

Snake River Spring Chinook Salmon Fishery Report, 2004

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June 2004**

The Snake River recreational spring chinook fishery opened April 16 and was set to run through May 31, 2004. Two areas of the Snake River were open for the fishery in 2004. The first area was from the Texas Rapids boat launch upstream to the Corps of Engineers boat launch (approximately one mile) upstream of Little Goose Dam on the south bank of the river; referred to as the Little Goose (LGO) fishery in this report. The second fishery area was from the mouth of Wawawai Creek (approximately three miles) upstream of Lower Granite Dam to Red Wolf Bridge in Clarkston and will be called the Lower Granite (LGR) fishery in this report.

The preseason run estimate was for 57,800 spring Chinook at Lower Granite Dam with about 25% estimated to be of wild origin. Our estimated harvest target was 2,000 hatchery adult spring chinook, with an allowable Endangered Species Act (ESA) impact of 116 wild fish mortalities (0.2% ESA impact on wild Chinook estimated at Columbia River mouth). Assuming a 10% mortality rate on released fish, this allowed for 1,156 wild adult encounters. These fisheries were open seven days per week, with daily hours set from one hour before sunrise to one hour after sunset. The daily limit for the season consisted of two hatchery (adipose fin-clipped) spring chinook salmon (adult or jack) per day, with a minimum size of 12 inches. Anglers were required to use barbless hooks, with hooks of no more than 5/8 inch from point to shank. In-season monitoring of spring chinook was used to reduce the estimated run size from 360,700 to approximately 200,000 fish. Estimates of harvest in lower river fisheries and the reduced run size prediction indicated the 2% ESA impact for non-tribal fisheries had been achieved, forcing the closure of the season on May 7, 2004.

The Washington Department of Fish and Wildlife monitored the fishery using a roving creel survey which included: boat ramp and shore interviews to collect catch rate, completed trip and biological information; and effort counts of shore anglers, boat anglers, and the number of boats (counts at least four times a day at LGO and at least three times a day at LGR). Monitoring was conducted at least one weekday and one weekend day per 7 day period, utilizing a dawn to dusk survey format. Creel surveys in both the LGO and LGR areas were conducted on 7 days (3 weekend days and 4 weekdays) of the season. The 22 day fisheries had 15 weekdays and 7 weekend days available (this included Friday April 16th as a weekend day, since it was opening day). We sampled 42% of weekend days and 27% of weekdays. Survey data were summarized weekly to assure compliance with the harvest target and ESA impact level that had been set for the fishery.

Creel Interviews

Interviews in the LGO area were conducted with 646 anglers with a total of 4,510.39 hours of fishing effort, but only 629 (97.4%) of these anglers were targeting spring chinook (4,407.72 angler hours). Other anglers interviewed were targeting sturgeon (1.4%), both sturgeon and

catfish (0.8%), and catfish (0.4%). Data collected during the creel surveys was entered into a spreadsheet that was used to calculate angler hours, total fish harvested, catch rate (hours/fish harvested and hours/fish caught), total fish released, release rate (hours/fish released), and fish size (min, max, and mean) (Table 1).

Table 1. Data summaries from Little Goose spring chinook fishery angler interviews, 2004.										
			Catch Rate			Chinook Released	Release Rate	Harvested Fish Size Fork Length (cm)		
	Angler Hours	Chinook Harvested	Hrs/Chinook Harvested	Hrs/Chinook Caught	Hrs/Chinook Released		Min	Max	Mean	
Weekday Shore	2,427.48	190	12.776	10.157	49	49.540	49.0	86.5	74.3	
Weekday Boat	42.00	2	21.000	10.50	2	21.000	74.0	78.0	76.0	
Weekend Shore	1,633.90	100	16.339	13.177	24	68.079	51.0	83.0	73.0	
Weekend Boat	304.34	6	50.723	50.723	0	0.000	49.0	78.0	69.7	
Total	4,407.72	298	14.791	11.817	75	58.770	49.0	86.5	73.8	

