



Fish Passage Center

Weekly Report #99 - 25

August 27, 1999

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SUMMARY OF EVENTS:

Water Supply: Precipitation was highest in the Klamath basin with 503% of average, and at Upper Deschutes/Crooked with 272% of average. The lowest precipitation was in the Upper and Middle Snake River basin in the range of 59%-69% and at Northeast Washington with 79%. Precipitation for the Columbia above Grand Coulee was 126% of normal and the Snake River above Ice Harbor was 94% of normal.

System Storage: Federal regulators continue to manage the system targeting minimum flows of 200 kcfs at McNary through the end of August. Higher than normal precipitation in the Upper Columbia resulted in reduced drafting of the reservoirs for summer flow augmentation. The fishery agencies requested that the remaining flow augmentation volumes from the reservoirs be drafted during September and used to refill Grand Coulee reservoir to improve conditions for the late fall chinook juvenile migration and for fall chinook spawners in the area below Bonneville Dam.

At the same time, meteorological conditions were not favorable for improving the low base flows in the Snake River during August. Flows at Lower Granite were substantially less than the minimum required by the Biological Opinion for migrating fall chinook during August. Drafting for flow augmentation from the Snake River basin continues to decrease as Biological Opinion reservoir draft limits dictate.

- *Hungry Horse* continues drafting for flow augmentation. The reservoir will be drafted to an elevation of about 3555 ft at the end of August, instead of an elevation of 3540 ft as required by the Biological Opinion. Current outflows for August 20 through 26 were in the range of 3.4 kcfs to 5.20 kcfs.

- *Libby* completed late refill on August 9, reaching an elevation of 2458.97 ft. Current outflow is in the range of 14.7 kcfs to 19 kcfs. The latest COE projections are showing that the reservoir will be drafted to an elevation of about 2456 ft at the end of August, instead of to an elevation of 2440 ft, as defined by the Biological Opinion.
- *Arrow* continues releasing outflows in the range of 80 kcfs to 85 kcfs. Late runoff caused higher flows than normal for this period of the year.
- *Grand Coulee* commenced drafting for flow augmentation during the August 23 through 26 period. Current outflows are fluctuating from 128.6 kcfs on August 21 to 160.9 kcfs on August 25. The latest flow projections show that the reservoir will be drafted to an elevation of 1285 ft by the end of August, instead of 1280 as required by the Biological Opinion.
- *Dworshak* reservoir commenced drafting for flow augmentation at Lower Granite on July 16. The reservoir was refilled to an elevation of 1593.35 ft as of July 16 instead of full pool elevation of 1600 ft as required by the Biological Opinion. The reservoir is currently drafting at a rate of 10 kcfs through August 29, when the outflow will decrease to 8 kcfs through September 5.
- *Brownlee* continues passing inflow in the range of 12.4 kcfs to 17.7 kcfs during August 18 through 24. It is projected that the reservoir will pass inflow through the end of August.

A summary of the current elevations on August 26 is given in the following Table:

Reservoir	Actual elev. As of August 26	Max Reservoir pool [ft]
<i>Libby</i>	2456.91	2459
<i>Hungry Horse</i>	3555.83	3560
<i>Grand Coulee</i>	1287.2	1290
<i>Brownlee*</i>	2046.74	2077
<i>Dworshak</i>	1532.51	1600

*as of August 25

Upper Snake reservoirs:

Flow augmentation to increase flow at Lower Granite began at the Upper Snake on July 1. BOR is obligated to deliver its portion of the flow augmentation from the Upper Snake system by the end of August. BOR is currently discussing operations in September with the State of Idaho. BOR is proposing to continue flows of 1.5 kcfs at Milner through September, but there is not yet a final decision. The system is currently at 75% of capacity. The major draft for flow augmentation continues to be from American Falls reservoir, currently at 57% of full capacity. Two other major reservoirs in the system, Palisades and Jackson Lake, are at 86% of full capacity and 90% of full capacity. Flows at Milner continue to be in the range of 1.5 kcfs to 1.6 kcfs.

Boise and Payette River Basins:

The Boise River system (Anderson Ranch, Arrowrock and Lucky Peak) is at 70% of capacity as of August 26. The daily average outflow from the Boise River system decreased to 1.2 kcfs with a portion of flow augmentation decreasing from 400 cfs on August 23 to 100 cfs on August 26. Flow augmentation commenced about July 5 and it is anticipated that it will continue through August 28 to 29. The Payette River system (Cascade and Deadwood) is at 79% of capacity as of August 26. The daily average outflow from the Payette river system continues to be about 1.3 kcfs. Current flow augmentation portion of the flow is about 900 cfs from the Deadwood reservoir. It is anticipated that the flow augmentation will cease on August 31.

Streamflow: The Biological Opinion summer flow targets are: 53.96 kcfs at Lower Granite and 200 kcfs at McNary. Flows at Lower Granite fluctuated from 31.5 kcfs to 37.8 kcfs during the week of August 20 through 26. It is anticipated that the flows will be in the range of 33 kcfs to 34 kcfs through the end of August. McNary daily average flows continued fluctuating during the past week from 194 kcfs on August 24 to 213.3 kcfs on August 20.

The weekly average discharges for the major run-of-river projects for August 13 through August 26 are given in the following Table:

Project	Average Discharge [kcfs]	
	August 20-26	August 13-19
<i>Priest Rapids</i>	154.0	176.1
<i>McNary</i>	197.5	223.04
<i>Lower Granite</i>	34.2	38.2
<i>Bonneville</i>	198.0	227.5

Spill: The Biological Opinion summer spill program is being implemented at Ice Harbor, John Day, The Dalles and Bonneville dams. Spill occurred at McNary Dam due to flows in excess of hydraulic capacity. Outflow at Dworshak Dam decreased to 10 Kcfs on August 23, terminating spill at that project.

