



Fish Passage Center

Weekly Report #99 - 27

September 10, 1999

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SUMMARY OF EVENTS:

Water Supply: Unseasonably cool weather continued during the past week with temperature departures of 2 to 9 degrees below normal. It is anticipated that increases in temperatures will occur during the coming weekend. Precipitation for the first week of September was below normal in the whole basin, excluding the areas of Upper Snake with 181% of normal and Columbia above Castlegar with 170% of normal. The lowest precipitations for the period of September 1 through 7 (in the range of 1-5%) were recorded in the areas of Clearwater, SE Washington, John Day basin, and Deschutes basin. Precipitation for Columbia above Coulee was 96% of normal, Snake River above Ice Harbor was 56% of normal and Columbia above The Dalles was 77 % of normal.

System Storage: Currently the hydro-system is operated primarily for power generation and local flood control. The remaining operations covered under the BiOp are refill of the Lower Snake reservoirs and drafting Dworshak reservoir to BiOp required elevation of 1520 ft. Ice Harbor, Lower Monumental and Little Goose reservoirs were refilled to their full pool elevations during the past week for facilitating the adult passage conditions at fish ladders.

- *Hungry Horse* is projected to continue drafting in the range of 2.5 kcfs during weekends and 4.5 kcfs during weekdays in the coming week. Current outflows for September 3 through 9 were in the range of 2.66 kcfs to 4.7 kcfs. BOR is planning to operate the reservoir to IRC defined by State of Montana, to an elevation of 3545 ft by the end of September. Minimum required flows at Columbia Falls for resident fish are 3.5 kcfs.
- *Libby* is projected to continue drafting at a rate of 12 kcfs in the coming week. Current outflows for

September 3 through 9 were decreasing from 10.19 kcfs to 6.46 kcfs. The reservoir has to be to an elevation of 2411 ft by the end of December. COE will attempt to operate the reservoir without spilling during the period of September through December and without ramping below 9 kcfs as requested for bull trout from State of Montana.

- *Arrow* reservoir will continue discharges in the range of 52 to 65 kcfs during next week.
- *Grand Coulee* continues to be operated for power requirements and kokanee spawning during the coming week. Current outflows fluctuated from 76.1 kcfs on September 4 to 128.3 kcfs on September 7.
- *Dworshak* reservoir is still drafting for flow augmentation of late fall chinook juvenile migration and adults. The outflow was decreased from 7.9 kcfs on September 5 to 2.4 on the following date. COE is planning to continue after the reservoir reaches 1520 ft with passing inflow or at the minimum 1.2-1.3 kcfs. Current inflows are in the range of 0.7-1.5 kcfs.
- *Brownlee* continues with planned operations for protection of the fall chinook spawning area below Hells Canyon Dam. Currently it is projected that the reservoir will be drafted to elevation of 2040 ft by September 26, and then to elevation of 2030 ft by mid October. Current outflows at Hells Canyon Dam are in the range of 8.77 kcfs to 12.89 kcfs. The reservoir was refilling during the past week of September 3 through 8 from elevation of 2044 ft to elevation of 2045.1 ft, decreasing already low flows at Lower Granite.

A summary of the current elevations on September 9 is given in the following Table:

Reservoir	Actual elev. As of September 9	Max Reservoir pool [ft]
Libby	2454.14	2459
Hungry Horse	3551.92	3560
Grand Coulee	1284.4	1290
Brownlee*	2045.1*	2077
Dworshak	1520.8	1600

*as of September 8

Upper Snake reservoirs:

BOR was delivering its portion of irrigation surplus water at a rate of 1.2-1.5 kcfs at Milner during this past week. This operation will continue through the second week of September followed by the delivery of IPCo portion of flood control water from American Falls at rate of 1.2 kcfs (not to exceed the hydraulic capacity of the Lower Salmon Falls). The total volume that IPCo will deliver in the period of mid September through the first week of October is 45 KAF. The system is currently at 70% of capacity (as of September 8). The major draft for flow augmentation continues to be from American Falls reservoir, currently at 50% of full capacity. Two other major reservoirs in the system, Palisades and Jackson Lake, are at 81% of full capacity and 86% of full capacity.

Boise and Payette River Basins:

The daily average outflow from the Boise River system continues to be 1.2 kcfs. The outflow from the system is expected to increase later during September to the range of 1.3 to 1.4 kcfs as the irrigation demands decrease. Currently the system is at 61% of capacity.

The Payette River system (Cascade and Deadwood) is at 74% of capacity as of September 9. The daily average outflow from the Payette river system decreased from 1 kcfs to 700 cfs during the past week as irrigation demands increased.

Streamflow: Bonneville Pool is being operated in the top foot of its operating range to facilitate the 1999 Treaty Fall Fishery. Flows at Lower Granite fluctuated from 17.6 kcfs to 31.2 kcfs during the week of September 3 through 9. It is anticipated

that the flows will be in the range of 18 to 24 kcfs next week. McNary daily average flows were fluctuating during the past week from 97.7 kcfs on September 5 to 163.3 kcfs on September 2.

The average discharges for the major run-of-river projects for August 27 through September 9 are given in the following table:

Project	Average Discharge [kcfs]	
	September 1-9	August 27-31
Priest Rapids	121.9	154.6
McNary	147.7	188.3
Lower Granite	27.5	29.9
Bonneville	150.9	192.2

Smolt Monitoring. Passage indices of subyearling chinook decreased over 50% at four out of five dams being monitored this week (Lower Granite, McNary, John Day and Bonneville dams). Although the current weekly average subyearling chinook passage index at Little Goose Dam was only 22% lower than last week, the average for the last five days of this week was 62% lower. After another week of no sampling at Lower Monumental Dam, sampling has resumed September 8 because of lower mortality in the facility's collections. Although Columnaris induced mortality decreased at Lower Monumental Dam this week, it increased at Little Goose Dam. A mini-tank truck is collecting salmonids from both Little Goose and Lower Monumental dams daily and transporting them to below Bonneville Dam in 5% saline treated water to reduce Columnaris impacts.

