamette	Clackamas R	1987	15,417	632	287,904	303,953	1.01	0.6	11.0	0.0	2.6	0.0	0.0	0.0	0.0	5.8	79.6	0.0	0.0
				Average	15,485																
Lookingglass	Chs	Carson	Big Canyon Cr	1983	494,583	25,299	545,141	1,055,023	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.7	74.3	0.0	0.0
Lookingglass	Chs	Carson	Lookingglass Cr	1984	351,859	10,656	362,845	715,360	0.05	0.2	0.5	0.0	7.6	0.0	0.0	0.0	0.0	6.6	85.1	0.0	0.0
Lookingglass	Chs	Carson	Big Canyon Cr	1985	78,857	1,717	3,720	84,294	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	96.3	0.0	0.0
				Average	305,100	12,557	300,569	618,226	0.08	0.1	0.2	0.0	2.5	0.0	0.0	0.0	0.0	12.0	85.2	0.0	0.0
Lookingglass	Chs	Imnaha R	Imnaha R	1983	108,952	2,730	4,088	115,770	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	4.9	77.2	0.0	9.9
Lookingglass	Chs	Imnaha R	Imnaha R	1984	34,563	441	260	35,264	0.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.4	63.7	0.0	0.0
Lookingglass	Chs	Imnaha R	Lookingglass Cr	1985	105,354	1,708	16,471	123,533	0.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.6	72.4	0.0	0.0
Lookingglass	Chs	Imnaha R	Imnaha R	1986	186,350	11,331	1,825	199,506	0.17	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	1.6	98.2	0.0	0.0
Lookingglass	Chs	Imnaha R	Imnaha R	1987	134,591	7,447	282	142,320	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
				Average	113,982	4,731	4,585	123,279	0.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	14.1	82.3	0.0	2.0

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through *Finalized 1992 returns)