Interviews in the LGR area were conducted with 126 anglers with a total of 609.34 hours of fishing effort, but only 73 (57.9%) of these anglers were targeting spring chinook (421.35 angler hours), and six of the 73 chinook anglers were also targeting smallmouth bass at the same time. Of the other anglers interviewed 33.3% were targeting smallmouth bass, 3.2% were targeting catfish, 2.4% were targeting crappie, 1.6% were targeting northern pikeminnow, and 1.6% were targeting both catfish and smallmouth bass. Data collected during the creel surveys was entered into a spreadsheet that was used to calculate angler hours, total fish harvested, catch rate (hours/fish harvested and hours/fish caught), total fish released, release rate (hours/fish released), and fish size (min, max, and mean). Since no chinook were caught by interviewed anglers calculations for catch, harvest or catch rates are equal to zero (Table 2), although a few chinook were reported to have been harvested in this fishery.

Table 2. Data summaries from Lower Granite spring chinook fishery angler interviews, 2004.										
			Catch Rate			Chinook Released	Release Rate	Harvested Fish Size Fork Length (cm)		
	Angler Hours	Chinook Harvested	Hrs/Chinook Harvested	Hrs/Chinook Caught	Hrs/Chinook Released		Min	Max	Mean	
Weekday Shore	24.50	0	0.000	0.000	0	0.000	0.0	0.0	0.0	
Weekday Boat	194.52	0	0.000	0.000	0	0.000	0.0	0.0	0.0	
Weekend Shore	11.00	0	0.000	0.000	0	0.000	0.0	0.0	0.0	
Weekend Boat	191.33	0	0.000	0.000	0	0.000	0.0	0.0	0.0	
Total	421.35	0	0.000	0.000	0	0.000	0.0	0.0	0.0	

Creel interview data documented that 298 spring chinook were harvested and 75 spring chinook were released at LGO, and no spring chinook were caught or released at LGR. Fishery regulations identified that jacks were <24 inches or 61 cm total length. We estimated that jacks were <57cm fork length. Of the 298 hatchery chinook kept, 296 were sampled, consisting of 291 (97.7%) adults and 5 (1.7%) jacks. Interviews documented that 75 chinook were released; comprised of 71 (94.7%) wild adults, 2 (2.7%) hatchery adults, and 2 (2.7%) unknown jacks.

Fishery regulations called for harvest of hatchery adipose (Ad) clipped chinook. We confirmed that 291 adults and 5 jacks had “Ad” clips. The other 2 fish caught were not seen by the creel clerk (Table 3). We also recovered 10 coded wire tags (Table 4). Creel surveys also showed that two hatchery steelhead kelts (above Little Goose) and two bull trout (~12-14 inches, on the North Shore at Little Goose) were incidentally caught and released.

Marks	Adults	Jacks	Unknown	Total
Ad	291	5	0	296
Unknown	0	0	2	2
Totals	291	5	2	298

Tag Type ^b	Tag Code	Recovery Date	Length (cm)	Other Marks	Release Location	Stock
CWT	103608	04/22/04	81.5	Ad	Rapid River Hatchery	Rapid River
CWT	050491	04/25/04	76.0	Ad	Dworshak National Fish Hatchery	Dworshak
CWT	050491	04/25/04	72.0	Ad	Dworshak National Fish Hatchery	Dworshak
CWT	093440	04/25/04	77.0	Ad	Grande Ronde River	Grande Ronde River UPR
CWT	103609	04/28/04	65.0	Ad	Rapid River Hatchery	Rapid River
CWT	109671	04/28/04	74.0	Ad	Rapid River Hatchery	Rapid River
CWT	093440	05/02/04	71.0	Ad	Grande Ronde River	Grande Ronde River UPR
CWT	109671	05/02/04	68.0	Ad	Rapid River Hatchery	Rapid River
CWT	093433	05/04/04	72.5	Ad	Catherine Creek (Grande Ronde Trib.)	Catherine Creek
CWT	093444	05/06/04	73.5	Ad	Grande Ronde River	Grande Ronde River UPR

^a Tags were read by personnel in our office and have not been verified by the WDFW CWT lab.
^b CWT=coded wire tag

Expanded Fishery Results

Total calculated angler effort for the season was 18,956 hours at Little Goose and 3,619 hours at Lower Granite. Effort was calculated separately for boat and shore anglers, by day type (weekend or weekday), using the following formula:

Effort = # of hours/day x # of days available x average # of anglers (from the counts).

