

1989 WDF Sport Sampling Summary of
Spring Chinook Fisheries
Wind River
Drano Lake
Klickitat River
PROGRESS REPORT NO. 89-25

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Introduction

Bonneville Pool tributary sport seasons for spring chinook are currently established through emergency regulation authority. Tributary seasons are set following analysis of data, development of a current season run prediction along with number of fish available for harvest beyond escapement needs and finally negotiated settlement of treaty/recreational fishing schedules which address allocation needs.

The 1989 sport seasons for Wind River, Drano Lake, and Klickitat River all opened on April 6, but with varying fishing schedules as each season progressed.

The Wind River season was established at 7 days per week from the deadline below Shipperd Falls downstream 2 miles to the mouth, April 6-May 31, with a two-fish daily bag limit.

The Drano Lake (Little White Salmon River) fishery extended from April 6 to May 14, at four days per week (Thursday to Sunday) from markers near the hatchery grounds to the Hwy. 14 Bridge, with a two-fish daily bag limit.

The Klickitat River season opened April 6 with a four-day per week fishery (Thursday to Sunday) from the mouth upstream 1.8 miles to Fisher Hill Bridge and from 400 ft. above No. 5 fishway upstream 17.5 miles to the mouth of the Little Klickitat River, both areas with a two-fish bag limit. Several subsequent regulation modifications occurred: effective May 11, only ventral-clipped fish could be retained; beginning May 25, the upper fishing area was extended to include the area from 400 ft. above No. 5 fishway to markers at the Klickitat Salmon Hatchery for seven days per week under A bag with an LV restriction for adults; the pamphlet season was in effect beginning June 1 below Fisher Hill Bridge; finally, the adult ventral clip restriction upstream from No. 5 fishway was lifted on July 7.

Fisheries during April and May were monitored to provide in-season estimates of catch for use in weekly run status reviews.

Methods

Sport fishery monitoring culminated in development of weekly catch estimates plus analysis of biological sampling data. Specific elements of the monitoring program included fishermen interviews with catch and effort data stratified by area or gear type, biological examination of the catch including species, length, scale sampling and mark sampling, and periodic angler counts. At Drano Lake, USF&WS hatchery personnel conducted angler counts 3 times daily.

The fishermen counts were plotted to develop daily effort curves to which observed CPUE was applied. When insufficient catch or count data precluded computing a daily catch, fishermen reports or interpolated values were substituted. Separate catch estimates were generally made for the boat/bank segments in each

river to increase accuracy of the calculated catch since each segment tended to have a different effort curve and catch rate. In the Wind River and Klickitat River above Fisher Hill Bridge, a third catch segment was used. Catch sampling was focused into the late morning time period but did include some early morning, afternoon and evening checks as well.

CWT sampling for in-sample snouts was supplemented by solicited voluntary turn-ins of marked fish heads. The key voluntary turn-in point was at the Home Valley Store near the Wind River mouth.

Other biological data consistently collected included length and scales.

Results

Estimated sport catches included 1,107 in Wind River, 1,294 in Drano Lake, and 857 in Klickitat River during the months of April and May. The Wind River and Drano Lake catches were typical for recent years. The Klickitat River catch was at a record high level, with more liberal angling regulations and a good fish abundance compared to 1986-1988 (Table 1).

The Wind River catch estimate was derived from a 26% sample of 1,412 anglers with 286 fish in possession (Table 2). This sample occurred chiefly from the river mouth boat and bank fishing areas, with only a minor gorge catch. The peak fishing period was late April to mid-May. Sampling frequency averaged five days per week. The mark rate was 55/301 or 18%.

At Drano Lake, samplers checked 2,260 anglers with 475 chinook, for a 36% sample rate. The fishing peak occurred during the last week in April and first week of May, although the highest CPUE was found during the final fishing period of May 11-14. Sampling was conducted on most open days. All CWT recoveries occurred during April. The mark rate was 8/458 or about 2%.

The Klickitat River catch was focused into about a 1/2 mile section of the gorge below Fisher Hill Bridge. This allowed for a high sampling rate of 402/857 or 47% in April and May. Samplers interviewed 1,582 anglers. The mark sample of 405 fish contained no Ad-CWT fish, although most of the catch was LV-clipped Carson stock 4's. The peak fishing period was during the last week of April. This was followed by generally good but declining catch rates during May.

The Wind River mark recoveries included 4 and 5-year-old Carson Hatchery fish. The in-sample recoveries produced 50 tag readings with an additional 54 voluntary tag code readings (Table 3).

At Drano Lake, a total recovery of 10 tags included 9 Carson fish and 1 LWS 5-year-old.

No CWT recoveries occurred in the Klickitat River, although about 90% of the catch was LV-clipped Carson stock fish reared to smolt size and released from Klickitat Hatchery.

Scale samples were routinely secured from fish examined for marks. Age analysis showed that age 4 springs predominated during each week of fishing in all three river systems (Table 4).