Adult Fish Passage: At Bonneville Dam, numbers of adult fall chinook peaked on September 4 this week with a daily count of 15,995; followed on September 5 with 15,283. By the end of the reporting week, September 9, the passage totals were back to nearly 7,000 per day. The cumulative count was 144,776, and this total exceeds the 1998 and 10-year average through September 9. Approximate breakout of "bright" fall chinook and "tule" fall to date is 115,000 and 29,700, respectively past Bonneville Dam (based on WDFW visual sampling at the dam). At The Dalles Dam, the daily counts of fall chinook ranged between a low count of 1,800 on September 3 to about 8,900 on September 6, with the cumulative total now 63,839 through September 8. Upriver bright fall chinook have been steadily moving upstream with 2,200 to 2,400 counted at McNary Dam the final four days of the report week. Most of the fall chinook passing McNary Dam will migrate to the Mid-Columbia to spawn. The count at Priest Rapids Dam was 14,159 well over twice the 1998 and 10-year average at the project. The turnoff into the Snake River averaged 119 per day this week with the cumulative count of adult chinook at Ice Harbor Dam being 1,878. This total was also double the 1998 or 10-year average.

Sockeye passage at upstream projects is nearing completion for the season with the 1999 sockeye run destined primarily to the Okanogan River basin (Lake Osoyoos) and the Wenatchee River basin (Lake Wenatchee). The sockeye count at Rock Island Dam was about 18,000 for the 1999 season. This total compares to 9,322 in 1998 and 37,398 for the 10-year average. As noted in previous reports, a small number of sockeye have migrated past Lower Granite Dam with seven known to have arrived at the Sawtooth Weir (upper Salmon R). These returning sockeye have all been adipose clipped hatchery fish that migrated from the upper Salmon River in spring of 1998.

At Bonneville Dam, B-Run steelhead counts ranged between 2,300 to 1,400 by week's end. The cumulative count at Bonneville Dam was 171,686, well above the 1998 count of 118,369 but slipped slightly below the 10-year average count of 178,219. The cumulative count of wild steelhead

surpassed 50,000 this week at Bonneville. Numbers of steelhead counted at McNary Dam were less than 1,000 per day for the week with the cumulative total to date of 42,162. The Snake River count at Ice Harbor decreased from about 1,000 per day early in the week to 700 by the end of the week. The cumulative total of 29,565 remained greater than double the 1998 total and still exceeds the 10-year average. Passage of steelhead into the Mid-Columbia remained fairly consistent throughout the week, between 100 to 170 per day. The cumulative steelhead count at Priest Rapids Dam was 4,958 through September 8. The 1999 count exceeds both the 1998 count and the 10-year average count.

Passage of coho salmon at Bonneville Dam increased throughout the week with daily counts ranging between 237 and 1,142 (peak day to date). The season total was 6,861 through September 9. The early returns at Bonneville are twice the 1998 count and 138% of the 10-year average for adult coho salmon.

Hatchery Releases: No releases were scheduled for the next two weeks. Numbers of juvenile hatchery fish released either in 1999 or late summer or fall 1998 that were expected to migrate in 1999 can be found in the FPC Web Page under 1999 Hatchery Release Schedule.

Daily Average Flow and Spill (in kcfs) at Mid-Columbia Projects

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/27/99	151.1	0.1	158.5	0.0	156.4	12.7	163.6	0.0	162.6	5.4	172.0	35.4	171.9	68.6
08/28/99	141.2	0.1	133.4	0.0	132.7	0.0	143.6	0.0	144.6	0.0	152.7	31.2	154.5	63.0
08/29/99	127.5	0.1	133.1	0.0	125.9	0.0	132.0	0.0	132.5	0.0	140.0	27.7	140.0	56.4
08/30/99	153.2	0.1	154.2	0.0	151.6	3.7	151.3	0.0	150.8	0.0	142.3	8.7	138.9	56.4
08/31/99	132.6	0.1	140.6	0.0	147.7	0.0	159.3	2.8	159.9	0.0	161.6	1.9	167.6	17.9
09/01/99	114.6	0.1	118.2	0.0	121.7	0.0	126.1	0.0	127.2	0.0	139.4	1.4	143.7	1.7
09/02/99	133.4	0.1	130.1	0.0	125.9	0.0	123.1	0.0	121.0	0.0	118.0	1.4	121.7	1.8
09/03/99	115.3	0.1	125.1	0.0	125.0	0.0	131.6	0.2	136.1	0.0	136.7	2.0	140.4	2.0
09/04/99	76.1	0.1	77.3	0.0	85.5	0.0	90.3	0.0	90.6	0.0	95.6	1.9	104.5	1.9
09/05/99	97.1	0.1	93.7	0.0	93.5	0.0	90.3	0.0	90.8	0.0	88.6	2.0	85.9	2.0
09/06/99	117.1	0.1	115.5	0.0	116.0	0.0	111.8	0.0	109.3	0.0	108.0	2.1	111.2	2.0
09/07/99	128.3	0.1	126.4	0.0	126.8	0.0	130.4	0.0	131.4	0.0	135.2	2.1	140.3	1.9
09/08/99	107.4	0.2	108.1	0.0	111.6	0.0	117.1	0.0	116.5	0.0	123.1	1.9	128.8	2.0
09/09/99	109.6	0.1	118.9	0.0	119.3	0.0	117.8	0.0	116.0	0.0	117.9	1.9	119.9	1.9

