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1990 WDF SPORT SAMPLING SUMMARY
COLUMBIA RIVER AND TRIBUTARIES

Columbia River Laboratory Progress Report 91-21

Washington Department of Fisheries
Planning, Research and Harvest Management
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August 1991

Introduction

Sport fishery sampling on the Columbia River and tributaries was scheduled in 1990 to collect foodfish catch, mark/tag, and other biological data. Information in this report was obtained by WDF technicians checking anglers from the Megler-Astoria Bridge (plus sturgeon fishery below bridge) upstream to Wenatchee, and in Washington tributaries. Funding sources included Dingell-Johnson, BPA, PSMFC, FWS, and Washington State budgeted monies. Additionally, Washington port sampling data was utilized to generate most of the estuarial sport sturgeon sample. The data summarized as "mid-Columbia" was collected from interviews by WDF samplers on both Oregon and Washington sides of the Columbia River between Bonneville and John Day Pool. This preliminary information was obtained during census sampling of the pool fisheries under the sturgeon project supervised by Brad James. Sampling data from Upper Columbia, Ringold and Icicle/Wenatchee/Lake Wenatchee fisheries were collected mostly by Larrie LaVoy from the WDF Wenatchee office.

This report summarizes sampling data by month for general reference with specific use as a sport salmonid CWT sampling record.

Emergency regulation changes

Emergency regulations in 1990 were limited to three mainstem adjustments and three spring chinook tributary changes (Table 1).

Sampling Methodology

Catch and biological data was obtained through angler interviews at boat ramps and bank fishing sites. Tag data was based on sampler observations except for voluntary recoveries or, in the case of sturgeon, use of angler response, to indicate presence of external tags on released sturgeon. CWT readings were provided by WDF in Tumwater (tributary/Upper Columbia) or ODF&W in Clackamas (Lower Columbia). Salmon age readings were provided by John Sneva in Olympia.

Sampling rates were commonly less than 5% except for work done under a census format. Census-type sampling for in-season catch and stock composition estimates occurred for Lower Columbia, spring chinook in the Wind, Drano, Klickitat, Wenatchee and Icicle rivers, and sockeye in Lake Wenatchee.

Sturgeon fishery sampling results

Information presented is limited to general catch sampling results by time and area (Table 2).

The highest catch rate was found in the estuary, with 0.45 legals per chartered boat angler and 0.25 legals per private boat angler. The observed catch rates compared closely to 0.48 for chartered fishermen and 0.24 for private boat anglers in 1989 but with a generally increasing catch rate during the summer. Further upstream, catch rates tended to be less than in 1989.

By area, observed legal catch per angler was 0.05 in Lower Columbia, 0.12 in Bonneville Pool, 0.04 in John Day Pool, and a minor sample in the Hanford Reach showing 0.13 per angler.

Shad fishery sampling results

The 1990 shad run was the largest on record, totaling 3.7 million counted at The Dalles Dam. The observed 3.8 shad caught per angler below Bonneville Dam was a little less than the observed 4.1 in 1989. However, with a nearly 50% increase in angler effort up to 19,000 angler trips, the 1990 Lower Columbia sport catch was a record high 113,800 shad estimated kept plus 21,800 caught and released. By area, sampling showed 3.8/angler in the Lower Columbia, 0.5 in the Bonneville Pool, and 1.2 shad per angler in the John Day Pool (Table 3).

Salmonid fishery sampling results

WDF sampling was focused toward the spring chinook fisheries of the Lower Columbia during March and early April and into the tributary fisheries in April, May, and early June; fall salmon fishery sampling occurred principally in September-October, while the Lake Wenatchee sockeye fishery occurred mostly in August.

Angler interviews involved over 24,000 salmonid angler trips with an observed catch of nearly 6,400 salmon and 344 gamefish (Table 4).

Mark sampling was an integral part of the interview process with both short and long term use of this information. Observed in-sample CWT mark rates were 99/2,674 for spring chinook, 48/1,124 for fall chinook, 10/532 for coho, and 53/1,622 for sockeye. Voluntary snouts produced an added 124 tag readings (Tables 5 and 6).

Age readings showed 4-year-olds to be the leading age group for both spring and fall chinook in most tributaries in addition to Lake Wenatchee sockeye (Table 7).