Discussion

An increase in efficiency of the Wind River fishery resulted from the 7-day/week fishery compared to the 1986-1988 partial season format. Along with this, the fishing intensity was not focused into an "opening day" which resulted in a more orderly fishery for the relatively small area at the mouth of the Wind River. Some reduction in sampling efficiency occurred due to the expanded season. The 1989 mark sample of 27% compared to 42% from '86-'88.

Maintaining a Mon-Tues-Wed closure followed by 4-day/week fishing at Drano Lake did generate a large opening-day crowd each Thursday which corresponded with a strong catch rate and therefore appeared to maximize the overall catch. The largest problem with the Thursday opener was the launching delay caused by many boats waiting to use the single developed boat ramp at the same time. During the peak day on Thursday, April 20, 186 boats were on the water at 8AM. Expansion of the parking lot and an additional ramp are included in planned development here.

The Klickitat fishery began slowly but a strong appearance of the Carson stock fish on April 27 started several weeks of good gorge fishery. An assessment of the harvest of Klickitat-stock fish made prior to the May 11 ventral-clip retention regulation, included a calculated catch of 39 adult and 49 jack chinook of Klickitat stock origin. The Carson stock portion of the catch was estimated to be 769 fish during the April-May census period (Table 5). As the season progressed in May, an increase in Klickitat-stock fish occurred which were mostly released as per regulations. Based on catch sampling and reported numbers handled, 271 Klickitat adults and 81 jacks were caught and released, chiefly during the last two weeks of May (Table 6). The census program was not continued beyond May. Sampling in early June, however, showed a greatly reduced fishery with 110 anglers checked with just one adult salmon and one steelhead. Most of the catch of spring chinook appeared to have occurred in April and May in the lower gorge. Few fish were checked in the area between No. 5 Falls and Klickitat Hatchery, in contrast to 1988 when a substantial catch occurred late in the season near the hatchery.

Summary

Sampling coverage of the 1989 emergency season spring chinook sport fisheries for Wind River, Drano Lake, and Klickitat River provided weekly data for reviews of each fishery.

Census period catch estimates included 1,107 in Wind River, 1,294 in Drano Lake, and 857 spring chinook in Klickitat River during April and May. Catch sampling rates were 26%, 36% and 47% respectively, with the lower Wind River sampling level associated with a 7-day per week season.

In-sample plus voluntary snouts totaled 164 from Wind River, 10 from Drano Lake, and none in the Klickitat River. These were mostly Carson Hatchery 5's.

Age 4 spring chinook predominated during the 1989 fisheries.

In the Klickitat River, regulations adopted to protect Klickitat stock adults while providing for a catch of Carson stock 4's were successful. The calculated catch in April and May included 769 (90%) Carson adults, 49 (6%) Klickitat jacks, and 39 (4%) Klickitat adults. This involved catch and release of 352 Klickitat stock springs.

Acknowledgements

The sampling crew included regularly scheduled technicians- John Brady, Brad Cady, Shane Hawkins, Rick Heitz, and Joe Hymer with occasional help from Cindy LeFleur and Hugh Fiscus.

Table 1. Bonneville Pool tributary sport catch of spring chinook, 1986-1989.

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
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
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	279	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	857	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.	

^{1/} 1989 Klickitat River catch value is a preliminary estimate for the key period of April 6-May 31. The 1986-1988 values are catch record card program results.

Table 2. Catch and mark rates in 1989 Bonneville Pool tributary sport fisheries for spring chinook.

Area	Dates	Anglers Interviewed	Catch Sample	Preliminary Catch Estimate	Mark Sample	In-sample CWT Recoveries
Wind River	4/6-12	14	0	3	0	0
	4/13-19	61	6	47	6	0
	4/20-26	215	32	124	31	6
	4/27-5/3	293	56	236	55	11
	5/4-10	364	91	315	111	21
	5/11-17	218	51	180	49	9
	5/18-24	134	24	129	22	6
	5/25-31	113	26	73	27	2
Total		1,412	286	1,107	301	55
Drano Lake	4/6-9	51	0	2	0	0
	4/13-16	452	57	119	57	1
	4/20-23	573	60	165	55	4
	4/27-30	477	146	378	148	3
	5/4-7	478	132	406	124	0
	5/11-14	229	80	224	74	0
	Total		2,260	475	1,294	458
Klickitat River	4/6-9	12	0	0	0	0
	4/13-16	12	0	2	0	0
	4/20-23	28	0	5	0	0
	4/27-30	298	122	277	110	0
	5/4-7	355	98	164	97	0
	5/11-14	311	98	165	106	0
	5/18-21	355	62	90	65	0
	5/25-31	211	22	154	27	0
Total		1,582	402	857	405	0

Table 3. CWT readings from Bonneville Pool tributary sport fisheries (excluding voluntary NT), 4/7 - 5/30, 1989.