The FERC summer spill program continued through the week at the Mid-Columbia projects. The spill rate at Wanapum Dam was increased to 20% and Priest Rapids Dam spill continues at 40%.

Total dissolved gas levels are remaining within the waiver limits. Monitoring for signs of gas bubble trauma (GBT) on fish collected through the Smolt Monitoring Program showed only a few fish with signs of GBT over the past week.

Smolt Monitoring. In the Snake River, subyearling chinook passage indices at Lower Granite dropped over 50% this week from last week's average. At Little Goose and Lower Monumental dams numbers were similar to last week. A Columnaris outbreak (a bacterial fish disease) was identified as the reason for the substantial facility mortality increases observed at Lower Monumental Dam. Efforts are being taken to transport fish from this facility on a daily basis and sampling has been temporarily stopped to minimize stress on these affected fish.

In the mid-Columbia River, subyearling chinook passage indices at Rock Island Dam decreased nearly 50% this week from last week's average. In the lower Columbia River, this week's subyearling chinook passage indices at McNary and John Day dams decreased to less than half of last week's level. Bonneville Dam's weekly average subyearling chinook passage index dropped over 25% from last week.

Adult Fish Passage: At Bonneville Dam, numbers of adult fall chinook remained fairly steady through the week with daily counts ranging between 2,100 to 3,900 for this report week, August 20 – 26. The cumulative count was 30,157. Through August 26, the fall chinook run was greater than the 1998 and 10-year average at Bonneville Dam. At The Dalles Dam, the daily counts of fall chinook ranged between 600 to 2,000 with the cumulative total now 14,993. These fish are moving upstream with greater than 5,300 past McNary Dam and 2,600 counted at Priest Rapids Dam. About 270 adult fall chinook have been counted at Ice Harbor Dam, and though this appears low, that total is greater than either the 1998 or 10-year average. All sites except for Wells Dam were reporting fall chinook; Well Dam will switch to fall chinook counting in next week's report.

Sockeye passage at upstream Mid-Columbia projects began reducing through the week, with about 20 per day counted toward the end of the week at the upper three dams. Based on the sockeye counts [through August 24] at Rock Island and Rocky Reach dams, it appears that about 80% have continued past Rocky Reach Dam and are

destined for Lake Osoyoos (Okanogan R basin). About 20% of the sockeye should be migrating up into the Wenatchee River and Wenatchee Lake basin.

At Lower Granite Dam, the sockeye count remained at 23 with these sockeye mainly comprised of adipose clipped fish (22 of 23) that were approximately 14-18 inches in length. Five sockeye arrived at the Sawtooth Weir during the past two and a half weeks. So far all returning sockeye have been hatchery reared fish.

At Bonneville Dam, the A-Run steelhead counts ranged between 3,200 and 3,800 for the week of August 20-26. The cumulative count at Bonneville Dam was 141,563, well above the 1998 count of 86,920 and exceeds the 10-year average count of 132,433. The count of wild steelhead is now 45,680. About 32% of the steelhead count to date at Bonneville Dam have been "wild" fish based on the presence of the adipose fin. About 41% of The Dalles passage were tallied as "wild" steelhead. The percentage of hatchery steelhead in the run has been increasing during the past few weeks. Daily steelhead counts increased at all Lower and Mid Columbia River dams. Overall, water temperatures have been well below last season; however a few of the projects are reporting at or near 70°F water temperature.

The steelhead count at Ice Harbor totaled 16,023 with the daily counts ranging between 500 to 1100 for the week. The Snake River count at Ice Harbor was double the 1998 total and now exceeds the 10-year average. The steelhead count at Priest Rapids Dam was 2,770 through August 25; however, daily counts rose to greater than 100 per day for most of the week. The 1999 count was greater than the 1998 count and was closing on the 10-year average.

A few coho salmon are now passing Bonneville Dam with the season total at 208 through August 26. The early returns at Bonneville are close to the 1998 and 10-year average for coho salmon. The projected return of coho salmon to the Columbia River mouth should show a good increase this season based on pre-season forecast by the Joint Staffs of WDFW and ODFW. The projected return of early run Coho is 235,300

(highest since 1991) with the late run Coho number projected to be 90,600 (highest since 1992).

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
08/13/99	173.5	0.2	181.6	0.0	190.4	12.9	189.0	22.1	184.5	20.2	190.5	33.6	195.3	79.5
08/14/99	137.7	0.1	142.6	0.0	152.0	11.6	164.4	3.2	167.1	20.3	181.1	23.6	188.3	75.9
08/15/99	134.0	0.1	131.8	0.0	134.8	11.6	133.8	0.0	133.4	20.3	135.2	12.8	139.5	56.3
08/16/99	171.7	0.1	173.9	0.0	182.8	11.6	178.7	7.1	174.5	20.4	168.9	15.0	170.0	68.8
08/17/99	158.8	0.1	163.3	0.0	166.2	29.0	168.4	6.4	166.8	20.3	177.7	16.8	182.7	73.1
08/18/99	160.7	0.1	161.4	0.0	164.7	25.2	166.9	0.3	167.5	20.3	175.1	16.8	176.5	71.7
08/19/99	154.6	0.1	157.5	0.0	161.5	22.6	166.6	9.3	166.8	20.3	177.9	30.6	180.2	72.0
08/20/99	141.8	0.1	147.0	0.0	144.4	17.0	154.7	0.0	156.3	20.5	163.5	28.9	167.4	66.7
08/21/99	128.6	0.1	125.2	0.0	128.9	11.6	130.6	0.0	132.6	20.3	130.3	22.7	128.6	51.8
08/22/99	132.6	0.1	128.6	0.0	129.3	12.5	134.1	0.0	133.1	20.4	137.4	23.4	138.4	55.6
08/23/99	146.6	0.1	152.8	0.0	154.8	26.3	156.6	0.0	156.6	16.4	161.3	27.9	160.5	64.5
08/24/99	154.4	0.1	152.1	0.0	153.3	23.4	152.5	3.4	152.1	9.9	160.5	34.2	160.1	64.8
08/25/99	160.9	0.1	160.7	0.0	161.6	18.3	169.5	0.5	170.0	9.9	165.8	33.4	163.7	65.2
08/26/99	---	---	156.5	0.0	153.5	15.8	---	---	---	---	160.5	32.8	159.1	64.8