Daily Average Flow and Spill (in kcfs) at Snake Basin Projects

Date	Dworshak		Brownlee		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/27/99	10.1	0.0	12.7	14.5	31.8	0.0	32.2	0.0	32.2	0.0	34.1	26.9		
08/28/99	10.0	0.0	12.4	9.5	32.2	0.0	33.2	0.0	34.9	0.0	38.6	31.0		
08/29/99	10.0	0.0	12.6	11.8	29.2	0.0	29.3	0.0	29.9	0.0	30.2	22.2		
08/30/99	7.8	0.0	12.8	11.9	28.6	0.0	28.0	0.0	29.4	0.0	31.3	24.3		
08/31/99	7.8	0.0	12.8	11.7	27.6	0.0	27.7	0.0	27.9	0.0	28.0	20.9		
09/01/99	7.8	0.0	13.7	12.7	28.8	0.0	29.0	0.0	32.0	0.0	31.1	0.3		
09/02/99	7.8	0.0	12.7	14.2	27.7	0.0	26.5	0.0	25.3	0.0	20.6	0.0		
09/03/99	7.9	0.0	12.7	14.2	30.8	0.0	31.9	0.0	28.8	0.0	26.6	0.0		
09/04/99	7.9	0.0	12.6	14.1	31.2	0.0	30.4	0.0	30.3	0.0	30.5	0.0		
09/05/99	7.9	0.0	13.2	8.8	26.5	0.0	24.0	0.0	22.8	0.0	22.9	0.0		
09/06/99	2.4	0.0	12.0	8.7	20.7	0.0	19.1	0.0	20.4	0.0	20.5	0.0		
09/07/99	2.4	0.0	12.4	10.9	17.6	0.0	13.9	0.0	14.5	0.0	13.0	0.0		
09/08/99	2.4	0.0	13.9	10.7	23.2	0.0	17.5	0.0	17.9	0.0	17.5	0.0		
09/09/99	2.4	0.0	12.3	13.3	23.4	0.0	22.1	0.0	22.8	0.0	22.6	0.0		

Daily Average Flow and Spill (in kcfs) at Lower Columbia Projects

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
08/27/99	215.7	45.0	215.7	62.9	214.3	136.4	231.0	90.3	80.8	50.7
08/28/99	215.4	45.0	214.0	65.7	205.5	130.8	202.7	89.0	65.5	39.0
08/29/99	167.3	7.4	157.5	50.2	159.1	102.3	185.8	89.1	52.7	34.8
08/30/99	157.2	19.5	176.5	56.0	168.4	107.9	161.8	89.1	53.9	9.7
08/31/99	185.9	51.3	185.6	57.1	184.3	116.7	179.9	90.1	60.6	20.0
09/01/99	182.7	47.4	180.9	1.3	181.3	0.0	192.5	1.0	89.0	93.4
09/02/99	168.7	31.6	164.5	0.9	159.8	0.0	173.1	0.0	73.7	90.2
09/03/99	168.1	13.2	152.8	1.0	147.3	0.0	144.8	0.0	70.4	65.1
09/04/99	168.6	15.9	175.9	1.0	177.9	0.0	178.0	0.0	79.2	89.6
09/05/99	97.7	0.0	104.7	1.0	111.7	0.0	143.5	0.0	77.3	57.0
09/06/99	110.7	0.0	104.2	1.0	98.3	0.0	101.5	0.0	53.8	38.5
09/07/99	137.0	9.6	135.0	0.8	137.5	0.0	123.3	0.0	67.4	46.7
09/08/99	163.3	40.7	167.6	0.7	166.6	0.0	170.2	0.0	76.0	85.0
09/09/99	132.3	1.3	124.1	0.7	122.7	0.0	130.8	0.0	58.2	63.4

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Can. Boundary</u>			<u>Grand Coulee</u>			<u>Tlwr G. Coulee</u>			<u>Chief Joseph</u>			<u>Tlwr C. Joseph</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/27	113	114	114	24	116	117	117	24	112	113	113	24	113	113	114	24	112	112	114	22
8/28	114	114	114	24	116	117	117	24	113	113	113	24	114	114	114	24	113	114	115	20
8/29	114	114	114	24	117	117	117	24	113	113	115	20	113	114	114	23	113	113	114	22
8/30	113	114	115	24	116	117	117	24	113	113	114	24	113	113	113	23	112	113	114	23
8/31	112	112	113	24	115	115	116	24	112	112	113	24	111	111	112	23	111	111	112	22
9/1	112	113	113	24	114	115	115	24	111	112	112	24	111	111	112	23	111	111	112	23
9/2	112	113	113	24	114	115	115	24	110	111	111	24	111	111	112	23	112	112	113	23
9/3	112	113	113	24	114	114	114	24	110	110	111	24	111	111	111	23	112	112	113	23
9/4	110	111	113	24	114	114	114	24	110	111	111	24	110	110	111	23	111	112	112	23
9/5	110	111	111	24	114	114	115	24	110	110	111	24	110	110	110	23	110	111	111	23
9/6	110	111	112	24	113	114	114	24	109	110	110	24	109	109	110	23	110	110	111	23
9/7	109	109	110	24	112	112	113	24	109	110	110	24	108	108	109	24	109	109	110	24
9/8	110	111	115	24	112	112	112	24	109	109	110	24	108	109	109	23	109	110	111	23
9/9	117	118	119	24	112	112	113	24	109	109	110	20	110	110	111	23	110	111	112	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Wells</u>			<u>Rocky Reach</u>			<u>Tlwr Rocky R.</u>			<u>Rock Island</u>			<u>Tlwr Rock Isl</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>				
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>			
8/27	---	---	---	0	111	111	112	23	111	111	112	22	108	108	108	24	112	113	114	24
8/28	---	---	---	0	111	111	112	24	112	113	114	23	108	108	109	24	111	113	114	24
8/29	---	---	---	0	111	111	112	24	112	112	113	22	108	109	109	23	111	112	112	23
8/30	---	---	---	0	108	109	110	23	110	110	111	22	107	108	108	24	109	109	110	24
8/31	---	---	---	0	105	105	107	24	109	109	110	23	105	105	105	24	108	108	109	24
9/1	---	---	---	0	103	104	105	24	108	108	108	23	105	105	105	24	107	107	108	24
9/2	---	---	---	0	104	105	106	24	108	108	108	23	104	104	105	24	106	106	107	9
9/3	---	---	---	0	104	105	105	23	108	108	108	13	104	105	105	23	---	---	---	0
9/4	---	---	---	0	104	105	106	23	---	---	---	0	104	104	104	24	---	---	---	0
9/5	---	---	---	0	105	105	106	24	---	---	---	0	104	105	105	23	---	---	---	0
9/6	---	---	---	0	104	105	105	24	---	---	---	0	104	104	105	24	---	---	---	0
9/7	---	---	---	0	103	104	104	23	---	---	---	0	103	104	105	24	---	---	---	0
9/8	---	---	---	0	103	104	104	24	---	---	---	0	102	103	103	24	---	---	---	0
9/9	---	---	---	0	104	104	105	23	---	---	---	0	103	103	104	23	---	---	---	0