Catch Area	Tag Code	FREQUENCY		Brood	Origin	
		In-sample	Voluntary			
Wind River	5-16-08		1	'84	Carson	
	5-16-10	1		'84	Carson	
	5-16-11	1		'84	Carson	
	5-16-12		1	'84	Carson	
	5-16-15	1		'84	Carson	
	5-16-21		1	'84	Carson	
	5-16-24	1		'84	Carson	
	5-18-11			1	'85 F ch	LWS
	5-18-13	1	1	'85	Carson	
	5-18-14		2	'85	Carson	
	5-18-15	1		'85	Carson	
	5-18-16	1	1	'85	Carson	
	5-18-17	3	2	'85	Carson	
	5-18-18	1	1	'85	Carson	
	5-18-19	8	4	'85	Carson	
	5-18-20	2	3	'85	Carson	
	5-18-21	4	3	'85	Carson	
	5-18-22	2	1	'85	Carson	
	5-18-23	1		'85	Carson	
	5-18-24	2	2	'85	Carson	
	5-18-25	3	5	'85	Carson	
	5-18-26	3	7	'85	Carson	
	5-18-27	5	2	'85	Carson	
	5-18-28	1	3	'85	Carson	
	5-18-29	2	10	'85	Carson	
	5-18-30	6	3	'85	Carson	
	NT	5				
		Total	55	54		
	Drano Lake	5-14-40	1		'84	Little White Salmon
		5-16-08		1	'84	Carson
5-18-14		1		'85	Carson	
5-18-17			1	'85	Carson	
5-18-18		1		'85	Carson	
5-18-21		2		'85	Carson	
5-18-22		1		'85	Carson	
5-18-25		1		'85	Carson	
5-18-29		1		'85	Carson	
	Total	8	2			

Table 4. Age composition of spring chinook sampled in the 1989 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	
Wind River	1/ 4/6-12							0
	4/13-19				6		1	7
	4/20-26				24		7	31
	4/27-5/3		1		51		2	54
	5/4-10		14		94		5	113
	5/11-17		4		40		5	49
	5/18-24				24		1	25
	5/25-31		5		20			25
	Total		24		259		21	304

Area	Fishery Period	No. fish sampled for age						Total	
		3 1	3 2	4 1	4 2	5 1	5 2		6 2
Drano Lake	4/6-9							0	
	4/13-16			3	54	1	5	1	64
	4/20-23			1	40		2	1	44
	4/27-30		1		133		8	1	143
	5/4-7	1	3	1	105		2		112
	5/11-14		6		59		1		66
	Total	1	10	5	391	1	18	3	429

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Table 4. Age composition of spring chinook sampled in the 1989 Bonneville Pool tributary sport fisheries.
(CONTINUED)

Area	Fishery Period	No. fish sampled for age						Total
		3 1	3 2	Carson stock		5 1	5 2	
Klickitat River ^{1/}	4/6-9							0
	4/13-16							0
	4/20-23							0
	4/27-30	1		99	3		7	110
	5/4-7		4	85	4		4	97
	5/11-14		3	103				106
	5/18-21		4	60	1			65
	5/25-31		5	22				27
Total	1	16	369	8		11	405	

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Regenerate scales aged by fork length and included in tabled numbers for Wind and Klickitat rivers.

Table 5. Stock composition of 1989 Klickitat River spring chinook sport catch.

Week	Estimated Catch	Composition of mark sample by stock and size				Proportion of catch mark-sampled	Calculated catch by stock and size (fish retained)				
		Klick. Adults	Carson Adults	Klick. Jacks	Total		Klick. Adults	Carson Adults	Klick. Jacks	Total	
4/6-9	0	0	0	0	0	0	0	0	0		
4/13-16	2	0	0	0	0	0	(2)		2		
4/20-23	5	0	0	0	0	0	(5)		5		
4/27-30	277	10	99	1	110	0.397	25	249	3	277	
5/4-7	164	8	85	4	97	0.592	13	144	7	164	
5/11-14	165	0	103	3	106	0.642	0	160	5	165	
5/18-21	90	1	60	4	65	0.722	1	83	6	90	
5/25-31	154	0	22	5	27	0.175	0	126	28	154	
Total	857	19	369	17	405	0.473	39	769	49	857	
							Proportion:	0.046	0.897	0.057	

Table 6. Estimated number of Klickitat stock spring chinook released during 1989 Klickitat River sport fishery.

Week	Estimated Catch	CATCH SAMPLE				Proportion of catch sampled	Calculated number of Klickitat stock released by size grouping		
		Chinook Released					Klick. Adults	Klick. Jacks	Total
		Chinook Retained	Klick. Adults	Klick. Jacks	Total				
4/6-9	0	0	0	0	0	0	0	0	
4/13-16	2	0	0	0	0	0	0	0	
4/20-23	5	0	0	0	0	0	0	0	
4/27-30	277	122	0	0	0.440	0	0	0	
5/4-7	164	98	1	0	0.598	2	0	2	
5/11-14	165	98	8	7	0.594	13	12	25	
5/18-21	90	62	32	4	0.689	46	6	52	
5/25-31	154	22	30	9	0.143	210	63	273	
Total	857	402	71	20	0.469	271	81	352	