Table 1. 1990 Sport fishery emergency regulations[1/]

Area	Dates	Regulation Change
Lower Columbia River I-5 Bridge to Buoy 10 Line	4/1 - 4	4-day spring chinook extension.
Wind River	6/1 - 30	Spring chinook season extension including additional area between Shipperd Falls and Carson Hatchery.
Klickitat River	6/4 - 7/30	Spring chinook season closed except for 7/1-7/30 fishery allowed downstream from Fisher Hill Bridge.
Icicle/Wenatchee River	6/8	Scheduled spring chinook season closed early.
Lower Columbia River Buoy 10 to Megler/Astoria Bridge	8/13 9/4-30	Buoy 10 season opened. Special bag limit of 3 salmon.

1/
Excludes emergency regulations adopted early for Wind River, Drano Lake, and Klickitat River that were also listed in 1990 Sport Fishing Guide.

Table 2. 1990 WDF sturgeon sport fishery catch sampling data.

Area	Angler type	Month	Anglers checked	White Sturgeon KEPT Legals	White Sturgeon RELEASED Short	White Sturgeon RELEASED Legal	White Sturgeon RELEASED Over	Green Sturgeon KEPT Legals	Green Sturgeon RELEASED Short	Legal whites kept per angler
Estuary	Charter Boat	May	739	349	2,240		10			0.47
		June	1,084	326	3,884		13	1		0.30
(Completed boat		July	438	291	2,140		2	1		0.66
trip interviews)		August	198	105	848			2		0.53
		September	173	106	595			5		0.61
		Total	2,632	1,177	9,707		25	9		0.45
Estuary	Private Boat	March	3		1					0.00
		April	-							-
(Completed boat		May	735	124	1,208		6			0.17
trip interviews)		June	960	175	2,535		3	1		0.18
		July	916	257	2,499		1	7		0.28
		August	563	201	1,318		1	4		0.36
		September	448	141	859			3		0.31
		Total	3,625	898	8,420		11	15		0.25
Estuary	Bank	March	12		8					0.00
		April	13		4					0.00
		May	70	1	6	1				0.01
		June	77	1	42	1				0.01
		July	41		21					0.00
		Total	213	2	81	2				0.01
Lower Columbia		January	99	8	143					0.08
(Bonneville Dam		February	91		12					0.00
to Estuary; chiefly		March	195	4	127					0.02
incomplete trip bank		April	141	9	143		1			0.06
angler interviews)		May	203	14	45	1	2			0.07
		June	179	3	60		4			0.02
		July	184	7	62	1	1			0.04
		August	79	6	43		3			0.08
		September	53	5	32	1	1			0.09
		October	68	5	13					0.07
		November	64	5	7					0.08
		December	23	1	9					0.04
		Total	1,379	67	696	3	12			0.05

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Table 2. 1990 WOF sturgeon sport fishery catch sampling data. CONTINUED

Area	Angler type	Month	Anglers checked	White Sturgeon KEPT Legals	White Sturgeon RELEASED Short	White Sturgeon RELEASED Legal	White Sturgeon RELEASED Over	Green Sturgeon KEPT Legals	Green Sturgeon RELEASED Short	Legal whites kept per angler
Mid-Columbia Bonneville Pool (OR & WA anglers)		March	321	8	71	2				0.02
		April	291	19	160	7	1			0.07
		May	302	24	220					0.08
		June	603	81	644	4	1			0.13
		July	609	132	985	2	2			0.22
		August	280	22	277	2				0.08
		September	122	17	101					0.14
		October	65	2	34	1				0.03
		Total	2,593	305	2,492	18	4			0.12
Mid-Columbia John Day Pool (OR & WA anglers)		March	86		7					0.00
		April	107	1	17		1			0.01
		May	139	3	10	1				0.02
		June	167	1	87		1			0.01
		July	279	22	208	5	5			0.08
		August	160	5	102					0.03
		September	109	7	45		1			0.06
		October	91	8	64	1	6			0.09
		November	80	4	4		2			0.05
		December	39	4	5		5			0.10
		Total	1,257	55	549	7	21			0.04
Upper Columbia (Hanford Reach- legal size 48"-66")		June	41	4	42	3	1			0.10
		July	16		11		1			0.00
		September	14	6	5		1			0.43
		October	5		10					0.00
		Total	76	10	68	3	3			0.13

Table 3. 1990 WDF shad sport fishery catch sampling data.