										Percent Recovery for All Areas											
																		Freshwater			
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Lookingglass	Chs	Lookingglass Cr	Lookingglass Cr	1984	41,973	107	5,628	47,708	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Lookingglass	Chs	Lookingglass Cr	Lookingglass Cr	1985	401,705	7,830	172,557	582,092	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	7.8	90.3	0.0	0.0
Lookingglass	Chs	Lookingglass Cr	Lookingglass Cr	1986	86,213	870	13,835	100,918	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
				Average	176,630	2,936	64,007	243,573	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.5	96.8	0.0	0.0
Lookingglass	Chs	Rapid R (Idaho)	Lookingglass Cr	1985	99,742	494	292,880	393,116	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1	0.0	0.0
Lookingglass	Chs	Rapid R (Idaho)	Lookingglass Cr	1986	325,705	9,127	3,327	338,159	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	97.3	0.2	0.0
Lookingglass	Chs	Rapid R (Idaho)	Lookingglass Cr	1987	342,199	3,937	13,538	359,674	0.04	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	0.0	88.9	0.0	0.0
				Average	255,882	4,519	103,248	363,650	0.07	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.8	95.4	0.1	0.0
Irrigon	Chs	Rapid R (Idaho)	Lookingglass Cr	1986	122,908	1,770	49,296	173,974	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigon	Chs	Rapid R (Idaho)	Lookingglass Cr	1987	125,924	2,869	12,289	141,082	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				Average	124,415	2,320	30,794	157,528	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marion Forks	Chs	N Santiam R	Santiam R & N Fk	1984	31,494	545	161,166	193,205	1.33	1.0	18.9	0.0	18.2	0.0	1.8	0.0	0.0	18.6	41.5	0.0	0.0
Marion Forks	Chs	N Santiam R	Santiam R & N Fk	1985	31,381	1,105	58,960	91,446	0.91	0.5	0.0	0.0	4.1	0.9	3.6	0.0	0.0	18.8	68.1	0.0	3.9
Marion Forks	Chs	N Santiam R	Santiam R & N Fk	1986	26,055	4,260	159	30,474	1.83	0.2	10.6	0.8	7.0	0.6	1.7	0.0	0.0	12.0	66.7	0.0	0.0
Marion Forks	Chs	N Santiam R	Santiam R & N Fk	1987	30,076	182	0	30,258	1.41	0.2	13.7	0.0	2.6	0.0	1.9	0.0	0.0	6.4	74.9	0.0	0.0
				Average	29,752	1,523	55,071	86,346	1.37	0.5	10.9	0.2	8.0	0.4	2.3	0.0	0.0	14.0	62.6	0.0	1.0
Marion Forks	Chs	S Santiam R	Santiam R & N Fk	1984	63,288	723	50,783	114,794	1.10	0.1	6.5	0.6	35.7	0.6	3.0	0.0	0.0	8.0	45.2	0.3	0.0
Marion Forks	Chs	M Willamette	Santiam R & N Fk	1983	103,118	3,598	336,060	442,776	1.04	0.2	16.7	1.3	18.0	0.3	1.5	0.1	0.6	14.0	47.3	0.0	0.0
Marion Forks	Chs	N Santiam R	Santiam R, S Fk	1985	32,173	941	59,117	92,231	0.33	0.0	3.7	0.0	0.0	0.0	0.0	0.0	2.7	27.6	66.0	0.0	0.0
Marion Forks	Chs	N Santiam R	Santiam R, S Fk	1986	25,600	5,561	0	31,161	1.92	0.0	9.0	0.8	3.9	0.0	0.2	0.0	0.0	9.6	76.5	0.0	0.0
Marion Forks	Chs	N Santiam R	Santiam R, S Fk	1987	29,305	446	0	29,751	1.43	0.0	10.3	0.0	3.6	0.5	4.5	0.0	0.0	5.0	75.6	0.0	0.0
				Average	29,026	2,323	19,706	51,054	1.23	0.0	7.7	0.3	2.6	0.2	1.6	0.0	0.9	14.1	72.6	0.0	0.0
McKenzie	Chs	McKenzie R	McKenzie R	1984	56,906	5,169	241	62,316	0.98	0.2	12.1	0.0	10.4	0.0	1.6	0.0	0.0	9.6	66.2	0.0	0.0
McKenzie	Chs	McKenzie R	McKenzie R	1985	58,030	4,244	330,223	392,497	1.11	0.2	2.6	0.0	7.6	0.3	1.0	0.0	0.0	26.7	61.6	0.0	0.0
McKenzie	Chs	McKenzie R	McKenzie R	1986	58,352	3,098	0	61,450	1.56	0.1	11.7	0.3	3.0	0.0	0.5	0.0	0.0	14.2	70.2	0.0	0.0
McKenzie	Chs	McKenzie R	McKenzie R	1987	61,084	1,597	658,487	721,168	1.10	0.3	6.8	0.0	5.5	0.0	0.2	0.1	0.0	8.9	78.3	0.0	0.0
				Average	58,593	3,527	247,238	309,358	1.19	0.2	8.3	0.1	6.6	0.1	0.8	0.0	0.0	14.9	69.1	0.0	0.0

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through "Finalized 1992 returns)