Total Dissolved Gas Saturation at Mid Columbia River Sites, and Dworshak

Date	<u>Wanapum</u>			<u>Dwns Wanapum</u>			<u>Priest Rapids</u>			<u>Dwns P Rapids</u>			<u>Dworshak</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>				
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>						
8/27	114	115	116	24	115	116	117	24	114	115	116	24	118	119	120	24	---	---	---	0
8/28	114	115	117	24	115	115	117	24	116	117	119	24	119	119	119	24	---	---	---	0
8/29	110	111	112	24	113	113	114	24	113	114	116	24	116	117	117	24	102	102	103	24
8/30	107	107	108	24	107	109	111	24	108	109	110	24	113	113	114	24	102	102	103	23
8/31	107	107	107	24	106	106	106	24	105	105	105	24	108	111	0	24	101	102	102	24
9/1	106	107	108	24	105	106	106	24	106	106	107	24	105	106	106	24	102	102	103	24
9/2	107	108	108	24	106	106	107	24	106	106	107	24	106	106	106	24	102	102	103	24
9/3	107	107	109	24	105	106	106	24	106	107	107	24	106	106	107	24	102	102	102	14
9/4	106	106	107	24	105	105	106	24	106	106	108	24	106	107	107	24	101	102	102	24
9/5	106	107	108	24	105	106	106	24	106	106	108	24	106	107	107	24	102	102	103	23
9/6	104	105	106	24	104	104	105	24	104	104	105	24	105	105	106	24	102	102	103	24
9/7	104	105	106	24	103	103	103	24	103	103	104	24	103	103	104	24	101	101	101	24
9/8	105	107	107	24	104	105	105	24	104	104	105	24	104	105	105	24	102	102	103	24
9/9	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102	103	103	24

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High

Total Dissolved Gas Saturation Data at Clearwater and Snake River Sites

Date	<u>Clearwater</u>			<u>Anatone</u>			<u>Snake-Lewiston</u>			<u>Lower Granite</u>			<u>Tlwtr L. Granite</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>
8/27	---	---	---	0	---	---	---	0	---	---	---	0	110	112	115	24	103	104	104	24
8/28	---	---	---	0	---	---	---	0	---	---	---	0	110	111	112	24	103	103	104	24
8/29	---	---	---	0	---	---	---	0	---	---	---	0	108	109	112	18	103	103	103	22
8/30	103	104	105	23	111	111	112	24	102	102	104	24	103	103	105	24	101	101	102	24
8/31	102	103	104	24	111	112	113	24	101	102	104	24	102	102	104	19	100	101	101	23
9/1	102	103	105	24	112	113	114	24	102	103	104	24	103	104	105	24	101	101	102	24
9/2	102	103	104	24	112	113	114	17	101	102	104	16	102	103	103	23	101	101	102	24
9/3	101	101	104	14	113	113	114	24	101	101	103	14	101	102	102	24	100	100	100	24
9/4	102	103	104	24	111	113	114	24	101	102	103	24	102	103	105	18	99	99	100	21
9/5	102	104	105	23	109	111	111	24	102	103	104	23	104	105	107	24	100	101	101	24
9/6	101	101	101	24	108	108	108	24	101	101	101	24	100	101	102	21	99	100	100	21
9/7	101	101	101	24	105	107	108	23	101	101	101	24	99	99	100	24	99	99	99	24
9/8	101	101	101	24	103	104	106	24	101	101	101	24	100	100	102	14	99	100	100	22
9/9	101	101	101	24	103	104	105	22	101	101	101	24	102	103	103	15	99	100	100	22