Area	Month	Anglers Checked	Shad Kept	Shad Released	Total Shad Caught per Angler
Lower Columbia (Chiefly incomplete trip WA bank angler interviews below Bonneville Dam)	May	419	1,414	94	3.6
	June	977	3,508	274	3.9
	July	27	105	0	3.9
	Total	1,423	5,027	368	3.8
Mid-Columbia Bonneville Pool (OR & WA anglers)	May	4	4	-	1.0
	June	15	5	-	0.3
	Total	19	9	Not recorded	0.5
John Day Pool (OR & WA anglers)	May	4	4	-	1.0
	June	198	245	-	1.2
	July	69	88	-	1.3
	Total	271	337	Not recorded	1.2

Table 4. 1990 WDF salmonid sport fishery catch sampling data.

River	Month	Anglers checked	Hours fished	Chinook Adult	Chinook Jack	Coho Adult	Coho Jack	Steelhead	Other
Lower Columbia	February	77						4	
	March	2,793		406	2			5	
	April 1-4	1,089		196				1	
(Bubble)	April 5-15	529		77					
Limited area --	May 15-31	31						3	
bank sample --	June	43							
only --	July	126						2	
	August	76		6	1			1	
	September	1,002		102	24	11	29	25	
	October	21					2		1 cutthroat
	Total	5,787		787	27	11	31	41	1
Mid-Columbia (Bonneville Pool and John Day Pool, WA ANGLERS ONLY)	March	2	1					1	
	April								
	May								
	June	2	1						
	July	11	53						
	Subtotal	15	55					1	
	August	20	79	2				1	
	September	21	95	4				1	
	October	8	43	1		1			
	November	10	56					1	
	December								
	Fall Total	59	273	7		1		3	
Mid-Columbia (Bonneville Pool and John Day Pool, OR ANGLERS ONLY)	March	23	61	1					
	April								
	May								
	June	35	175						
	July	143	711					22	
	Subtotal	201	947	1				22	
	August	418	2,403	4	1			38	
	September	662	3,433	34	1		1	33	
	October	426	1,963	39	6	3	5	21	
	November	98	281	1			1	13	
	December	62	200	1				4	
	Subtotal	1,666	8,280	79	8	3	7	109	

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Table 4. 1990 WDF salmonid sport fishery catch sampling data. CONTINUED

River	Month	Anglers checked	Hours fished	Chinook Adult	Chinook Jack	Coho Adult	Coho Jack	Steelhead	Other
Upper Columbia (Hanford Reach) 1/	September	1,124	6,528	173	45			3	4
	October	1,695	10,188	394	165			5	19
	Total	2,819	16,716	567	210			8	23 2/
Upper Columbia (Wenatchee area)	September	40	272	3					
Grays River	September	2	7						
Elokomin River	September	11	12				9		
	October	67	173			5	27	1	4 cutthroat
	November	3	11						
	Total	81	196			5	36	1	4
Cowlitz	April	305	1,382	28	1			11	
	May	241	1,156	18	14			5	
	June	39	108		1				1 trout
	Spring Total	585	2,646	46	16			16	1
	September	131	488	11	8	7	16	1	4 cutthroat
	October	131	385		3		23	6	24 cutthroat
	November	94	235			4	40	2	2 cutthroat & 6 whitefish
	Fall Total	356	1,108	11	11	11	79	9	36
Kalama River	March	4	9						
	April	103	328	10	1			2	
	May	219	928	15	6			10	
	June	12	39	1					
	Spring Total	338	1,304	26	7			12	
	September	122	303	4		34	7		
	October	24	53			3	7		
	November	30	76			1	5		2 trout
	Fall Total	176	432	4		38	19		2

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Table 4. 1990 WDF salmonid sport fishery catch sampling data. CONTINUED