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/13/99	14.2	4.1	13.4	11.1	41.1	1.0	40.0	0.0	41.5	0.0	42.2	32.3
08/14/99	12.9	3.0	13.8	11.7	36.3	0.5	34.7	0.0	35.7	0.0	37.9	30.8
08/15/99	13.2	3.0	13.9	13.7	38.5	1.0	39.5	0.0	41.9	0.0	45.0	37.7
08/16/99	13.0	2.8	14.9	19.4	37.9	0.4	37.5	0.0	38.3	0.0	42.8	34.1
08/17/99	12.8	3.2	14.3	11.4	41.3	0.5	41.4	0.0	42.3	0.0	43.1	35.7
08/18/99	12.9	2.7	13.6	12.8	36.1	1.3	36.8	0.0	39.1	0.0	42.8	35.3
08/19/99	12.6	2.3	13.5	16.9	36.2	0.0	35.0	0.0	36.5	0.0	39.3	28.3
08/20/99	12.6	2.3	13.3	12.1	37.8	0.0	38.0	0.0	39.6	0.0	41.6	34.1
08/21/99	12.6	2.2	12.4	12.5	37.1	0.0	38.1	0.0	38.2	0.0	42.5	35.1
08/22/99	12.6	2.2	12.1	15.0	32.0	0.0	32.6	0.0	34.4	0.0	36.4	29.2
08/23/99	10.0	0.1	13.4	15.3	31.7	0.0	33.1	0.0	33.4	0.0	36.3	29.0
08/24/99	10.0	0.0	13.0	10.6	35.2	0.0	34.2	0.0	36.2	0.0	37.7	30.9
08/25/99	10.0	0.0	13.8	11.2	31.5	0.0	30.4	0.0	33.5	0.0	36.6	29.3
08/26/99	10.1	0.0	---	---	33.9	0.0	33.5	0.0	34.1	0.0	37.0	29.3

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
08/13/99	238.5	77.6	238.5	67.2	240.4	151.7	237.6	86.8	87.8	53.8
08/14/99	239.1	81.2	231.9	70.9	223.6	143.3	242.3	86.6	85.9	60.6
08/15/99	190.2	35.4	202.4	62.9	204.5	130.3	229.4	86.2	80.1	53.9
08/16/99	212.9	62.4	212.4	60.3	207.7	132.3	202.2	88.6	65.0	39.4
08/17/99	239.0	80.7	230.8	64.2	227.2	143.9	223.0	89.9	77.9	46.0
08/18/99	221.6	68.8	223.4	63.3	217.9	138.3	224.7	89.9	76.2	49.3
08/19/99	220.0	63.0	219.2	61.9	216.6	136.6	233.4	89.0	76.4	58.8
08/20/99	231.3	75.5	220.9	64.7	214.7	137.8	210.1	89.6	61.6	49.7
08/21/99	195.8	27.0	195.7	56.8	196.3	124.5	224.6	88.9	72.7	53.6
08/22/99	164.6	0.0	169.8	49.2	168.5	107.1	183.4	91.1	40.2	42.9
08/23/99	194.6	30.3	199.1	58.5	192.9	118.7	191.1	89.4	52.5	39.9
08/24/99	195.8	36.2	184.8	55.8	179.2	115.2	194.4	89.7	49.7	45.8
08/25/99	197.0	38.4	191.6	59.2	182.0	116.4	191.0	90.2	54.6	37.0
08/26/99	203.6	38.3	190.3	57.4	190.8	120.6	191.2	90.6	55.2	36.2