										Percent Recovery for All Areas											
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Freshwater Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Round Butte	Chs	Deschutes R	Deschutes R	1983	269,475	8,560	1,204	277,239	0.79	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.2	1.3	97.7	0.0	0.2
Round Butte	Chs	Deschutes R	Deschutes R	1984	125,615	2,835	433	128,883	1.40	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.3	1.4	97.8	0.0	0.0
Round Butte	Chs	Deschutes R	Deschutes R	1985	112,806	4,267	148,897	265,862	2.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.0	98.6	0.0	0.0
Round Butte	Chs	Deschutes R	Deschutes R	1986	109,809	5,533	150	115,492	2.06	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.2	99.7	0.0	0.0
Round Butte	Chs	Deschutes R	Deschutes R	1987	112,843	6,210	0	119,053	1.42	0.0	0.0	0.0	0.5	0.0	0.9	0.0	0.0	0.6	98.0	0.0	0.0
				Average	146,126	5,061	30,097	181,306	1.55	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.2	0.9	98.4	0.0	0.0
South Santiam	Chs	S Santiam R	Santiam R, S Fk	1984	54,566	3,123	116,750	174,439	0.80	0.1	9.3	1.3	13.2	0.0	2.0	0.0	0.0	15.2	59.0	0.0	0.0
South Santiam	Chs	S Santiam R	Santiam R, S Fk	1985	25,956	106	119,373	145,435	1.38	0.0	8.3	3.9	8.1	0.0	0.6	0.6	0.0	14.9	63.7	0.0	0.0
South Santiam	Chs	S Santiam R	Willamette R	1986	23,728	1,647	0	25,375	1.10	0.0	9.7	0.0	5.1	0.0	2.0	0.0	1.2	20.7	61.4	0.0	0.0
South Santiam	Chs	S Santiam R	Santiam R, S Fk	1987	49,818	560	86,796	137,174	1.03	0.0	17.6	0.0	8.0	0.1	0.1	0.0	0.2	14.0	62.0	0.0	0.0
				Average	38,517	1,359	80,730	120,606	1.06	0.0	11.2	1.3	8.1	0.0	1.2	0.2	0.4	16.2	61.5	0.0	0.0

						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Willamette	Chs	M Willamette	Willamette R, M Fk	1984	105,496	3,084	636,877	745,457	0.97	0.0	5.3	0.0	8.7	0.1	1.8	0.0	0.0	27.8	58.3	0.0	0.0
Willamette	Chs	M Willamette	Willamette R, M	1985	165,003	4,707	1,137,547	1,307,257	2.06	0.1	4.7	0.0	3.4	0.2	0.0	0.4	0.0	18.3	72.9	0.0	0.0
Willamette	Chs	M Willamette	Willamette R, M	1986	158,918	7,682	7,970	174,570	1.23	0.0	5.4	0.1	3.4	0.4	1.5	0.0	0.0	7.8	81.0	0.4	0.0
Willamette	Chs	M Willamette	Willamette R, M	1987	180,016	2,761	887,285	1,070,042	0.69	0.1	5.6	0.4	2.3	0.2	0.2	0.0	0.1	3.5	87.7	0.0	0.0
				Average	152,358	4,559	667,415	824,332	1.24	0.1	5.3	0.1	4.0	0.2	0.9	0.1	0.0	14.4	75.0	0.1	0.0
Bonneville	Chsu	URB	Tanner Cr	1986	100,456	2,311	328,451	431,218	0.22	0.9	14.5	4.2	18.9	0.3	1.5	0.0	2.6	28.1	29.0	0.0	0.0

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through "Finalized 1992 returns)