River	Month	Anglers checked	Hours fished	Chinook		Coho		Steelhead	Other
				Adult	Jack	Adult	Jack		
Lewis River	March	32	100	2					
	April	702	3,124	90				4	
	May	1,096	5,761	454	7			4	
	June	256	988	47	4			15	
	Spring Total	2,086	9,973	593	11			23	
	September	209	731	29	10	7	8	6	1 trout
	October	421	1,161	9	7	66	105	1	12 cutthroat
	November	289	857	8	3	70	49		7 trout
	Fall Total	919	2,749	46	20	143	162	7	20
Washougal	September	142	349	15					
	October	9	23					2	
	Total	151	372	15				2	
Wind	April	1,048	4,231	238					
	May	1,283	5,323	544	3				
	June	154	551	34					
	Spring Total	2,485	10,105	816	3				
Drano Lake	April	1,205	6,249	165					
	May	622	3,663	128	1				
	Spring Total	1,827	9,912	293	1				
Big White Salmon	April	9	31						
	May	62	257	23				1	
	Spring Total	71	288	23				1	
Klickitat	April	683	2,503	49	2				
	May	695	2,632	112	13				
	Spring Total	1,378	5,135	161	15				
Ringold	May	171	963	30				3	

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Table 4. 1990 WDF salmonid sport fishery catch sampling data. CONTINUED

River	Month	Anglers checked	Hours fished	Chinook Adult	Chinook Jack	Coho Adult	Coho Jack	Steelhead	Other
Wenatchee	May	365	1,576	132					
	June	101	548	28					
	Spring Total	466	2,124	160					
Icicle	May	282	1,352	49					
	June	142	524	8					
	Spring Total	424	1,876	57					
				SOCKEYE					
Lake Wenatchee	August	1,414	6,502	1,609					
	September	92	317	82					
	Total	1,506	6,819	1,691					

1/ Excludes sampling results from a modest level of targeted whitefish and sturgeon fishing trips.
2/ Includes incidental catch of 21 whitefish, 1 sturgeon, 1 small mouth bass.

Table 5. Salmon CWT mark rates observed in 1990 sport fisheries.

River	Month	CHINOOK No. examined	CHINOOK In-sample snouts	COHO No. examined	COHO In-sample snouts
Lower Columbia	March	376	29		
	April 1-4	183	16		
	April 5-15	71	1		
	Spring Total	630	46		
	August	7	4		
	September	112	8	37	2
	October			2	0
	Fall Total	119	12	39	2
Mid-Columbia (Bonneville Pool and John Day Pool, WA ONLY)	August	1			
	September	2			
	October	1			
	Fall Total	4			
Mid-Columbia (Bonneville Pool and John Day Pool, OR ONLY)	August	4	1		
	September	32	1		
	October	43	9	9	1
	November	1	1	1	
	December	1	1		
	Fall Total	81	13	10	1
Upper Columbia (Hanford Reach)	September	260	6		
	October	559	13		
	Fall Total	819	19		
Upper Columbia (Wenatchee area)	September	3			
Elokomin	September			9	
	October			27	1
	Fall Total			36	1

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Table 5. Salmon CWT mark rates observed in 1990 sport fisheries. CONTINUED

River		Month	CHINOOK No. examined	CHINOOK In-sample snouts	COHO No. examined	COHO In-sample snouts
Cowlitz		April	27	6		
		May	29	6		
		June	1			
	Spring	Total	57	12		
		September	19	1	20	1
		October	1		25	
		November			43	
	Fall	Total	20	1	88	1
Kalama		March				
		April	11			
		May	20			
	Spring	Total	31			
		September	4	1	34	
		October			13	
		November			6	
	Fall	Total	4	1	53	
Lewis		March	2			
		April	75			
		May	376	1		
		June	38			
	Spring	Total	491	1		
		September	33		12	1
		October	16		181	3
		November	11		114	1
	Fall	Total	60		307	5
Washougal		September	14	2		

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Table 5. Salmon CWT mark rates observed in 1990 sport fisheries. CONTINUED

River	Month	CHINOOK No. examined	CHINOOK In-sample snouts	COHO No. examined	COHO In-sample snouts
Wind	April	234	5		
	May	515	9		
	June	22			
	Spring Total	771	14		
Drano Lk.	April	143	1		
	May	106	1		
	Spring Total	249	2		
White Salmon	May	18			
Klickitat	April	57			
	May	133			
	Spring Total	190			
Ringold	May	27			
Wenatchee	May	127	16		
	June	28	2		
	Spring Total	155	18		
Icicle	May	46	3		
	June	9	3		
	Spring Total	55	6		
		Sockeye			
Lake Wenatchee	August	1,540	47		
	September	82	6		
	Fall Total	1,622	53		

1/ Mark sample of 190 Klickitat spring chinook included 108 Carson stock LV clips.

Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses).

River	Stock	Brood Year	Hatchery	Code	MAR	APR 1-4	APR 5-15 (Bubble)	JUNE	JULY	AUG	SEPT	OCT	NOV
Lower Columbia	Spring chinook	'84	Willamette	07-34-27	(1)								
		'85	Cle Elum Ponds	05-14-46	1								
		'85	Carson	05-18-19	(1)								
		'85	Carson	05-18-28		(1)							
		'85	Carson	05-18-30		1							
		'85	Willamette	07-34-29	1		1						
		'85	Willamette	07-34-31	1								
		'85		07-38-05	1								
		'85	Willamette	07-39-02	1								
		'85	Willamette	07-39-05	1								
		'85	Marion Forks	07-39-44	1								
		'85	Marion Forks	07-39-45	(1)								
		'85	Marion Forks	07-39-47	1								
		'85	McKenzie	07-39-48	1								
		'85	McKenzie	07-39-49	2								
		'85	McKenzie	07-39-51		1							
		'85	So. Santiam	07-39-53	(1)								
		'85	McNary	23-20-14	(1)								
		'86	Willamette	07-38-53	1								
		'86	McKenzie	07-39-49									
		'86	Lookinglass	07-40-15		1							
		'86	Lookinglass	07-40-19	1								
		'86	Lookinglass	07-40-20	(1)								
		'86	Lookinglass	07-40-21	2 (1)								
		'86	Bonn.(Rel.Hood R.)	07-42-57		1							
		'86	Bonn.(Rel.Meacham Cr.)	07-43-25		(1)							
		'86	Bonn.(Rel.Meacham Cr.)	07-43-26		2 (1)							

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Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APR 1-4	APR 5-15 (Bubble)	JUNE	JULY	AUG	SEPT	OCT	NOV
Lower Columbia	Spring chinook	'86	Bonn. (Rel. Umatilla R.)	07-43-27		1 (1)							
		'86	Bonn. (Rel. Umatilla R.)	07-43-30	(1)								
		'86	Round Butte	07-44-61	1								
		'86	Round Butte	07-44-61.3		1							
		'86	Round Butte	07-44-62 R1	2	1							
		'86	Round Butte	07-44-62.2	1								
		'86	Round Butte	07-44-62.3	(1)	1							
		'86	Dexter Ponds	07-47-14 R2	1								
		'86	Marion Forks	07-49-62.2	1								
		'86	Marion Forks	07-50-01.1	1								
		'86	Willamette	07-50-16.1		1							
		'86	Willamette	07-50-16.2	1								
		'86	Dworshak	10-28-13	(1)								
		'86	Dworshak	10-28-14	1								
		'86	Dworshak	10-29-34		1							
		'86	Rapid R.	10-30-36		1							
		'86		10-30-37	1								
		'86	Dworshak	10-40-55		1							
		'86	Dworshak	10-40-56	(1)								
		'86	Leavenworth	23-23-19	(1)								
		'86		No Tag	4	2							
	Fall Chinook	'85	Bonn.(Rel. Tanner Cr.)	07-36-36							(1)		
		'85	Bonn.(Rel. Umatilla R.)	07-38-28							1		
		'85	Lewis R. (wild)	63-38-21							(1)		
		'85	Washougal	63-38-32							1		
		'86	Yakima R.	05-19-22							(1)		
		'86	Meacham Cr.	07-40-36						(1)			
		'86	Bonn.(Rel. Tanner Cr.)	07-47-25						1			
		'86	Bonneville	23-21-26						(1)			
		'86	Bonneville	23-21-53							(1)		
		'86	Lewis R. (wild)	63-41-51							(1)		
		'86	Columbia R. (wild)	63-41-52							1		
		'86	Drano Lk.	B5-02-02							1		