Total Dissolved Gas Saturation Data at Lower Snake River Sites

Date	<u>Little Goose</u>			<u>Tlwtr L. Goose</u>			<u>L. Monumental</u>			<u>Tlwtr L. Monum</u>			<u>Ice Harbor</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>
8/27	106	107	108	24	103	103	103	24	106	106	106	23	102	103	104	23	102	102	103	24
8/28	105	106	108	24	102	103	103	24	106	106	106	24	101	102	103	24	102	103	104	24
8/29	104	107	108	24	102	103	103	24	105	105	106	24	101	101	102	24	102	102	104	24
8/30	100	100	101	24	100	100	101	24	105	105	105	24	100	100	100	24	101	102	103	24
8/31	98	99	100	24	99	99	100	24	104	104	104	3	99	99	99	3	100	101	101	24
9/1	100	102	104	24	99	100	100	24	---	---	---	0	---	---	---	0	100	101	102	24
9/2	99	100	101	24	99	100	100	24	104	104	104	24	104	106	109	24	100	100	101	24
9/3	98	98	99	24	98	99	99	24	104	104	104	24	100	100	101	24	99	99	100	24
9/4	98	99	100	24	98	98	99	24	104	104	104	24	98	99	99	24	100	100	101	24
9/5	99	100	101	24	99	99	100	24	104	104	104	24	98	98	99	24	101	101	101	24
9/6	98	98	99	24	97	98	98	24	103	103	104	24	97	98	98	24	101	101	101	24
9/7	97	98	99	24	97	97	97	24	103	103	103	24	97	97	98	24	100	100	101	24
9/8	98	99	100	24	98	98	99	24	103	103	104	24	97	98	99	24	100	100	101	24
9/9	99	100	101	24	98	99	99	24	103	103	104	24	97	98	98	24	99	100	101	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>Twtr Ice Har.</u>			<u>Pasco</u>			<u>McNary-Oregon</u>			<u>McNary-Wash.</u>			<u>Tlwtr McNary</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>
8/27	110	112	113	24	---	---	---	0	108	109	111	24	110	112	114	24	114	114	115	24
8/28	109	112	114	24	---	---	---	0	111	113	116	24	113	114	114	24	114	114	115	24
8/29	105	108	112	24	---	---	---	0	111	112	114	24	112	113	114	24	112	112	114	24
8/30	107	111	113	24	---	---	---	0	108	109	110	24	109	110	110	24	111	112	113	24
8/31	109	111	114	24	---	---	---	0	105	105	106	14	106	106	107	14	112	112	113	14
9/1	103	104	114	24	---	---	---	0	105	105	106	24	105	105	106	24	112	113	114	24
9/2	101	101	103	24	---	---	---	0	103	104	105	24	104	105	106	24	110	111	111	24
9/3	100	100	101	24	---	---	---	0	105	106	108	22	106	107	108	22	108	111	112	22
9/4	100	101	101	24	---	---	---	0	105	105	108	24	105	106	107	24	108	110	111	24
9/5	101	102	103	24	---	---	---	0	105	106	108	24	104	105	105	24	104	104	105	24
9/6	102	103	103	24	---	---	---	0	104	104	105	24	103	103	103	24	102	103	103	24
9/7	102	104	105	24	---	---	---	0	103	104	105	24	103	104	105	23	105	108	110	24
9/8	102	103	104	24	---	---	---	0	103	103	104	24	104	105	106	24	110	111	111	24
9/9	101	102	103	24	---	---	---	0	103	105	105	24	103	103	104	24	104	105	108	24

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>John Day</u>			<u>Tlwtr John Day</u>				<u>The Dalles</u>			<u>Dnstr T. Dalles</u>			<u>Bonneville</u>						
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
8/27	109	110	111	24	111	113	115	23	110	113	114	23	116	117	118	23	114	115	115	24
8/28	106	106	107	24	109	112	113	23	107	109	110	24	114	116	117	24	114	114	115	23
8/29	105	105	105	23	107	108	111	23	106	107	110	21	113	114	116	24	110	111	111	21
8/30	104	104	104	23	110	113	117	24	105	108	109	23	113	114	114	24	107	107	108	22
8/31	102	103	103	23	107	110	112	24	105	108	111	23	114	115	116	24	106	106	108	22
9/1	103	104	105	23	104	104	106	24	106	109	113	23	107	111	116	24	110	111	113	23
9/2	103	103	104	23	102	103	103	24	102	103	105	23	102	103	107	24	113	114	115	23
9/3	102	102	103	23	101	101	102	24	101	101	102	23	101	101	101	24	109	111	113	23
9/4	101	101	102	23	101	101	101	24	101	101	101	22	100	101	101	24	106	107	109	23
9/5	101	102	102	23	100	101	101	24	101	101	102	23	100	101	102	24	103	103	103	23
9/6	101	101	101	23	100	101	102	24	100	100	100	22	99	99	100	24	101	101	102	23
9/7	102	103	103	24	100	100	100	24	99	100	100	24	99	100	100	24	101	101	101	24
9/8	103	103	104	23	101	102	103	24	100	101	101	23	100	101	101	24	101	101	102	23
9/9	102	102	102	23	100	101	102	24	101	102	102	23	101	101	101	24	101	102	102	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>Warrendale</u>				<u>Skamania</u>				<u>Camas/Wash.</u>			
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
8/27	115	115	117	19	117	119	121	24	115	116	118	24
8/28	115	116	117	19	117	119	120	23	114	116	117	24
8/29	114	115	117	22	115	117	119	23	112	113	113	24
8/30	113	115	118	23	117	119	121	23	110	111	112	24
8/31	112	114	116	23	116	118	121	23	111	113	115	24
9/1	109	110	115	23	110	111	117	23	111	112	114	24
9/2	111	112	112	23	112	112	113	23	108	110	111	24
9/3	109	111	113	22	109	111	113	23	110	111	111	24
9/4	106	107	108	23	106	107	108	23	106	108	109	24
9/5	102	103	103	23	102	102	103	23	103	104	106	24
9/6	101	101	101	23	101	101	102	23	101	102	102	24
9/7	101	101	102	24	101	101	101	24	101	102	102	23
9/8	101	101	102	23	101	101	101	23	101	102	102	23
9/9	101	102	102	23	102	---	---	23	101	102	102	24

Two-Week Summary of Passage Indices

Date	Yearling Chinook							Hatchery/Wild Combined			
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	0	1	---	0	0	0	0
08/28/99	---	---	---	---	0	1	---	0	19	0	0
08/29/99	---	---	---	---	0	1	---	0	0	0	0
08/30/99	---	---	---	---	0	0	---	0	0	15	0
08/31/99	---	---	---	---	0	1	---	0	0	0	0
09/01/99	---	---	---	---	0	0	---	---	0	0	0
09/02/99	---	---	---	---	0	1	---	---	0	0	9
09/03/99	---	---	---	---	0	1	---	---	0	0	0
09/04/99	---	---	---	---	1	2	---	---	0	0	0
09/05/99	---	---	---	---	1	0	---	---	0	0	0
09/06/99	---	---	---	---	1	2	---	---	0	0	0
09/07/99	---	---	---	---	0	0	---	---	0	0	0
09/08/99	---	---	---	---	0	0	---	---	0	0	0
09/09/99	---	---	---	---	0	0	0	---	0	0	0
Total:	0	0	0	0	3	10	0	0	19	15	9
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	0	1	0	0	1	1	1