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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#		
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg
8/13	116	116	117	23	116	116	116	23	112	112	112	23	112	112	113	24	111	112	113	24
8/14	115	115	116	23	116	116	117	23	111	112	112	23	112	112	114	22	113	115	---	22
8/15	116	117	118	22	116	116	116	22	112	112	113	22	112	112	112	19	114	115	119	19
8/16	120	121	122	24	115	115	116	24	111	112	112	24	111	111	111	23	111	112	113	22
8/17	121	121	122	24	115	115	116	24	111	112	112	24	112	112	113	23	111	112	113	23
8/18	121	121	122	24	116	116	117	24	112	113	114	24	113	113	113	23	112	113	113	22
8/19	119	120	121	15	116	116	116	24	112	113	113	24	113	113	113	23	112	113	114	23
8/20	115	115	116	23	115	116	116	23	112	112	113	23	113	113	113	24	112	112	114	24
8/21	114	115	115	24	115	115	116	23	112	112	113	24	112	113	113	24	111	112	113	24
8/22	111	112	113	24	114	114	115	24	112	112	113	24	112	112	112	23	111	112	112	23
8/23	112	113	115	24	115	115	116	24	112	113	113	24	112	113	113	23	112	112	113	21
8/24	113	113	114	24	115	116	116	24	113	113	114	24	113	113	114	23	113	113	114	22
8/25	113	114	114	24	115	116	117	24	113	113	113	24	112	113	113	23	112	113	114	23
8/26	113	113	114	24	116	117	117	24	113	113	113	24	112	112	112	23	111	112	113	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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#		
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg
8/13	---	---	---	0	112	113	116	24	115	116	119	21	109	110	111	23	116	118	120	21
8/14	---	---	---	0	110	111	111	21	112	112	114	11	109	110	111	20	115	115	116	18
8/15	---	---	---	0	109	109	110	22	110	110	111	21	107	107	109	22	114	115	115	20
8/16	---	---	---	0	108	108	108	23	109	110	111	22	107	107	107	22	113	113	114	22
8/17	---	---	---	0	109	109	110	24	110	111	112	23	107	107	107	24	113	114	114	18
8/18	---	---	---	0	111	112	114	24	112	113	116	23	108	108	108	24	114	114	115	24
8/19	---	---	---	0	112	113	115	24	115	116	117	22	108	108	109	24	116	117	119	24
8/20	---	---	---	0	113	113	114	24	114	115	115	23	109	110	111	24	117	117	120	9
8/21	---	---	---	0	112	113	114	24	112	113	114	23	109	109	110	24	---	---	---	0
8/22	---	---	---	0	111	111	112	24	111	111	112	23	108	109	109	24	---	---	---	0
8/23	---	---	---	0	111	111	112	24	111	111	112	22	108	108	108	24	114	114	114	14
8/24	---	---	---	0	112	113	114	24	113	114	116	23	108	108	109	24	114	114	115	24
8/25	---	---	---	0	113	114	114	24	114	115	117	23	109	110	110	24	116	117	117	24
8/26	---	---	---	0	111	112	113	23	111	112	113	22	109	109	110	23	114	115	115	23

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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#		
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg
8/13	111	112	112	24	113	114	115	24	113	114	115	24	117	117	118	24	109	110	110	21
8/14	110	111	112	24	112	113	115	24	114	116	116	24	118	118	119	24	106	107	108	24
8/15	110	111	111	24	111	111	112	24	110	110	111	24	114	115	116	24	107	107	107	21
8/16	111	111	112	24	111	112	112	24	110	111	112	24	116	117	117	24	106	107	107	21
8/17	112	113	114	24	111	112	113	24	112	113	113	24	117	118	119	24	107	107	107	22
8/18	112	113	113	24	112	113	113	24	112	113	114	24	117	118	119	24	107	107	108	24
8/19	110	111	111	24	112	113	113	24	112	113	113	24	117	117	118	24	105	106	106	22
8/20	112	113	114	24	113	114	115	24	113	114	114	24	117	118	119	24	106	106	107	24
8/21	110	110	112	24	112	113	115	24	111	112	113	24	114	115	117	24	105	106	107	24
8/22	111	113	115	24	111	112	114	24	110	111	112	24	114	115	116	24	105	105	105	24
8/23	113	116	117	24	114	115	116	24	114	114	115	24	117	118	119	24	102	103	105	24
8/24	113	114	114	24	115	116	120	24	115	115	116	24	118	118	119	24	102	102	103	24
8/25	111	111	112	24	113	114	115	24	114	115	116	24	117	118	119	24	102	102	103	23
8/26	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102	102	102	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	Clearwater			Anatone				Snake-Lewiston				Lower Granite				Tlwtr L. Granite				
	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/13	109	110	110	21	102	102	103	23	105	106	107	21	105	106	106	24	105	105	106	24
8/14	106	107	108	24	102	103	104	23	104	105	106	24	106	107	108	23	104	105	106	23
8/15	106	107	107	20	102	103	104	22	104	106	107	23	105	105	107	11	104	104	105	11
8/16	106	106	108	20	103	104	105	24	104	106	108	21	105	106	108	23	103	103	104	23
8/17	107	108	112	24	103	104	105	24	105	107	109	24	108	110	112	21	103	103	104	24
8/18	107	108	109	23	103	105	106	24	105	107	108	24	---	---	---	0	102	102	103	5
8/19	106	107	107	23	103	104	106	24	104	106	107	23	---	---	---	0	---	---	---	0
8/20	106	106	107	24	103	104	106	23	104	106	107	24	---	---	---	0	---	---	---	0
8/21	105	106	107	24	103	104	105	24	104	105	107	24	105	106	108	24	102	103	103	24
8/22	105	106	107	24	108	111	113	24	104	105	107	24	---	---	---	0	---	---	---	0
8/23	103	104	105	24	112	114	115	24	103	105	106	24	110	112	115	23	104	104	105	24
8/24	103	104	105	24	114	115	115	24	103	105	106	24	109	110	112	18	104	104	105	24
8/25	103	104	105	23	113	114	115	24	103	105	106	23	109	110	111	24	102	103	103	24
8/26	102	102	102	10	114	114	115	10	101	101	103	10	106	107	107	22	102	103	103	22

