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1991 WDF Sport Sampling Summary of Spring Chinook Fisheries Wind River Drano Lake White Salmon River Klickitat River

Columbia River Laboratory Progress Report Number 91-29

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Introduction

Intensive sampling of the Washington tributary spring chinook sport fisheries in Bonneville Pool was again conducted in 1991 to collect data for both in-season and post-season assessment of each tributary run and sport fishery. Sampling activity was funded primarily through a PSMFC CWT sampling contract, with some assist through the state budget. The 1991 spring chinook Upper Columbia tributary seasons were established by mid-March and included in the 1991 Sport Fishing Guide. Steps leading to this included early run prediction and establishment of allowable harvest levels followed by development of fishery proposals which were enacted into final form through negotiations with Yakima Indian Nation. Season openings were April 1 on the lower Wind River and Drano Lake, and Saturdays only beginning April 6 on the lower Klickitat River. Season ending dates were different for each river (Table 1).

Methods

Three primary samplers were employed to obtain the bulk of the data with occasional assist by 4-5 other staff members. Sampling duties included random angler interviews, examination of catch, and making angler counts. Generally, this information was plotted to develop weekly catch estimates by applying observed catch rates to calculated effort curves.

Wind River catch estimates were separately developed for boat, bank, gorge, and upper Wind strata since each segment had unique characteristics.

At Drano Lake, angler counts collected by Little White Salmon National Fish Hatchery staff anchored the effort estimates.

Klickitat catch estimates were developed more through fishery observation during intensive morning sampling with occasional afternoon spot checks. Here, in-season catch estimates are considered to be preliminary compared to fisheries of Wind and Drano Lake where firm catch estimates were generated. The final Klickitat catch estimates originate from sport catch report data.

An increased level of sampling in 1991 was directed to a fishery at the mouth of the White Salmon River near Underwood to increase the volume of biological data collected. The fishery on this river developed from an obscure level to an intensive level in 1990 and 1991, triggered by successful returns of 1986-brood yearling releases from the BWS rearing pond as 4's in 1990 and 5's in 1991. A catch estimate was not attempted here in 1990 or 1991.

Results

Season catch estimates were 3,550 in Wind River, 660 in Drano Lake, and 143 in Klickitat River (Table 2).

The Wind River catch was the second highest on record keyed by a strong 1986 brood return with a high effort level. The fishery was distinctive by providing good fishing over a 2-month period, from mid-April to mid-June. Only three snouts were recovered in a sample of 695 fish.

At Drano Lake, the catch was about half that of other recent years. The fishery was limited to six weeks by regulation and provided only a modest catch rate during the season.

The Klickitat fishery began slowly, with Saturdays during the month of May being the most important. River conditions were generally favorable. The observed 0.055 fish/hour for the season was the highest catch rate value observed among the four rivers. No marks were found in a sample of 68 fish.

The initial year of substantial sampling on the White Salmon River included 524 anglers checked with one in-sample snout in a sample of 73 spring chinook. The observed catch rate of 0.038 fish per hour was average for all four rivers.

No CWT returns were expected. The three Wind River recoveries included two no-tags and one tagged jack from Round Butte Hatchery. The one Drano Lake snout was a no-tag. The one White Salmon River recovery was a 1986 brood fish of Carson stock reared at Bonneville Hatchery and released into Hood River (Table 3).

Scale analysis showed the predominance of 5's in Wind River and Drano Lake, while the Klickitat catch was principally 4's, as expected. White Salmon River catch was 95% 5-year-olds based on a sample of 66 sets of scales (Table 4).

Discussion

The Wind River fishery was modified in 1991 by an extension of the river mouth deadline. This provided for an increase in fishing area of about 200 yards downstream of the lower deadline employed during the 1990 season. The deadline was marked by two large anchored buoys and posted signs on the bank at each end of the line. This change in line location reduced the boat/bank angling congestion experienced in 1990 and appeared to shift the focus of boat catch downstream toward the new deadline. Despite this adjustment, no significant change in stock composition was found. The 1991 mark sample of 695 fish included 3 in-sample snouts of which two were no-tags, with the one tag recovery a jack of Round Butte Hatchery (Deschutes River) origin.

The breakdown of catch by stratum was 1,839 in the river mouth boat fishery, 547 in the river mouth bank fishery, 637 in the gorge fishery below Shipperd Falls, and 527 in the area upstream from Shipperd Falls. The majority of the above-Shipperd Falls catch occurred in the Coffer Dam area less than a mile above Shipperd Falls. This particular location was posted as

"Closed Waters" part way through the season due to proximity to Fish Ladder No. 2.

The 7-day/week Drano Lake season established in 1990 was repeated in 1991, but with an earlier closure on May 12. The fishery level was modest, influenced by the better catch rate in Wind River, and effect of the continuous fishing. A peak instantaneous boat count of 73 on April 13 compared to 1990 with 95 on April 21, and 1989 (4-days per week) with 186 boats on April 20. The bank fishery developed during the latter portion of the season with 12% of the season catch estimated as bank catch.