Date	Wild Yearling Chinook						
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
08/27/99	---	---	---	---	0	0	---
08/28/99	---	---	---	---	0	0	---
08/29/99	---	---	---	---	0	0	---
08/30/99	---	---	---	---	0	0	---
08/31/99	---	---	---	---	0	1	---
09/01/99	---	---	---	---	0	0	---
09/02/99	---	---	---	---	0	0	---
09/03/99	---	---	---	---	0	0	---
09/04/99	---	---	---	---	1	0	---
09/05/99	---	---	---	---	0	0	---
09/06/99	---	---	---	---	0	0	---
09/07/99	---	---	---	---	0	0	---
09/08/99	---	---	---	---	0	0	---
09/09/99	---	---	---	---	0	0	0
Total:	0	0	0	0	1	1	0
# Days:	0	0	0	0	14	14	1
Average:	0	0	0	0	0	0	0

The data presented in the following passage index section is preliminary and has been derived from various sources. For verification and/or origin of data, contact the operators of the Fish Passage Data System at (503) 230-4099.

Smolt indices, wild & hatchery or combined, are presented in the following order: yearling chinook (chinook 1's), subyearling chinook (chinook 0's), steelhead, coho, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, which are collection counts divided by the proportion of water passing through the sampling system. Collection counts may be constrained due to sampling effort or river flow. Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations. The classes of counts presented in the report are defined below for each site. Most samples occur over a 24 hour period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Two-Week Summary of Passage Indices

Combined Subyearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	692	354	---	39	19,632	4,340	944
08/28/99	---	---	---	---	488	491	---	14	16,708	3,770	697
08/29/99	---	---	---	---	416	282	---	25	18,033	1,976	375
08/30/99	---	---	---	---	456	259	---	21	8,204	1,876	589
08/31/99	---	---	---	---	380	219	---	73	6,333	1,102	946
09/01/99	---	---	---	---	592	204	---	---	7,130	1,749	659
09/02/99	---	---	---	---	370	580	---	---	9,042	1,744	338
09/03/99	---	---	---	---	270	497	---	---	5,896	1,184	531
09/04/99	---	---	---	---	164	132	---	---	5,206	632	298
09/05/99	---	---	---	---	275	145	---	---	4,557	284	306
09/06/99	---	---	---	---	207	139	---	---	4,044	169	226
09/07/99	---	---	---	---	175	89	---	---	3,066	300	210
09/08/99	---	---	---	---	212	71	---	---	3,885	654	356
09/09/99	---	---	---	---	242	67	12	---	3,480	357	67
Total:	0	0	0	0	4,939	3,529	12	172	115,216	20,137	6,542
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	353	252	12	34	8,230	1,438	467

All Coho

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	0	2	---	0	0	8	0
08/28/99	---	---	---	---	0	3	---	0	0	0	0
08/29/99	---	---	---	---	0	1	---	0	0	0	0
08/30/99	---	---	---	---	0	5	---	0	0	0	0
08/31/99	---	---	---	---	0	3	---	0	0	0	0
09/01/99	---	---	---	---	0	4	---	---	0	0	0
09/02/99	---	---	---	---	0	3	---	---	0	0	0
09/03/99	---	---	---	---	0	4	---	---	0	0	0
09/04/99	---	---	---	---	0	0	---	---	0	0	0
09/05/99	---	---	---	---	0	2	---	---	0	0	0
09/06/99	---	---	---	---	0	1	---	---	0	0	0
09/07/99	---	---	---	---	1	0	---	---	0	0	0
09/08/99	---	---	---	---	0	1	---	---	0	0	0
09/09/99	---	---	---	---	0	1	0	---	0	0	0
Total:	0	0	0	0	1	30	0	0	0	8	0
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	0	2	0	0	0	1	0

Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts
 IMN (Collection) = Imnaha River Trap : Collection Counts
 GRN (Collection) = Grande Ronde River Trap : Collection Counts
 LEW (Collection) = Snake River Trap at Lewiston : Collection Counts
 LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts : Passage Index = (Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) })
 LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }
 LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }

Two-Week Summary of Passage Indices

Hatchery Steelhead											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	16	10	---	0	0	0	0
08/28/99	---	---	---	---	12	10	---	0	0	0	0
08/29/99	---	---	---	---	16	4	---	0	0	0	0
08/30/99	---	---	---	---	8	4	---	0	22	0	0
08/31/99	---	---	---	---	4	2	---	0	0	0	0
09/01/99	---	---	---	---	8	0	---	---	0	0	0
09/02/99	---	---	---	---	8	3	---	---	0	0	0
09/03/99	---	---	---	---	2	2	---	---	0	0	0
09/04/99	---	---	---	---	4	1	---	---	0	0	0
09/05/99	---	---	---	---	2	0	---	---	0	0	0
09/06/99	---	---	---	---	2	0	---	---	0	0	0
09/07/99	---	---	---	---	1	0	---	---	0	0	0
09/08/99	---	---	---	---	1	0	---	---	0	0	0
09/09/99	---	---	---	---	1	0	0	---	0	5	0
Total:	0	0	0	0	85	36	0	0	22	5	0
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	6	3	0	0	2	0	0