We used 15 hours/day as the available fishing time (# of hours/day) for the entire season. Since the data were stratified by weekend or weekday and boat or shore we first calculated effort in these categories and then summed them to estimate total effort (Tables 5 and 6, Appendix A and B). Completed angler days (for chinook fishermen) were calculated by averaging the number of hours in a complete trip from creel surveys. Getting information for complete trips was easier at Little Goose than at Lower Granite, because LGO has a lot of shore anglers in a small area (only about 5 miles of river) where LGR had ~26 miles of river open and many of the anglers were fishing from boats. For LGO the completed angler day was 6.47 hrs/day on weekdays and 7.04 hrs/day on weekends, while at LGR the completed angler day was 5.34 hrs/day on weekdays and 5.75 hrs/day on weekends. Dividing effort by the hours in an angler day provides the number of angler days for the season (Tables 5 and 6).

Table 5. Calculated expanded effort^a for the Little Goose spring chinook fishery, 2004.

	Number of Fishing Days	Average Number of Anglers/Day	Angler Effort (hrs)	Angler Days
Weekday Shore	15	47.0500	10,586.25	1,636
Weekday Boat	15	6.2000	1,395.00	216
Weekend Shore	7	48.5000	5,092.50	723
Weekend Boat	7	17.9286	1,882.50	267
Total			18,956	2,842

^a We used 15 hours as the available fishing day length. Shore anglers could only fish at the “Wall” at Little Goose Dam from 6:00 a.m. to 5 p.m. by Corp of Engineers rules. Our angler counts ranged from 7:00 a.m. to 8:00 p.m.

Table 6. Calculated expanded effort^a for the Lower Granite spring chinook fishery, 2004.

	Number of Fishing Days	Average Number of Anglers/Day	Angler Effort (hrs)	Angler Days
Weekday Shore	15	1.3750	309.38	58
Weekday Boat	15	6.4375	1,448.44	271
Weekend Shore	7	4.0909	429.55	75
Weekend Boat	7	13.6364	1,431.82	249
Total			3,619	653

^a We used 15 hours as the available fishing day length. Our angler counts ranged from 7:00 a.m. to 8:00 p.m.

Angler interview information (Table 1) and count data from Little Goose were expanded to estimate total harvest, the number of fish released and angler effort for the fishery. Since no fish were seen in the Lower Granite fishery no expansions could be made to estimate total harvest or number of fish released. By multiplying harvest and release rates and angler effort we estimated that 1,245 spring chinook were harvested and 357 spring chinook were released in the LGO fishery. Multiplying the original estimates by the proportions of sampled adults, jacks and unknown fish enabled us to estimate the number of adults, jacks, and unknown spring chinook harvested, as well as the number of wild adults, hatchery adults, and unknown jacks released (Table 7). By applying a 10% mortality rate to the number of wild adults released we estimate

that our ESA impact level was a total of 34 adult spring chinook, well below the allowable impact of 116 wild adults.

Table 7. Estimated number of spring chinook harvested and released during the Little Goose fishery, 2004.

	Estimated Number of Fish Harvested				Estimated Number of Fish Released			
	Adults	Jacks	Unknown	Total	Wild Adults	Hatchery Adults	Unknown Jacks	Total
Weekday Shore	810	14	6	830	203	6	6	215
Weekday Boat	65	1	0	66	63	2	2	67
Weekend Shore	305	5	2	312	71	2	2	75
Weekend Boat	36	1	0	37	0	0	0	0
Totals	1,216	21	8	1,245	337	10	10	357

Appendix A. Angler effort and harvest of spring chinook at Little Goose on the Snake River, 2004.