Total Dissolved Gas Saturation Data at Lower Snake River Sites

Date	Little Goose			Tlwtr L. Goose				L. Monumental				Tlwtr L. Monum				Ice Harbor				
	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/13	102	103	104	21	101	101	102	21	102	102	102	23	100	100	101	24	99	100	100	18
8/14	102	102	103	24	102	102	103	24	101	102	102	23	100	101	101	24	99	99	100	24
8/15	101	101	102	19	101	101	102	19	101	101	101	15	100	100	101	16	99	99	100	22
8/16	101	102	103	21	100	100	101	21	101	101	101	21	99	100	100	21	99	99	99	13
8/17	100	101	102	13	100	100	101	13	101	101	102	13	99	99	101	13	99	99	100	13
8/18	106	107	109	24	102	103	103	24	103	104	105	19	101	101	101	20	101	101	101	24
8/19	102	103	103	23	102	102	103	23	102	103	104	23	100	101	101	23	100	101	102	23
8/20	104	105	106	24	102	103	103	24	103	104	105	24	101	102	102	24	102	102	103	23
8/21	102	102	104	24	101	102	102	24	102	103	104	24	100	101	101	24	100	101	102	24
8/22	103	105	107	24	102	102	103	24	103	104	106	24	100	101	102	24	101	101	102	24
8/23	106	107	108	24	104	105	113	24	104	105	106	24	101	102	103	24	101	102	103	24
8/24	105	107	110	24	102	103	104	24	103	103	105	10	101	102	102	23	101	102	102	24
8/25	101	101	102	24	101	101	101	24	107	107	110	9	100	101	102	24	101	102	102	24
8/26	104	105	109	24	102	102	103	24	105	105	105	24	101	103	104	24	102	103	103	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	Twtr Ice Har.			Pasco				McNary-Oregon				McNary-Wash.				Tlwtr McNary				
	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#	24 h	12 h	High	#
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/13	111	112	114	18	---	---	---	0	106	107	108	24	107	107	108	24	115	116	117	24
8/14	111	113	114	24	---	---	---	0	105	105	106	17	106	106	107	17	115	116	118	17
8/15	111	112	113	22	---	---	---	0	106	107	108	21	107	107	107	21	112	113	114	21
8/16	111	112	114	13	---	---	---	0	107	107	109	14	107	107	108	14	113	113	115	15
8/17	109	110	114	13	---	---	---	0	108	109	109	18	110	111	111	19	116	116	117	18
8/18	111	113	114	24	---	---	---	0	110	111	112	24	110	111	113	24	116	116	117	24
8/19	111	113	115	23	---	---	---	0	111	112	115	24	111	112	113	24	115	116	116	24
8/20	111	112	114	24	---	---	---	0	112	113	116	20	112	113	114	21	116	116	116	21
8/21	111	113	114	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
8/22	109	112	114	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
8/23	108	112	112	24	---	---	---	0	109	110	111	24	111	113	115	24	111	112	113	24
8/24	111	113	114	24	---	---	---	0	110	111	113	22	111	111	112	22	114	114	115	22
8/25	110	112	113	24	---	---	---	0	109	109	110	23	109	110	110	23	113	114	114	23
8/26	110	113	113	24	---	---	---	0	109	110	112	24	110	111	112	24	114	114	114	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>TIwtr John Day</u>			<u>The Dalles</u>			<u>Dnstr T. Dalles</u>			<u>Bonneville</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>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>					
8/13	104	104	105	23	108	111	116	23	107	110	112	24	114	115	116	24	110	110	111	23
8/14	103	104	104	18	111	114	118	18	107	111	112	23	114	115	116	23	110	111	111	22
8/15	102	102	103	19	108	110	114	18	106	108	112	20	113	114	116	20	111	111	111	19
8/16	102	103	105	22	106	109	112	21	106	110	114	23	113	114	116	23	112	113	113	21
8/17	105	106	108	23	110	112	116	24	108	111	115	23	115	116	118	24	114	115	116	23
8/18	104	104	105	23	108	111	113	23	107	110	113	23	115	116	117	24	113	115	115	23
8/19	104	105	106	22	106	108	110	22	106	108	112	22	114	115	117	23	110	110	111	23
8/20	105	105	106	24	107	110	112	24	107	110	111	24	115	116	117	24	111	112	112	24
8/21	105	105	106	24	108	109	114	23	106	108	109	24	113	115	116	24	109	110	110	24
8/22	106	107	108	23	107	109	110	24	106	108	113	23	113	114	115	24	110	111	112	23
8/23	107	108	110	23	111	114	118	24	110	113	115	23	115	115	117	24	112	112	114	21
8/24	106	106	107	23	109	111	113	24	108	110	112	23	115	116	117	24	113	113	114	21
8/25	106	106	106	23	110	112	115	23	107	109	111	23	114	115	116	24	111	112	112	23
8/26	107	108	110	23	110	112	114	24	108	111	115	22	114	115	116	20	111	112	113	22

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>Warrendale</u>			<u>Skamania</u>			<u>CamasWash.</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>24h</u>		<u>12h</u>	<u>High</u>
8/13	111	111	111	21	114	116	118	24	111	112	114	24
8/14	112	113	114	22	114	115	117	22	112	113	114	22
8/15	112	113	114	17	115	116	118	19	112	113	116	19
8/16	114	114	114	20	116	117	120	21	113	115	117	22
8/17	115	115	116	23	117	118	119	23	115	117	118	24
8/18	114	115	116	23	117	118	120	23	114	115	116	24
8/19	113	113	115	20	115	116	117	23	113	115	116	24
8/20	114	115	117	24	115	116	117	24	113	114	116	24
8/21	112	112	113	21	114	115	117	24	112	113	115	24
8/22	114	115	116	23	115	116	117	23	113	115	116	24
8/23	115	115	117	21	117	119	122	23	113	115	116	24
8/24	115	116	118	21	117	118	119	23	114	116	117	24
8/25	114	116	117	22	116	118	121	23	114	115	117	24
8/26	114	115	116	22	117	118	120	23	114	115	118	20

Gas Bubble Trauma Monitoring Results from Representative Sites for Steelhead and Subyearling chinook on the Columbia River