Wild Steelhead											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	0	0	---	3	0	0	0
08/28/99	---	---	---	---	4	0	---	0	0	0	0
08/29/99	---	---	---	---	4	1	---	0	0	0	0
08/30/99	---	---	---	---	0	1	---	0	0	0	0
08/31/99	---	---	---	---	0	0	---	0	0	0	0
09/01/99	---	---	---	---	8	0	---	---	0	0	0
09/02/99	---	---	---	---	0	0	---	---	0	0	0
09/03/99	---	---	---	---	1	0	---	---	0	0	0
09/04/99	---	---	---	---	0	0	---	---	0	0	0
09/05/99	---	---	---	---	0	0	---	---	0	0	0
09/06/99	---	---	---	---	0	0	---	---	0	0	0
09/07/99	---	---	---	---	0	0	---	---	0	0	0
09/08/99	---	---	---	---	0	0	---	---	0	0	0
09/09/99	---	---	---	---	0	0	0	---	0	0	0
Total:	0	0	0	0	17	2	0	3	0	0	0
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	1	0	0	1	0	0	0

Definitions for Smolt Index Counts.

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouses 1 & 2 Flow + Spill) }

MCN (Index)= McNary Dam Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }

BO1 (Index)= Bonneville Dam First Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 1 Flow / (Powerhouses 1 & 2 +Flow + Spill)}

Two-Week Summary of Passage Indices

Hatchery Sockeye											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	0	0	---	0	0	0	0
08/28/99	---	---	---	---	0	0	---	0	0	0	0
08/29/99	---	---	---	---	0	0	---	0	0	0	0
08/30/99	---	---	---	---	0	0	---	0	0	0	0
08/31/99	---	---	---	---	0	0	---	0	0	0	0
09/01/99	---	---	---	---	0	0	---	---	0	0	0
09/02/99	---	---	---	---	0	0	---	---	0	0	0
09/03/99	---	---	---	---	0	0	---	---	0	0	0
09/04/99	---	---	---	---	0	0	---	---	0	0	0
09/05/99	---	---	---	---	0	1	---	---	0	0	0
09/06/99	---	---	---	---	0	0	---	---	0	0	0
09/07/99	---	---	---	---	0	0	---	---	0	0	0
09/08/99	---	---	---	---	0	0	---	---	0	0	0
09/09/99	---	---	---	---	0	0	0	---	0	0	0
Total:	0	0	0	0	0	1	0	0	0	0	0
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	0	0	0	0	0	0	0

Wild Sockeye											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/27/99	---	---	---	---	4	2	---	0	19	0	0
08/28/99	---	---	---	---	4	1	---	0	0	0	0
08/29/99	---	---	---	---	0	1	---	0	18	0	0
08/30/99	---	---	---	---	0	1	---	0	0	0	0
08/31/99	---	---	---	---	0	0	---	0	0	0	0
09/01/99	---	---	---	---	8	0	---	---	0	0	0
09/02/99	---	---	---	---	1	0	---	---	0	0	0
09/03/99	---	---	---	---	0	1	---	---	0	0	0
09/04/99	---	---	---	---	0	1	---	---	0	0	0
09/05/99	---	---	---	---	0	1	---	---	0	0	0
09/06/99	---	---	---	---	2	0	---	---	0	2	0
09/07/99	---	---	---	---	1	0	---	---	0	0	0
09/08/99	---	---	---	---	2	0	---	---	0	0	0
09/09/99	---	---	---	---	3	0	0	---	8	5	0
Total:	0	0	0	0	25	8	0	0	45	7	0
# Days:	0	0	0	0	14	14	1	5	14	14	14
Average:	0	0	0	0	2	1	0	0	3	1	0

LEW and WTB data collected for the FPC by Idaho Dept. of Fish and Game.
 JDA and BO1 data collected for the FPC by National Marine Fisheries Service.
 RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.
 LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.
 LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife. IMN data collected for the FPC by the Nez Perce Tribe.

Cumulative Adult Passage at Mainstem Dams Through September 9, 1999

DAM	Spring Chinook						Summer Chinook						Fall Chinook					
	1999		1998		10-Yr Avg.		1999		1998		10-Yr Avg.		1999		1998		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	38,669	8,691	38,342	775	66,606	2,467	26,169	4,022	21,433	2,678	20,784	2,653	144,776	8,182	102,922	8,817	112,936	10,057
TDA	17,563	6,180	25,225	518	39,635	1,617	21,730	3,207	15,462	1,444	17,039	1,868	63,839	5,929	34,237	3,154	49,740	4,615
JDA	15,409	5,089	21,820	378	31,309	1,325	22,210	2,504	16,246	1,534	15,357	1,707	47,652	2,926	22,731	1,707	34,708	2,981
MCN	9,260	3,972	19,415	337	30,860	1,525	19,275	2,343	16,226	1,408	16,460	1,733	27,565	1,811	15,990	1,455	23,376	2,345
IHR	5,351	2,657	12,434	130	16,094	620	3,900	1,311	5,473	304	4,420	406	1,878	201	938	177	836	75
LMN	3,924	2,726	10,598	131	15,276	682	3,372	1,344	4,290	301	4,196	434	982	132	60	0	357	35
LGS	3,445	2,690	10,512	118	**	**	3,273	1,583	4,298	334	**	**	677	85	229	55	**	**
LWG	3,296	2,507	9,854	109	13,146	573	3,260	1,584	4,355	328	4,213	426	507	92	168	26	165	12
PRD	4,139	761	4,124	37	9,804	151	20,897	517	13,387	601	13,946	595	14,159	287	5,245	493	5,291	454
RIS	3,309	915	3,187	54	7,271	160	18,588	1,548	11,689	1,165	11,682	933	3,333	303	1,367	363	1,684	360
RRH	1,389	233	762	54	1,670	39	10,479	1,111	6,706	326	4,603	383	2,593	2,432	944	113	967	149
WEL	141	199	6	24	902	41	7,335	541	3,237	733	2,825	322	733	249	333	25	276	45