																				Totals			
				Count			Daily Averages			Average Catch Rates (hrs/fish kept)		Average Release Rates (hrs/fish released)		Angler Effort (hours)		Harvest of Chinook		Release of Chinook		Adult Chinook			
Month	Day	Day Type	Time	Number of Shore Anglers	Number of Boats	Number of Boat Anglers	Shore Anglers	Boats	Boat Anglers	Shore Anglers	Boat Anglers	Shore Anglers	Boat Anglers	Shore	Boat	Shore	Boat	Shore	Boat	Effort (hrs)	Harvested	Released	
4	16	WE	8:00	23	1	2																	
			11:00	25	1	2																	
			14:00	20	1	2																	
			17:30	2	0	0																	
4	25	WE	7:00	77	7	9																	
			10:00	77	19	36																	
			13:00	68	11	20																	
			16:00	33	6	11																	
			18:00	4	1	4																	
5	2	WE	7:00	98	26	58																	
			10:00	110	30	58																	
			13:00	100	21	44																	
			16:00	31	2	5																	
			19:00	11	0	0																	
Weekend Totals				679	126	251	48.5000	9.0000	17.9286	16.339	50.723	68.079	0.000	5,092.50	1,882.50	311.7	37.1	74.8	0.0	6,975.0	349	75	
4	22	WD	7:00	51	1	2																	
			10:00	71	0	0																	
			13:00	55	0	0																	
			16:00	21	2	4																	
			18:00	12	0	0																	
4	28	WD	7:00	37	0	0																	
			10:00	58	1	1																	
			13:00	59	1	1																	
			16:00	27	1	1																	
			18:00	9	0	0																	
5	4	WD	8:00	79	6	9																	
			11:00	79	7	12																	
			14:00	48	5	10																	
			17:00	14	0	0																	
			20:00	9	0	0																	
5	6	WD	7:00	92	6	12																	
			10:00	87	10	23																	
			13:00	76	12	26																	
			16:00	41	7	17																	
			19:00	16	2	6																	
Weekday Totals				941	61	124	47.0500	3.0500	6.200	12.776	21.000	49.540	21.000	10,586.25	1,395.00	828.6	66.4	213.7	66.4	11,981.3	895	280	
Season Totals				1,620	187	375								15,679	3,278	1,140	104	288	66	18,956	1,244	355	

Appendix B. Angler effort and harvest of spring chinook at Lower Granite on the Snake River, 2004.

																				Totals			
				Count			Daily Averages			Average Catch Rates (hrs/fish kept)		Average Release Rates (hrs/fish released)		Angler Effort (hours)		Harvest of Chinook		Release of Chinook		Adult Chinook			
Month	Day	Day Type	Time	Number of Shore Anglers	Number of Boats	Number of Boat Anglers	Shore Anglers	Boats	Boat Anglers	Shore Anglers	Boat Anglers	Shore Anglers	Boat Anglers	Shore	Boat	Shore	Boat	Shore	Boat	Effort (hrs)	Harvested	Released	
4	16	WE	9:00	0	3	5																	
			13:00	5	2	4																	
			17:00	0	5	10																	
4	25	WE	8:00	0	6	7																	
			11:00	10	11	18																	
			14:00	3	9	14																	
			18:00	4	3	4																	
5	2	WE	8:00	1	20	31																	
			12:00	6	18	28																	
			16:00	6	15	22																	
			20:00	10	3	7																	
Weekend Totals				45	95	150	4.0909	8.6364	13.6364	0.000	0.000	0.000	0.000	429.55	1,431.82	0.0	0.0	0.0	0.0	1,861.4	0	0	
4	22	WD	8:00	1	4	7																	
			11:00	3	5	6																	
			14:00	3	2	3																	
			17:00	0	0	0																	
4	28	WD	8:00	0	3	4																	
			11:00	1	4	5																	
			14:00	0	3	3																	
			18:00	0	2	3																	
5	4	WD	8:00	0	5	7																	
			12:00	1	7	11																	
			16:00	4	1	2																	
			20:00	2	1	1																	
5	6	WD	7:00	2	6	10																	
			11:00	0	13	22																	
			15:00	4	9	17																	
			19:00	1	1	2																	
Weekday Totals				22	66	103	1.3750	4.1250	6.4375	0.000	0.000	0.000	0.000	309.38	1,448.44	0.0	0.0	0.0	0.0	1,757.80	0	0	
Season Totals				67	161	253								739	2,880	0	0	0	0	3,619	0	0	