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank				Fish with L. Line GBT	
								Rank 1	Rank 2	Rank 3	Rank 4	Num Fish	Avg. Rank
McNary Dam													
	08/19/99	Subyearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0.0
	08/23/99	Subyearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0.0
	08/26/99	Subyearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0.0
Bonneville Dam													
	08/19/99	Subyearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0.0
	08/23/99	Subyearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0.0
	08/26/99	Subyearling Chinook	43	0	0	0.00%	0.00%	0	0	0	0	0	0.0
Rock Island Dam													
	08/19/99	Subyearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0.0
	08/23/99	Subyearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0.0
	08/26/99	Subyearling Chinook	54	0	0	0.00%	0.00%	0	0	0	0	0	0.0

Two-Week Summary of Passage Indices

Yearling Chinook

Date	Hatchery							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)
08/13/99	---	---	---	---	0	10	0	0	0	0	0
08/14/99	---	---	---	---	0	5	0	0	0	0	0
08/15/99	---	---	---	---	0	2	0	0	0	0	0
08/16/99	---	---	---	---	0	0	0	0	0	0	0
08/17/99	---	---	---	---	0	1	0	0	0	0	0
08/18/99	---	---	---	---	0	4	0	0	0	0	0
08/19/99	---	---	---	---	0	3	0	0	0	0	0
08/20/99	---	---	---	---	0	1	0	0	0	0	0
08/21/99	---	---	---	---	0	2	0	0	0	0	0
08/22/99	---	---	---	---	0	1	0	0	0	0	0
08/23/99	---	---	---	---	0	2	0	0	0	0	0
08/24/99	---	---	---	---	4	0	0	0	0	0	0
08/25/99	---	---	---	---	0	3	0	0	0	0	0
08/26/99	---	---	---	---	4	0	0	0	0	---	0
Total:	0	0	0	0	8	34	0	0	0	0	0
# Days:	0	0	0	0	14	14	14	14	14	13	14
Average:	0	0	0	0	1	2	0	0	0	0	0

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
08/13/99	---	---	---	---	0	5	0
08/14/99	---	---	---	---	0	7	0
08/15/99	---	---	---	---	0	8	0
08/16/99	---	---	---	---	0	5	0
08/17/99	---	---	---	---	0	0	0
08/18/99	---	---	---	---	0	0	0
08/19/99	---	---	---	---	0	0	0
08/20/99	---	---	---	---	0	0	0
08/21/99	---	---	---	---	0	0	0
08/22/99	---	---	---	---	0	0	0
08/23/99	---	---	---	---	0	1	0
08/24/99	---	---	---	---	0	0	0
08/25/99	---	---	---	---	0	0	0
08/26/99	---	---	---	---	0	0	0
Total:	0	0	0	0	0	26	0
# Days:	0	0	0	0	14	14	14
Average:	0	0	0	0	0	2	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)
08/13/99	---	---	---	---	1,633	548	312	596	20,634	6,038	1,363
08/14/99	---	---	---	---	1,003	495	148	486	29,563	3,734	1,064
08/15/99	---	---	---	---	1,567	581	184	275	26,458	4,944	891
08/16/99	---	---	---	---	1,072	315	220	245	26,209	6,770	831
08/17/99	---	---	---	---	675	251	104	214	25,615	17,702	373
08/18/99	---	---	---	---	741	263	768	200	38,901	14,313	1,119
08/19/99	---	---	---	---	856	589	1,110	182	29,091	8,910	3,416
08/20/99	---	---	---	---	740	688	524	290	26,388	7,190	796
08/21/99	---	---	---	---	492	385	284	289	21,390	5,990	1,125
08/22/99	---	---	---	---	536	524	368	179	16,425	4,921	797
08/23/99	---	---	---	---	556	316	256	167	8,140	6,498	1,441
08/24/99	---	---	---	---	476	335	224	105	8,794	2,931	1,088
08/25/99	---	---	---	---	316	391	104	108	8,948	1,414	866
08/26/99	---	---	---	---	572	311	105	83	13,908	---	580
Total:	0	0	0	0	11,235	5,992	4,711	3,419	300,464	91,355	15,750
# Days:	0	0	0	0	14	14	14	14	14	13	14
Average:	0	0	0	0	803	428	337	244	21,462	7,027	1,125

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)
08/13/99	---	---	---	---	0	11	0	2	0	0	0
08/14/99	---	---	---	---	0	8	0	0	30	0	0
08/15/99	---	---	---	---	4	0	0	0	0	0	0
08/16/99	---	---	---	---	0	2	0	0	0	0	12
08/17/99	---	---	---	---	0	5	0	0	0	0	0
08/18/99	---	---	---	---	0	1	4	0	0	0	0
08/19/99	---	---	---	---	8	1	0	0	0	0	0
08/20/99	---	---	---	---	8	0	0	0	0	0	13
08/21/99	---	---	---	---	4	4	0	0	0	0	0
08/22/99	---	---	---	---	0	2	0	0	0	0	0
08/23/99	---	---	---	---	0	4	0	0	0	0	0
08/24/99	---	---	---	---	0	4	4	0	0	0	0
08/25/99	---	---	---	---	0	5	0	0	0	0	0
08/26/99	---	---	---	---	4	5	0	0	0	---	0
Total:	0	0	0	0	28	52	8	2	30	0	25
# Days:	0	0	0	0	14	14	14	14	14	13	14
Average:	0	0	0	0	2	4	1	0	2	0	2