Coho

										Percent Recovery for All Areas											
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Freshwater Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Bonneville	Coho	Tanner Cr	Tanner Cr	1985	104,396	2,573	1,849,151	1,956,122	3.02	0.0	0.0	0.0	0.6	7.8	0.1	12.6	31.7	23.2	20.0	2.1	1.7
Bonneville	Coho	Tanner Cr	Tanner Cr	1986	78,934	0	1,805,149	1,884,083	6.91	0.0	0.0	0.0	2.7	10.5	1.9	12.4	20.9	20.2	29.5	1.0	0.8
Bonneville	Coho	Tanner Cr	Tanner Cr	1987	83,194	1,415	1,674,393	1,759,002	1.65	0.0	0.0	0.0	5.9	17.3	4.1	14.7	15.8	8.2	28.7	2.9	4.2
Bonneville	Coho	Tanner Cr	Tanner Cr	1988	76,489	2,742	1,570,942	1,650,173	3.11	0.0	0.0	0.0	1.7	13.7	0.8	11.9	13.2	22.5	31.9	1.8	2.6
Bonneville	Coho	Tanner Cr	Tanner Cr	1989	69,363	453	1,654,589	1,724,405	2.05	0.0	0.0	0.0	0.9	18.4	1.2	25.4	5.9	2.3	45.8	0.1	0.0
				Average	82,476	1,437	1,710,845	1,794,757	3.35	0.0	0.0	0.0	2.4	13.5	1.8	15.4	17.5	14.9	31.2	1.8	1.9
Big Creek	Coho	Big Creek	Big Cr	1985	76,521	2,499	363,471	442,491	2.72	0.0	0.0	0.0	0.1	5.1	0.2	11.4	38.6	29.7	11.8	1.9	1.2
Big Creek	Coho	Big Creek	Big Cr	1986	70,091	1,785	517,246	589,122	8.10	0.0	0.1	0.0	2.7	8.4	1.8	17.6	22.9	21.5	21.2	2.3	1.5
Big Creek	Coho	Big Creek	Big Cr	1987	100,128	1,297	484,641	586,064	2.40	0.0	0.0	0.0	4.4	19.4	2.3	19.5	15.5	6.3	29.4	1.8	1.4
Big Creek	Coho	Big Creek	Big Cr	1988	108,636	2,100	523,697	634,433	4.15	0.0	0.0	0.1	2.0	20.2	1.1	20.6	14.6	10.9	27.4	1.9	1.2
Big Creek	Coho	Big Creek	Big Cr	1989	101,837	3,110	529,835	634,782	2.82	0.0	0.0	0.0	0.5	10.9	0.1	31.4	12.0	5.4	38.7	0.4	0.5
				Average	91,442	2,158	483,778	577,378	4.04	0.0	0.0	0.0	1.9	12.8	1.1	20.1	20.7	14.8	25.7	1.7	1.2
Cascade	Coho	Tanner Cr	Umatilla R	1985	60,059	2,879	98,951	161,889	1.60	0.0	0.0	0.0	3.3	9.3	0.0	12.7	35.2	26.7	6.7	3.2	2.9