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Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APR 1-4	APR 5-15 (Bubble)	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Lower Columbia	Fall Chinook	'87	Big Cr.	07-41-37							(1)			
		'87	Bonneville	23-26-02							1			
		'88	Bonn.-N.Bonn. Bypass	23-26-62 R3							(1)			
		'88	Kalama	63-07-44							1			
		'88	Snout not recovered							2				
		'88		No Tag						1	2			
Lower Columbia	Coho	'87	Toutle	63-55-07							(1)			
		'88		07-48-12							1			
		'88		63-02-38									(1)	
		'88		63-02-41								(1)		
		'88		No Tag							1			
Mid-Columbia (Bonneville Pool and John Day Pool, OR ONLY)	Fall Chinook	'85	LWS B	05-18-08							1			
		'85	coho (rel.Umatilla R.)	07-36-24								1		
		'85	BUB	07-36-36								1		
		'85	Umatilla B	07-38-41									1	
		'85	Soc. Sec. B	B5-03-09										1
		'86	Bonn.(rel.Umatilla R.)	07-40-38						1				
		'86	Bonn.(rel.Umatilla R.)	07-40-39								1		
		'86	NMFS BUB	23-22-09								1		
		'88	NMFS BUB	23-31-55 R1								1		
		'88		No Tag								2		
		'88	Snout not recovered									2		
	Coho	'88	Snout not recovered									1		

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Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
Upper Columbia	Fall Chinook	'85	Soc. Sec.	65-03-12							(1)		
		'85	Bonn. Bright	07-33-18								(1)	
		'85	NMFS (rel. McNary)	23-19-29							1		
		'85	NMFS (rel. Bonn.)	23-19-38							2	1	
		'85	NMFS (rel. Bonn.)	23-19-40								1	
		'85	Rocky Reach	63-31-12							1	4	
		'85	Priest Rapids	63-41-02								1	
		'85		No Tag							1		
		'86	Irrigon (rel. Umatilla)	07-39-12								1	
		'86	Bonn.(sp.ch.rel. Meacham Cr.)	07-43-26								1	
		'86	NMFS (rel.Bonn.)	23-22-23							1		
		'86	Hanford wild	63-41-52								1	
		'87	Lyons Ferry	63-47-55 R4								(1)	
		'88	Hanford wild	63-52-52								3	
Elokomin	Coho	'87	--	No Tag								1	
Cowlitz	Spring chinook	'84	Cowlitz	63-35-12			1						
		'85	Cowlitz	63-38-33			(1)		(1)		(1)		
		'85		63-38-34		1							
		'85		63-38-35		1		(1)					
		'86	Imnaha R.	07-42-60			(1)						
		'86	Cowlitz	63-41-61 R1		(1)	(3)	(1)					
		'86		63-41-61 R2			1 (3)						
		'86		63-41-61 R3		3 (2)	1 (2)	(1)					
		'87	Cowlitz	63-42-04 R1			1						
		'87		63-42-04 R2		(1)	1						
		'87		63-42-04 R3					(1)				
		'87		Snout not recovered		1							
		'87		No Tag			1						

CONTINUED

Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
Cowlitz	Fall Chinook	'86	NMFS Bonn. URB Bypass	23-21-41							(1)		
		'87	Lewis wild	63-50-61 R2							1		
	Coho	'87	Toutle	63-55-07 R4							(1)		
		'88	Toutle	63-01-41 R1							(1)		
		'88	Toutle	63-01-41 R2							(1)		
		'88	Toutle	63-01-41 R3							(1)		
		'88	Toutle	63-01-41 R4							(1)		
		'88	Toutle	63-01-41 R5							(1)		
		'88	--	Snout not recovered							1		
		'88	Cowlitz	63-02-38 R6								(1)	
		'88	Cowlitz	63-02-41 R1								(1)	(2)
		'88	Cowlitz	63-02-41 R6								(3)	
		'88	Cowlitz	63-07-62 R1									(2)
		'88	Cowlitz	63-07-62 R3								(2)	
Kalama	Spring chinook	'86	Round Butte	07-44-61 R2		(1)							
		'86	Lyons Ferry	63-41-48			(1)						
	Fall Chinook	'85	Elokomin	63-34-58							1		
	Coho	'88	Lower Kalama	63-13-19 R1							(1)		
Lewis	Spring chinook	'85	Willamette	07-34-33	(1)								
		-	--	No Tag			1						
	Coho	'88	Lewis R.	63-01-44 R3							1		
		'88	Lewis R.	63-01-47 R1								2	
		'88	Lewis R.	63-01-47 R2								1	
		'88	Lewis R.	No Tag									1