The one-day/week fishery of the Klickitat provided for eight consecutive open Saturdays. The river was fishable except for the first day. Catch rates increased to a peak in mid-May, with little effort observed after the first week of June.

The White Salmon River fishery in April-May was chiefly a river mouth fishery by bank anglers casting and retrieving plugs. In June the fishery moved upstream into the gorge. Our chief interest in the 1991 White Salmon sampling was to document origin of fish in the river-mouth fishery as well as possible. A relatively clean catch was suggested from the recovery of only one known straying fish (a Hood River release) in a mark sample of 73 fish. Additionally, the age sample showed 63/66 (95%) of the fish examined were expected 5's. There were no '87 or '88 brood releases of spring chinook into this tributary.

Summary

Sampling coverage of the 1991 spring chinook sport fisheries in Wind River, Drano Lake, and Klickitat River provided data for weekly fishery updates and post-season run analysis. In-season catch estimates included a strong value of 3,550 in Wind River, a drop in Drano Lake to 660, and a reduced fishery in the Klickitat River of 143 fish. White Salmon River sampling provided information on stock composition of the fishery.

Snout recoveries in 1991 were quite limited. Two stray tag recoveries were found - one in the Wind River and one in the White Salmon River, from a combined-area mark sample of 976 spring chinook.

Age 5 fish formed the nucleus of catch in Wind, Drano, and White Salmon, reflecting strong 1986 brood return; age 4 fish were predominant in the curtailed Klickitat River fishery.

Table 1. Bonneville Pool tributary sport catch of spring chinook, 1986-1991.

Area	Year	Catch	Season
Wind River	1986	1,797	4 days/week, 4/17-5/31
	1987	779	4 days/week, 4/16-5/31
	1988	500	5 days/week, 4/7-5/30
	1989	1,107	7 days/week, 4/6-5/31
	1990	3,857	7 days/week, 4/1-6/30 including June upper area.
	1991	3,550	7 days/week, 4/1-6/30 including June upper area with river mouth deadline adjustments.
Drano Lake	1986	121	4 days/week, 5/8-5/31
	1987	1,295	4 days/week, 4/18-5/31
	1988	1,800	4 days/week, 4/7-5/29
	1989	1,294	4 days/week, 4/6-5/14
	1990	1,321	7 days/week, 4/1-5/15
	1991	660	7 days/week, 4/1-5/12
Klickitat River 1/	1986	28	Closed 4/17-6/15
	1987	198	1 day/week, 4/18-5/23, below Fisher Hill Bridge with one adult/day. Less restrictive season earlier and later in run.
	1988	277	1 day/week, 4/16-5/21, below Swinging Bridge, plus an upper area, one adult/day. Less restrictive season earlier and later in run.
	1989	928	4 days/week, 4/6-5/31, mouth to Fisher Hill Bridge and 400 ft. above No.5 Fishway to mouth of Little Klickitat River. 2 fish/day. Season modified beginning 5/11 to allow retention of only LV marked fish in all areas. Season modified 5/25 to include area from hatchery to 400 ft. above No.5 Fishway 7 days/week, A bag, with retention of only LV clips for adults. Ventral fin regulation lifted July 7. Pamphlet regulation in effect below Fisher Hill Bridge 6/1-7/31, A bag, no stock specific regulation or closed days.

Continued

Table 1. Bonneville Pool tributary sport catch of spring chinook, 1986-1991. CONTINUED

Area	Year	Catch	Season
Klickitat River	1990	386	4 days/week, 4/5-5/31, mouth to Fisher Hill Bridge, and 400 ft. above No. 5 Fishway to mouth of Little Klickitat River. 2 fish per day. Daily, June 1-3; A bag, below Fisher Hill Bridge, plus daily June 1-3, jacks only, 400 ft. above No. 5 Fishway to Hatchery deadline. Daily July 1-30, A bag, Fisher Hill Bridge to mouth.
	1991	143	1 day/week (Saturday) 4/6-5/25 downstream from Fisher Hill Bridge with 2-fish bag limit. 7 days/week 6/1-7/31 downstream from Fisher Hill Bridge. Six salmon per day to include no more than 2 adults. 7 days/week 6/1-7/31 from 400 ft. above No. 5 fishway to boundary markers at Klickitat River Salmon Hatchery. Jacks only.

1/ Klickitat River catch estimates for 1986-1988 are final April-July catch record card values. Estimates for 1989 and 1990 are preliminary catch record card values. The 1991 estimate is a preliminary census value for the 3-month period April-June downstream from Fisher Hill Bridge.

Table 2. Catch and mark rates in 1991 Bonneville Pool tributary sport fisheries for spring chinook.