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)
08/13/99	---	---	---	---	61	15	0	0	32	0	0
08/14/99	---	---	---	---	57	10	0	0	90	0	0
08/15/99	---	---	---	---	57	14	4	0	91	0	0
08/16/99	---	---	---	---	74	20	8	0	141	0	0
08/17/99	---	---	---	---	45	11	4	0	0	0	0
08/18/99	---	---	---	---	28	20	4	0	0	0	0
08/19/99	---	---	---	---	12	23	8	0	42	0	0
08/20/99	---	---	---	---	20	16	12	0	0	0	0
08/21/99	---	---	---	---	20	19	0	0	0	0	0
08/22/99	---	---	---	---	24	14	0	0	0	0	0
08/23/99	---	---	---	---	8	8	8	0	0	0	0
08/24/99	---	---	---	---	20	6	0	0	0	0	0
08/25/99	---	---	---	---	28	13	0	0	0	0	0
08/26/99	---	---	---	---	20	11	4	0	0	---	0
Total:	0	0	0	0	474	200	52	0	396	0	0
# Days:	0	0	0	0	14	14	14	14	14	13	14
Average:	0	0	0	0	34	14	4	0	28	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)
08/13/99	---	---	---	---	8	0	0	2	0	0	0
08/14/99	---	---	---	---	4	3	0	5	0	0	0
08/15/99	---	---	---	---	8	0	0	3	0	0	0
08/16/99	---	---	---	---	0	0	0	0	0	0	0
08/17/99	---	---	---	---	4	0	0	1	0	0	0
08/18/99	---	---	---	---	0	0	0	2	0	0	0
08/19/99	---	---	---	---	4	0	0	3	0	0	0
08/20/99	---	---	---	---	4	0	0	0	0	0	0
08/21/99	---	---	---	---	0	2	4	0	0	0	0
08/22/99	---	---	---	---	0	0	0	1	0	0	0
08/23/99	---	---	---	---	0	1	0	0	0	0	0
08/24/99	---	---	---	---	0	0	0	1	0	0	0
08/25/99	---	---	---	---	0	0	0	0	0	0	0
08/26/99	---	---	---	---	0	0	0	2	0	---	0
Total:	0	0	0	0	32	6	4	20	0	0	0
# Days:	0	0	0	0	14	14	14	14	14	13	14
Average:	0	0	0	0	2	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)	
08/13/99	---	---	---	---	0	0	0	0	0	0	0	
08/14/99	---	---	---	---	4	3	0	0	0	0	0	
08/15/99	---	---	---	---	0	0	0	0	0	0	0	
08/16/99	---	---	---	---	0	0	0	0	0	0	0	
08/17/99	---	---	---	---	0	0	0	0	0	0	0	
08/18/99	---	---	---	---	4	0	0	0	0	0	0	
08/19/99	---	---	---	---	0	1	0	0	0	0	0	
08/20/99	---	---	---	---	0	0	0	0	0	0	0	
08/21/99	---	---	---	---	0	0	0	0	0	0	0	
08/22/99	---	---	---	---	0	0	0	0	0	0	0	
08/23/99	---	---	---	---	0	0	0	0	0	0	0	
08/24/99	---	---	---	---	0	0	0	0	0	0	0	
08/25/99	---	---	---	---	0	0	0	0	0	0	0	
08/26/99	---	---	---	---	0	0	0	0	0	---	0	
Total:	0	0	0	0	8	4	0	0	0	0	0	
# Days:	0	0	0	0	14	14	14	14	14	13	14	
Average:	0	0	0	0	1	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)	
08/13/99	---	---	---	---	0	0	0	0	0	0	10	
08/14/99	---	---	---	---	0	0	0	2	0	0	33	
08/15/99	---	---	---	---	0	0	0	0	30	0	0	
08/16/99	---	---	---	---	0	0	0	0	0	0	0	
08/17/99	---	---	---	---	0	2	0	0	0	21	0	
08/18/99	---	---	---	---	0	1	0	0	45	0	0	
08/19/99	---	---	---	---	0	0	0	0	0	0	0	
08/20/99	---	---	---	---	0	1	0	0	0	0	0	
08/21/99	---	---	---	---	0	0	0	0	0	0	0	
08/22/99	---	---	---	---	4	0	0	0	32	0	0	
08/23/99	---	---	---	---	4	1	0	0	20	0	0	
08/24/99	---	---	---	---	0	2	0	0	0	0	0	
08/25/99	---	---	---	---	0	1	0	0	0	0	0	
08/26/99	---	---	---	---	4	0	0	0	0	---	0	
Total:	0	0	0	0	12	8	0	2	127	21	43	
# Days:	0	0	0	0	14	14	14	14	14	13	14	
Average:	0	0	0	0	1	1	0	0	9	2	3	

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 August 26, 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	30,157	2,683	28,319	1,472	25,438	1,779
TDA	17,563	6,180	25,225	518	39,635	1,617	21,730	3,207	15,462	1,444	17,039	1,868	14,993	2,348	9,278	627	11,385	848
JDA	15,409	5,089	21,820	378	31,309	1,325	22,210	2,504	16,246	1,534	15,357	1,707	9,361	727	4,184	345	6,253	525
MCN	9,260	3,972	19,415	337	30,860	1,525	19,275	2,343	16,226	1,408	16,460	1,733	5,309	463	2,272	326	4,372	451
IHR	5,351	2,657	12,434	130	16,094	620	3,902	1,311	5,473	304	4,420	406	272	19	158	28	148	14
LMN	3,924	2,726	10,598	131	15,276	682	3,372	1,344	4,290	301	4,196	434	84	15	49	12	57	7
LGS	3,445	2,690	10,512	118	**	**	3,273	1,583	4,298	334	**	**	83	21	57	12	**	**
LWG	3,296	2,507	9,854	109	13,146	573	3,259	1,584	4,355	328	4,213	426	66	21	35	5	37	2
PRD	4,139	761	4,124	37	9,804	151	21,897	517	13,387	601	13,946	595	2,612	55	723	140	1,295	146
RIS	3,309	915	3,187	54	7,271	160	18,474	1,506	11,689	1,165	11,682	933	995	124	255	118	502	114
RRH	1,389	233	762	54	1,670	39	10,287	1,027	6,706	326	4,603	383	823	750	221	22	260	41
WEL	141	199	6	24	902	41	6,784	454	3,177	723	2,733	308	0	0	0	0	0	0