CONTINUED

Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
Washougal	Fall chinook	'84	Washougal	63-34-32							1		
		'85	Washougal	63-38-31							1		
		'86	Washougal	63-41-50 R1							(1)		
Wind	Spring chinook	'85	Carson	5-18-13			1						
		'85	Carson	5-18-14			(1)						
		'85	Carson	5-18-15			(1)						
		'85	Carson	5-18-16		1							
		'85	Carson	5-18-17		(1)							
		'85	Carson	5-18-18		(1)							
		'85	Carson	5-18-19			1						
		'85	Carson	5-18-23			1						
		'85	Carson	5-18-25		(1)	1 (1)						
		'85	Carson	5-18-26			1	(1)					
		'85	Carson	5-18-27			1 (1)						
		'85	Carson	5-18-28		1 (1)	(2)						
		'85	Carson	5-18-29		(2)	(2)						
		'85	Carson	5-18-30			1 (1)						
		--		No Tag		3	2						
Drano Lk.	Spring chinook	'85	Carson	5-18-21		1							
		'85	Carson	5-18-25			1						
White Salmon	Fall Chinook	'85	Lyons Ferry	63-41-59 R2						(1)			
Wenatchee	Spring Chinook	'85	Cle Elum Ponds-(Yakima R.)	05-17-38				(1)					
		'85	Cle Elum Ponds-(Yakima R.)	05-17-56			(1)						
		'85	NMFS transport	23-20-14			(1)						

CONTINUED

Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
Wenatchee	Spring Chinook	'85	Cle Elum Ponds-(Yakima R.)	05-17-38				(1)					
		'85	Cle Elum Ponds-(Yakima R.)	05-17-56			(1)						
		'85	NMFS Transport	23-20-14			(1)						
		'86	Leavenworth	05-17-06			3						
		'86	Leavenworth	05-17-07			4 (2)	1					
		'86	Leavenworth	05-17-08			1 (2)						
		'86	Leavenworth	05-17-09			3 (4)						
		'86	NMFS Transport	23-22-30			1						
		'86	NMFS Transport	23-22-38			(1)						
		'86	NMFS Transport	23-22-45			(1)						
		'86	Leavenworth	23-23-18			(4)						
		'86	Leavenworth	23-23-19			2 (2)						
		'86	Leavenworth	23-23-21			2 (2)	1 (1)					
Icicle R.	Spring Chinook	'85	Cle Elum Ponds-(Yakima R.)	05-17-38			1						
		'86	Leavenworth	05-17-06			1 (1)	1					
		'86	Leavenworth	05-17-07			(1)	1					
		'86	Leavenworth	05-17-09			(3)						
		'86	Leavenworth	23-23-19			(1)						
		'86	Leavenworth	23-23-21			1 (1)						
		'86	Leavenworth	23-23-23				1					
		'87	Leavenworth	23-23-15				(1)					
Lake Wenatchee	Sockeye	'85	NMFS Transport	23-20-32						1			
		'85	NMFS Transport	23-20-33						2			
		'85	NMFS Transport	23-20-34							1		
		'85	NMFS Transport	23-20-35						2			
		'85	NMFS Transport	23-20-37						2			
		'85	NMFS Transport	23-20-46						1			

CONTINUED

Table 6. 1990 sport salmon mark recoveries (voluntaries in parentheses). CONTINUED

River	Stock	Brood Year	Hatchery	Code	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
Lake Wenatchee	Sockeye	'86	NMFS Transport	23-23-30						4 (1)	2		
		'86	NMFS Transport	23-23-31						6 (1)			
		'86	NMFS Transport	23-23-32						7			
		'86	NMFS Transport	23-23-33						2			
		'86	NMFS Transport	23-23-34						1			
		'86	NMFS Transport	23-23-35						2 (1)			
		'86	NMFS Transport	23-23-38						(1)	1		
		'86	NMFS Transport	23-23-41						1			
		-	--	Snout not recovered						1			
		-	--	Lost Tag						4			
		-	--	Not Tag						11	2		

Table 7. 1990 sport salmon age readings.