DAM	Coho						Sockeye			Steelhead			Wild 1999
	1999		1998		10-Yr Avg.		1999	1998	10-Yr Avg.	10-Yr			
	Adult	Jack	Adult	Jack	Adult	Jack				1999	1998	Avg.	
BON	6,861	725	2,997	210	4,981	1,004	17,874	13,218	44,503	171,686	118,369	178,219	50,531
TDA	995	108	51	6	421	169	13,713	8,823	35,471	98,685	32,190	76,010	30,846
JDA	640	105	94	14	303	141	14,889	9,829	36,719	76,203	37,192	50,941	21,661
MCN	47	1	11	0	41	26	11,780	9,390	38,691	42,162	18,857	39,635	9,840
IHR	0	0	0	0	0	0	8	7	8	29,565	12,010	20,150	5,433
LMN	0	0	0	0	0	0	11	1	7	19,939	7,319	15,067	3,447
LGS	0	0	0	0	**	**	16	5	**	14,913	4,885	**	3,153
LWG	0	0	0	0	0	0	14	2	5	15,106	6,598	11,962	3,130
PRD	46	4	20	0	3	0	16,360	10,766	43,383	4,958	2,717	4,696	***
RIS	0	0	0	0	5	0	18,311	9,322	37,798	3,584	1,640	3,508	1,039
RRH	22	0	0	0	0	0	14,115	5,670	18,744	2,425	1,388	2,245	367
WEL	0	0	0	0	0	0	12,213	4,497	17,547	1,604	678	1,527	203

These numbers were collected from the COE's Running Sums text files.

Wild steelhead numbers are included in the total.

LMN is through 9/6, RRH and RIS are through 9/7, PRD, WEL, LGS, LGR and TDA counts are through 9/8.

*WEL - WDFW was trapping Spring Chinook on both fish ladders.

**Adult count records at Little Goose Dam have been maintained since 1991, visual counts were not conducted at Little Goose Dam between 1982 and 1990.

***PRD is not reporting Wild Steelhead numbers.

Bonneville and Lower Granite were doing video counts only until April 1, 1999. These counts were 8 hour daytime video counts.

Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.

Historic counts 1997 to present were obtained from the Corps of Engineers.

No Video counts at Lower Granite Dam on 3/1/99 and 3/2/99.

Transportation Summary Report
Two-Week Transportation Summary
from 08/27/99 to 09/09/99

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	4	4,939	102	1	25	5,071
Bypassed	0	20	0	0	0	20
Trucked	4	4,814	100	1	21	4,940
Barged	0	0	0	0	0	0
Total Transported	4	4,814	100	1	21	4,940
LITTLE GOOSE DAM						
Collected	11	3,529	38	30	9	3,617
Bypassed	0	0	0	0	0	0
Trucked	6	3,136	38	30	7	3,217
Barged	0	0	0	0	0	0
Total Transported	6	3,136	38	30	7	3,217
LOWER MONUMENTAL DAM						
Collected	0	12	0	0	0	12
Bypassed	0	0	0	0	0	0
Trucked	0	10	0	0	0	10
Barged	0	0	0	0	0	0
Total Transported	0	10	0	0	0	10
M McNARY DAM						
Collected	15	95,626	20	0	36	95,697
Bypassed	0	0	0	0	0	0
Trucked	15	95,076	18	0	36	95,145
Barged	0	0	0	0	0	0
Total Transported	15	95,076	18	0	36	95,145
PROJECT TOTALS						
Collected	30	104,106	160	31	70	104,397
Bypassed	0	20	0	0	0	20
Trucked	25	103,036	156	31	64	103,312
Barged	0	0	0	0	0	0
Total Transported	25	103,036	156	31	64	103,312

**Transportation Summary Report
Cumulative Transportation Summary
through 09/09/99**

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	2,173,471	238,068	3,355,107	78,541	17,621	5,862,808
Bypassed	115,918	97	266,363	14,608	1,640	398,626
Trucked	32,282	141,899	34,597	1,424	1,528	211,730
Barged	2,011,776	94,052	3,053,028	62,315	14,012	5,235,183
Total Transported	2,044,058	235,951	3,087,625	63,739	15,540	5,446,913
LITTLE GOOSE DAM						
Collected	3,532,368	194,201	3,135,588	117,399	21,044	7,000,600
Bypassed	19,783	0	158,018	4,195	299	182,295
Trucked	8,528	111,657	4,286	1,045	610	126,126
Barged	3,481,142	77,971	2,969,994	111,937	18,954	6,659,998
Total Transported	3,489,670	189,628	2,974,280	112,982	19,564	6,786,124
LOWER MONUMENTAL DAM						
Collected	1,892,443	131,055	1,978,771	51,163	12,870	4,066,302
Bypassed	148,537	1	251,013	7,795	596	407,942
Trucked	5,482	97,150	2,234	128	214	105,208
Barged	1,736,425	33,327	1,724,869	43,237	12,032	3,549,890
Total Transported	1,741,907	130,477	1,727,103	43,365	12,246	3,655,098
MCNARY DAM						
Collected	2,104,592	4,179,685	537,674	140,758	782,890	7,745,599
Bypassed	2,098,392	801,225	532,579	137,083	781,069	4,350,348
Trucked	251	747,443	963	38	392	749,087
Barged	3,490	2,589,486	3,896	3,544	836	2,601,252
Total Transported	3,741	3,336,929	4,859	3,582	1,228	3,350,339
PROJECT TOTALS						
Collected	9,702,874	4,743,009	9,007,140	387,861	834,425	24,675,309
Bypassed	2,382,630	801,323	1,207,973	163,681	783,604	5,339,211
Trucked	46,543	1,098,149	42,080	2,635	2,744	1,192,151
Barged	7,232,833	2,794,836	7,751,787	221,033	45,834	18,046,323
Total Transported	7,279,376	3,892,985	7,793,867	223,668	48,578	19,238,474