DAM	Coho						Sockeye			Steelhead			
	1999		1998		10-Yr Avg.		10-Yr			10-Yr			Wild
	Adult	Jack	Adult	Jack	Adult	Jack	1999	1998	Avg.	1999	1998	Avg.	1999
BON	208	18	240	11	246	76	17,872	13,216	44,497	141,563	86,920	132,433	45,680
TDA	5	2	0	0	15	7	13,712	8,819	35,461	64,859	19,701	48,587	26,577
JDA	2	0	9	5	6	4	14,802	9,809	36,712	52,281	22,248	30,353	17,106
MCN	0	1	0	0	2	1	11,779	9,377	38,683	29,729	11,630	26,217	7,537
IHR	0	0	0	0	0	0	7	6	7	16,023	7,183	13,184	3,195
LMN	0	0	0	0	0	0	9	1	7	8,689	5,263	10,313	1,732
LGS	0	0	0	0	**	**	16	5	**	7,117	3,939	**	1,799
LWG	0	0	0	0	0	0	14	2	5	7,951	6,039	9,254	1,876
PRD	43	4	15	0	2	0	16,327	10,750	43,361	2,770	1,429	3,174	***
RIS	0	0	0	0	2	0	17,938	9,302	37,753	1,937	1,061	2,371	685
RRH	22	0	0	0	0	0	13,941	5,642	18,669	1,163	906	1,489	202
WEL	0	0	0	0	0	0	12,084	4,380	17,464	643	478	1,011	99

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

Wild steelhead numbers are included in the total.

LMN is through 8/22, RRH and RIS are through 8/24, PRD and WEL are through 8/25.

*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 08/13/99 to 08/26/99

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	8	11,084	500	28	20	11,640
Bypassed	0	18	0	0	0	18
Trucked	6	10,988	497	28	20	11,539
Barged	0	0	0	0	0	0
Total Transported	6	10,988	497	28	20	11,539
LITTLE GOOSE DAM						
Collected	60	5,992	206	52	12	6,322
Bypassed	0	0	0	0	0	0
Trucked	52	5,825	202	52	11	6,142
Barged	0	0	0	0	0	0
Total Transported	52	5,825	202	52	11	6,142
LOWER MONUMENTAL DAM						
Collected	0	4,711	56	8	0	4,775
Bypassed	0	0	0	0	0	0
Trucked	0	4,396	55	8	0	4,459
Barged	0	0	0	0	0	0
Total Transported	0	4,396	55	8	0	4,459
M McNARY DAM						
Collected	0	217,110	290	20	100	217,520
Bypassed	0	0	0	0	0	0
Trucked	0	216,096	290	19	100	216,505
Barged	0	0	0	0	0	0
Total Transported	0	216,096	290	19	100	216,505
PROJECT TOTALS						
Collected	68	238,897	1,052	108	132	240,257
Bypassed	0	18	0	0	0	18
Trucked	58	237,305	1,044	107	131	238,645
Barged	0	0	0	0	0	0
Total Transported	58	237,305	1,044	107	131	238,645

Transportation Summary Report
Cumulative Transportation Summary
through 08/26/99

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	2,173,467	233,129	3,355,005	78,540	17,596	5,857,737
Bypassed	115,918	77	266,363	14,608	1,640	398,606
Trucked	32,278	137,085	34,497	1,423	1,507	206,790
Barged	2,011,776	94,052	3,053,028	62,315	14,012	5,235,183
Total Transported	2,044,054	231,137	3,087,525	63,738	15,519	5,441,973
LITTLE GOOSE DAM						
Collected	3,532,357	190,672	3,135,550	117,369	21,035	6,996,983
Bypassed	19,783	0	158,018	4,195	299	182,295
Trucked	8,522	108,521	4,248	1,015	603	122,909
Barged	3,481,142	77,971	2,969,994	111,937	18,954	6,659,998
Total Transported	3,489,664	186,492	2,974,242	112,952	19,557	6,782,907
LOWER MONUMENTAL DAM						
Collected	1,892,443	131,043	1,978,771	51,163	12,870	4,066,290
Bypassed	148,537	1	251,013	7,795	596	407,942
Trucked	5,482	97,084	2,234	128	214	105,142
Barged	1,736,425	33,327	1,724,869	43,237	12,032	3,549,890
Total Transported	1,741,907	130,411	1,727,103	43,365	12,246	3,655,032
MCNARY DAM						
Collected	2,104,577	4,084,059	537,654	140,758	782,854	7,649,902
Bypassed	2,098,392	801,225	532,579	137,083	781,069	4,350,348
Trucked	236	652,367	945	38	356	653,942
Barged	3,490	2,589,486	3,896	3,544	836	2,601,252
Total Transported	3,726	3,241,853	4,841	3,582	1,192	3,255,194
PROJECT TOTALS						
Collected	9,702,844	4,638,903	9,006,980	387,830	834,355	24,570,912
Bypassed	2,382,630	801,303	1,207,973	163,681	783,604	5,339,191
Trucked	46,518	995,057	41,924	2,604	2,680	1,088,783
Barged	7,232,833	2,794,836	7,751,787	221,033	45,834	18,046,323
Total Transported	7,279,351	3,789,893	7,793,711	223,637	48,514	19,135,106