Cascade	Coho	Tanner Cr	Umatilla R	1986	56,068	5,246	140,151	203,465	4.15	0.0	0.0	0.3	3.9	12.4	3.9	15.4	25.0	17.8	17.2	2.4	1.6
Cascade	Coho	Tanner Cr	Umatilla R	1987	60,217	2,672	150,380	233,269	0.87	0.0	0.0	0.0	1.6	11.9	6.0	16.0	16.6	5.3	20.7	7.4	11.9
Cascade	Coho	Tanner Cr	Umatilla R	1988	82,140	1,304	703,188	786,632	3.14	0.0	0.0	0.0	1.9	17.0	1.4	15.2	13.0	25.2	18.2	4.3	3.8
Cascade	Coho	Tanner Cr	Umatilla R	1989	75,329	3,319	830,778	909,426	0.16	0.0	0.0	0.0	0.0	22.3	0.7	27.4	3.4	16.7	29.5	0.0	0.0
				Average	71,163	3,084	384,690	458,936	1.96	0.0	0.0	0.1	2.2	14.6	2.4	17.7	16.7	18.3	18.5	3.5	4.0
Cascade	Coho	Tanner Cr	Yakima R, Lower	1986	66,596	3,467	110,885	180,946	1.56	0.0	0.0	0.6	6.0	17.2	2.6	17.2	31.0	16.9	2.3	3.2	0.6
Cascade	Coho	Tanner Cr	Yakima R, Lower	1987	81,518	685	136,560	218,763	0.93	0.0	0.0	0.0	2.9	22.6	8.7	24.4	13.1	7.3	7.9	6.5	6.5
Cascade	Coho	Tanner Cr	Yakima R, Lower	1988	81,531	1,304	562,655	645,490	2.02	0.0	0.0	0.0	0.4	20.6	2.3	16.2	14.2	23.7	14.4	4.2	3.7
Cascade	Coho	Tanner Cr	Yakima R, Lower	1989	77,932	1,015	611,484	690,431	0.15	0.0	0.0	0.0	1.6	24.6	0.0	30.8	10.3	10.4	22.4	0.0	0.0
				Average	76,894	1,616	355,396	433,906	1.17	0.0	0.0	0.2	2.7	21.3	3.5	22.2	17.2	15.1	11.8	3.5	2.7
Eagle Cr NFH	Coho	Clackamas R E	Eagle Creek	1988	25,119	0	378,713	403,832	2.44	0.0	0.0	0.0	0.7	15.2	2.1	14.3	18.3	11.2	24.2	7.9	8.1
Eagle Cr NFH	Coho	Clackamas R E	Eagle Creek	1989	55,583	707	1,133,100	1,189,400	0.94	0.0	0.0	0.6	1.4	15.9	0.0	25.4	8.8	4.3	41.6	0.0	2.1
				Average	40,356	354	755,907	796,616	1.69	0.0	0.0	0.3	1.1	15.6	1.1	19.9	12.6	7.8	32.9	4.0	5.1
Eagle Cr NFH	Coho	Sandy R	Eagle Creek	1988	25,100	0	583,861	608,961	5.48	0.0	0.0	0.0	2.8	21.6	1.5	14.4	10.9	12.8	27.1	4.5	4.4