River	Month	AGE 2 1	2 2	3 1	3 2	4 1	4 2	5 1	5 2	6 1	6 2	Total
Lower Columbia		Scale samples processed by ODF&W.										
Mid-Columbia Bonneville Pool Chinook	August	1					2			1		4
	September			1		8		7		3		19
	October	1				2	1	5	2	2		13
	Fall Total	2		1		10	3	12	2	6		36
	PROPORTIONS	0.056		0.028		0.278	0.083	0.333	0.056	0.167		1.001
Mid-Columbia John Day Pool Chinook (no nucleus type)	September		1						1			2
	October		5				7		4			16
	November								1			1
	December								1			1
	Fall Total		6				7		7			20
	PROPORTIONS		0.300				0.350		0.350			1.000
Upper Columbia Hanford Reach Chinook	September	6		3		6		4	1			20
	October	17	2	2	1	32	4	28	3	3		92
	Fall Total	23	2	5	1	38	4	32	4	3		112
	PROPORTIONS	0.205	0.018	0.045	0.009	0.339	0.036	0.286	0.036	0.027		1.001
Cowlitz Chinook	April						16		6			22
	May				12		7		5		1	25
	June				1							1
	Spring Total				13		23		11		1	48
	PROPORTIONS				0.271		0.479		0.229		0.021	1.000
	August											
	September	3		1	2	1	1	1				9
	October											
	Fall Total	3		1	2	1	1	1				9
	PROPORTIONS	0.333		0.111	0.222	0.111	0.111	0.111				0.999

CONTINUED

Table 7. 1990 sport salmon age readings. CONTINUED

River	Month	AGE 2 1	2 2	3 1	3 2	4 1	4 2	5 1	5 2	6 1	6 2	Total
Kalama	April				1		6		3			10
Chinook	May				5		10		2			17
	Spring Total				6		16		5			27
	PROPORTIONS				0.222		0.593		0.185			1.000
	August											
	September					3		1				4
	October											
	Fall Total					3		1				4
	PROPORTIONS					0.750		0.250				1.000
Lewis	April						26	1	31			58
Chinook	May				5		151	1	202		7	366
	June				3		15		16		1	35
	Spring Total				8		192	2	249		8	459
	PROPORTIONS				0.017		0.418	0.004	0.543		0.017	0.999
	September	2	2	1		8	3	6	1	1		24
	October	5		1		2	2	2				12
	November					3		2				5
	Fall Total	7	2	2		13	5	10	1	1		41
	PROPORTIONS	0.171	0.049	0.049		0.317	0.122	0.244	0.024	0.024		1.000
Washougal	August											
Chinook	September			3		5		1		1		10
	October											
	Fall Total			3		5		1		1		10
	PROPORTIONS			0.300		0.500		0.100		0.100		1.000
Wind	April				1		215		18			234
Chinook	May				5		446		45	1	1	498
	June						19					19
	Spring Total				6		680		63	1	1	751
	PROPORTIONS				0.008		0.906		0.084	0.001	0.001	1.000

CONTINUED

Table 7. 1990 sport salmon age readings. CONTINUED

River	Month	AGE 2 1	2 2	3 1	3 2	4 1	4 2	5 1	5 2	6 1	6 2	Total
Drano Lake Chinook	April					3	116		20			139
	May				1		93		9			103
	Spring Total				1	3	209		29			242
	PROPORTIONS				0.004	0.012	0.864		0.120			1.000
	August							1				1
White Salmon Chinook	April									5 2 LV		
	May						11		1	1		13
	June											
	PROPORTIONS						0.846		0.077	0.077		1.000
Klickitat Chinook	April						8		5	5 2 LV 30		43
	May				12	1	35		12	55	1	116
	June											0
	Spring Total				12	1	43		17	85	1	159
	PROPORTIONS				0.076	0.006	0.270		0.107	0.535	0.006	1.000
Ringold Chinook	May						25					25
	PROPORTIONS						1.000					1.000

Icicle Chinook (Preliminary estimate of catch by age)		3	4	5 & 6	Total
	May and June	8	285	82	375
	PROPORTIONS	0.021	0.760	0.219	1.000

Wenatchee Chinook (Preliminary estimate of catch by age)					
	May and June	7	457	186	650
	PROPORTIONS	0.011	0.703	0.286	1.000

Lake Wenatchee Sockeye (Sample proportions)		4 2	5 2	5 3	6 3	
	August and September	0.690	0.183	0.113	0.016	1.002