Area	Dates	Anglers Interviewed	Hours Fished	Observed Catch	Catch per Hour	Preliminary Catch Estimate	Mark Sample	In-sample CWT Recoveries
Wind River	4/1-7	283	950	26	0.027	65	23	0
	4/8-14	443	2,230	68	0.031	149	62	2
	4/15-21	714	3,909	144	0.037	411	135	0
	4/22-28	627	3,327	160	0.048	586	140	0
	4/29-5/5	590	3,385	121	0.036	468	110	0
	5/6-12	386	2,283	105	0.046	277	102	1
	5/13-19	250	1,325	67	0.051	262	58	0
	5/20-26	150	667	24	0.036	129	16	0
	5/27-6/2	66	226	22	0.097	336	20	0
	6/3-9	63	231	20	0.087	532	16	0
	6/10-16	41	195	13	0.067	280	13	0
	6/17-23	17	75	0	0.000	35	0	0
	6/24-30	5	15	0	0.000	20	0	0
	Season Totals	3,635	18,818	770	0.041	3,550	695	3
Drano Lake	4/1-7	268	1,373	30	0.022	66	28	1
	4/8-14	217	1,022	17	0.017	81	14	0
	4/15-21	274	1,462	17	0.012	93	15	0
	4/22-28	298	1,828	51	0.028	201	46	0
	4/29-5/5	283	1,483	21	0.014	124	16	0
	5/6-12	209	1,352	24	0.018	95	21	0
	Season Totals	1,549	8,520	160	0.019	660	140	1
Klickitat River	4/6	11	31	0	0.000	0	0	0
	4/13	28	109	1	0.009	2	1	0
	4/20	26	79	2	0.025	4	1	0
	4/27	43	156	5	0.032	13	5	0
	5/4	74	194	5	0.026	14	5	0
	5/11	41	176	16	0.091	27	14	0
	5/18	49	241	24	0.100	36	23	0
	5/25	39	182	15	0.082	22	15	0
	Month of June	36	141	4	0.028	25	4	0
	Season Totals	347	1,309	72	0.055	143	68	0
White Salmon River	4/1-7	30	92	1	0.011		1	0
	4/8-14	63	198	10	0.051		10	0
	4/15-21	115	453	21	0.046		20	1
	4/22-28	60	260	12	0.046		11	0
	4/29-5/5	145	490	14	0.029		13	0
	5/6-12	72	296	11	0.037		13	0
	5/13-19	18	58	3	0.052		3	0
	5/20-26	7	30	0	0.000		0	0
	5/27-6/2	0	0	0	0.000		0	0
	6/3-9	11	58	2	0.035		2	0
	6/10-16	3	14	0	0.000		0	0
	Season Totals	524	1,949	74	0.038	0	73	1

Table 3. CWT readings from Bonneville Pool tributary sport fisheries, 4/1-6/30, 1991.

Tributary	Tag Code	FREQUENCY In-sample	Voluntary	Brood	Origin
Wind River	07-50-58	1		'88	Round Butte
	NT	2		-	-
Drano Lake	NT	1		-	-
Big White Salmon River	07-42-57	1		'86	Bonneville Hatchery, Carson stock, released into Hood River.

Table 4. Age composition of spring chinook sampled in the 1991 Bonneville Pool tributary sport fisheries.

Area	Fishery Period	No. fish sampled for age								Total
		3 1	3 2	4 1	4 2	5 1	5 2	6 1	6 2	
Wind River 1/	4/01-07				2		13		1	16
	4/08-14				9		48			57
	4/15-21				43		70		1	114
	4/22-28				46		82			128
	4/29-5/5				42		59			101
	5/06-12		7		34		55			96
	5/13-19		2		11		33			46
	5/20-26		1		4		7			12
	5/27-6/2				13		7			20
	6/03-09				5		9			14
	6/10-16				1		4			5
	6/17-23									
	6/24-30									
	Total		10		210		387		2	609
Drano Lake	4/01-07			1	1		25			27
	4/08-14				2		8			10
	4/15-21				3		11			14
	4/22-28				16		22			38
	4/29-5/5				4		11			15
	5/06-12				6		10			16
	Total			1	32		87			141
Klickitat River	4/01-07									
	4/08-14				1					1
	4/15-21						1			1
	4/22-28				5		1			6
	4/29-5/5				4		3			7
	5/06-12				10	1	2			13
	5/13-19		5		11		4			20
	5/20-26		4		4		3			11
	5/27-6/2				3					3
	6/03-09									
	6/10-16									
	6/17-23					1				1
	6/24-30									
	Total		9		38	2	14			63

1/ Regenerated scale samples from the Wind River were aged by fork length.

Table 4. Age composition of spring chinook sampled in the 1991 Bonneville Pool tributary sport fisheries.

(cont.)

Area	Fishery Period	No. fish sampled for age								
		3 1	3 2	4 1	4 2	5 1	5 2	6 1	6 2	Total
Big White Salmon River	4/01-07									
	4/08-14						10			10
	4/15-21						19			19
	4/22-28						10			10
	4/29-5/5				1		11			12
	5/06-12				1		11			12
	5/13-19				1		2			3
	5/20-26									
	5/27-6/2									
	6/03-09									
	6/10-16									
	6/17-23									
	6/24-30									
	Total				3		63			66