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through "Finalized 1992 returns)

										Percent Recovery for All Areas											
																		Freshwater			
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Klaskanine	Coho	Klaskanine R	Klaskanine R, N Fk	1985	31,600	439	1,111,614	1,143,653	8.55	0.0	0.0	0.0	1.7	5.6	0.0	11.4	33.0	37.2	5.0	1.3	4.7
Klaskanine	Coho	Klaskanine R	Klaskanine R, N Fk	1986	32,307	0	807,451	839,758	4.38	0.0	0.0	0.5	6.1	9.6	0.0	12.8	24.2	32.1	7.2	4.7	2.8
Klaskanine	Coho	Klaskanine R	Klaskanine R, N Fk	1987	31,361	93	1,062,396	1,093,870	2.54	0.0	0.0	0.0	3.3	11.6	1.7	20.2	12.5	31.9	4.9	6.0	7.9
Klaskanine	Coho	Klaskanine R	Klaskanine R, N Fk	1988	32,091	169	1,362,297	1,394,557	4.79	0.0	0.0	0.3	1.9	14.1	1.9	12.8	10.9	34.4	14.7	5.2	3.7
Klaskanine	Coho	Klaskanine R	Klaskanine R, N Fk	1989	30,159	200	1,226,538	1,256,897	1.57	0.0	0.0	0.0	2.2	8.5	0.9	28.8	8.1	27.9	21.6	2.0	0.0
				Average	31,506	180	1,114,459	1,146,147	4.37	0.0	0.0	0.2	3.0	9.9	0.9	17.2	17.7	32.7	10.7	3.8	3.8
Klaskanine	Coho	Tanner Cr	Klaskanine R, N Fk	1985	54,976	1,461	470,006	526,443	5.47	0.0	0.0	0.0	0.6	8.3	0.0	11.6	31.1	40.3	4.2	1.8	2.1
S Fk Klask Pd	Coho	Big Creek	Tucker Cr	1988	25,223	515	113,243	138,981	3.12	0.0	0.6	0.0	2.7	10.1	1.1	21.5	17.0	35.8	4.7	4.5	2.2
Eagle Cr NFH	Coho	Clackamas R E	Youngs R	1988	47,706	2,420	338,352	388,477	8.14	0.0	0.0	0.0	1.4	13.9	1.6	10.0	7.9	50.2	7.2	3.8	3.9
Eagle Cr NFH	Coho	Clackamas R E	Youngs R	1989	109,918	2,390	2,024,753	2,137,061	1.24	0.0	0.0	0.0	2.3	15.8	1.0	26.4	7.5	40.2	5.9	0.8	0.0
				Average	78,812	2,405	1,181,553	1,262,769	4.69	0.0	0.0	0.0	1.9	14.9	1.3	18.2	7.7	45.2	6.6	2.3	2.0
Eagle Cr NFH	Coho	Sandy R	Klaskanine R	1987	25,701	1,447	285,177	312,325	1.56	0.0	0.0	0.0	4.5	19.7	2.5	16.5	15.7	34.2	2.2	1.0	3.7
S Fk Klask Pd	Coho	Klaskanine	Klaskanine R, S Fk	1988	27,126	84	752,130	779,320	5.73	0.0	0.0	0.6	2.3	11.7	0.6	16.4	10.9	36.7	13.4	3.8	3.7
				Average	26,414	766	518,654	545,823	3.65	0.0	0.0	0.3	3.4	15.7	1.6	16.5	13.3	35.5	7.8	2.4	3.7
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
S Fk Klask Pd	Coho	Sandy R	Youngs R	1987	26,657	202	125,627	154,486	2.96	0.0	0.0	0.5	5.5	10.4	3.5	18.5	10.5	43.7	1.9	4.6	0.9
S Fk Klask Pd	Coho	Sandy R	Klaskanine R, S Fk	1989	26,441	610	757,851	785,102	0.53	0.0	0.0	0.0	0.0	20.6	1.4	32.6	5.7	22.0	17.7	0.0	0.0
				Average	27,549	506	441,739	469,794	1.76	0.0	0.0	0.3	2.8	15.5	2.5	25.6	8.1	32.9	9.8	2.3	0.5
S Fk Klask Pd	Coho	Tanner Cr	Klaskanine R, S Fk	1987	26,369	114	248,517	275,000	6.99	0.0	0.0	0.0	2.5	15.2	1.3	17.0	16.6	25.8	8.2	5.1	8.3
South Santiam	Coho	Clackamas R L	Collawash R	1985	36,354	321	55	36,730	0.67	0.0	0.0	0.0	3.7	2.1	1.8	23.1	40.5	24.0	1.0	2.2	1.6
South Santiam	Coho	Clackamas R L	Collawash R	1986	29,547	2,168	401	32,116	1.07	0.0	0.0	0.0	6.9	6.9	0.0	20.2	33.4	22.4	0.9	4.4	4.7
Eagle Cr NFH	Coho	Clackamas R L	Collawash R	1987	15,395	1,315	90	16,800	0.38	0.0	0.0	0.0	0.0	13.6	0.0	44.8	32.8	0.0	0.0	8.6	0.0
				Average	27,099	1,266	182	28,549	0.77	0.0	0.0	0.0	3.5	7.6	0.6	29.4	35.6	15.5	0.6	5.1	2.1

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through "Finalized 1992 returns)

										Percent Recovery for All Areas											
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Freshwater Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Sandy	Coho	Sandy R	Cedar Cr (Sandy R)	1985	404,526	10,805	474,355	889,686	6.24	0.0	0.0	0.0	1.5	8.6	0.4	11.8	32.3	19.5	23.5	1.2	1.6
Sandy	Coho	Sandy R	Cedar Cr (Sandy R)	1986	237,559	11,765	757,465	1,006,809	8.82	0.0	0.0	0.1	2.5	9.4	2.0	12.8	22.4	23.3	25.9	1.2	0.6
Sandy	Coho	Sandy R	Cedar Cr (Sandy R)	1987	134,253	2,034	924,257	1,060,544	2.35	0.0	0.0	0.0	9.8	17.6	2.3	20.4	15.0	4.9	24.7	2.1	3.1
Sandy	Coho	Sandy R	Cedar Cr (Sandy R)	1988	180,411	8,913	766,028	955,352	4.10	0.0	0.0	0.0	2.2	15.9	1.4	14.0	18.1	12.2	33.8	1.4	1.1
Sandy	Coho	Sandy R	Cedar Cr (Sandy R)	1989	209,696	10,535	235,828	456,061	3.08	0.0	0.0	0.1	1.6	12.5	0.3	28.3	7.3	6.7	42.9	0.3	0.0
				Average	233,289	8,810	631,591	873,690	4.92	0.0	0.0	0.0	3.5	12.8	1.3	17.4	19.0	13.3	30.2	1.2	1.3
Trojan Pond	Coho	Sandy R	Columbia R-1	1989	27,206	834	92,615	120,655	0.20	0.0	0.0	0.0	0.0	36.4	0.0	34.5	16.4	10.9	1.8	0.0	0.0
Wahkeena Pd	Coho	Tanner Cr	Wahkeena Pond	1985	30,622	735	66,975	98,532	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WahkeenaPd	Coho	Tanner Cr	Wahkeena Pond	1986	32,132	477	31,566	64,175	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WahkeenaPd	Coho	Tanner Cr	Wahkeena Pond	1987	28,944	145	570,909	599,998	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WahkeenaPd	Coho	Sandy R	Wahkeena Pond	1988	13,117	184	1,039,765	1,053,066	6.61	0.0	0.0	0.0	0.5	16.5	1.0	5.9	4.7	36.5	27.5	3.2	4.2
Wahkeena Pd	Coho	Tanner Cr	Wahkeena Pond	1989	29,975	1,465	1,068,804	1,100,244	0.02	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	33.4	0.0
				Average	28,998	601	555,604	583,203	1.33	0.0	0.0	0.0	0.1	3.3	6.9	1.2	0.9	7.3	12.2	7.3	0.8
Summer Steelhead																					
Irrigon	STS	Imnaha R	Sheep Cr (Grande Ronde)	1985	54,290	576	60,530	115,396	0.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.1	65.9	0.0	0.0
Irrigon	STS	Imnaha R	Sheep Cr (Grande Ronde)	1986	47,836	3,461	42,441	93,738	0.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.8	60.2	0.0	0.0
Irrigon	STS	Imnaha R	Sheep Cr (Grande Ronde)	1987	54,874	741	191,379	246,994	0.55	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	21.0	78.4	0.0	0.0
Irrigon	STS	Imnaha R	Sheep Cr (Grande Ronde)	1988	54,696	1,078	193,684	249,458	0.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	71.5	0.0	0.0
				Average	52,924	1,464	122,009	176,397	0.43	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	30.9	69.0	0.0	0.0
Irrigon	STS	Wallowa R	Spring Cr (Wallowa R)	1985	107,435	7,129	79,988	194,552	1.40	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	36.5	63.3	0.0	0.0
Irrigon	STS	Wallowa R	Spring Cr (Wallowa R)	1986	196,485	4,632	388,001	589,118	0.79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.4	47.5	0.0	0.0
Irrigon	STS	Wallowa R	Spring Cr (Wallowa R)	1987	158,709	2,875	360,841	522,425	0.55	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	34.4	65.1	0.0	0.0
Irrigon	STS	Wallowa R	Spring Cr (Wallowa R)	1988	157,015	5,225	388,636	550,876	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.7	70.4	0.0	0.0
				Average	155,411	4,965	303,867	464,243	0.71	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	38.3	61.6	0.0	0.0
Oak Springs	STS	Umatilla R	Umatilla R	1987	58,067	885	2,554	61,306	0.54	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	24.4	75.1	0.0	0.0
Oak Springs	STS	Umatilla R	Umatilla R	1988	52,726	6,131	581	59,438	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
				Average	55,397	3,408	1,568	60,372	0.28	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	12.2	87.6	0.0	0.0

Appendix Table 1 (Cont.) Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1983 to 1987 broods; Coho 1985 to 1989 broods; Steelhead 1984 to 1988 broods)

Data downloaded November 1993 (through "Finalized 1992 returns)

Winter Steelhead

										Percent Recovery for All Areas											
																		Freshwater			
						AD Clip		Total	%	Alaska		British Col		Washington		Oregon		Other Catch		California	
Hatchery	Species	Stock	Release Site	Brood	Tagged	Only	Untagged	Released	Surv	Spt	Com	Spt	Com	Spt	Com	Spt	Com	Gillnet	& Hatchery	Spt	Com
Marion Forks	STW	N Santiam R	Santiam R, Mid Fk	1984	61,962	1,914	0	63,876	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marion Forks	STW	N Santiam R	Santiam R, S Fk	1984	11,092	284	0	11,376	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marion Forks	STW	N Santiam R	Green Peter Res	1985	19,838	435	0	20,273	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marion Forks	STW	N Santiam R	Pyramid Cr	1985	19,866	551	0	20,417	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marion Forks	STW	N Santiam R	Quartzville Cr	1985	19,388	1,071	0	20,459	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marion Forks	STW	S Santiam R	Santiam R, Mid Fk	1984	9,923	307	48,881	59,111	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0