



Fish Passage Center

Weekly Report #99 - 16

June 25, 1999

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SUMMARY OF EVENTS:

Water Supply: A cold front that moved into Western Washington and Northwest Oregon produced widespread showers across the basin during last week. A trend toward warmer and drier conditions could be expected. Flows are slowly receding.

Precipitation above Grand Coulee was 81% of normal, the Snake River above Ice Harbor was 116% of normal and the Columbia above The Dalles was 86% of normal for the period of June 1-22. The subbasins with the highest precipitation continued to be in the Upper Snake with 164%, and Salmon/Boise/Payette with 125%. The lowest precipitation continued to be at Central Washington with 21% and the Upper Deschutes/Crooked with 23%.

System Storage: The major system reservoirs continue refilling toward the end of June Biological Opinion required full pool elevations.

- Hungry Horse is operated to the Integrated Rule Curves defined by the State of Montana. The reservoir is projected to be full by the second week of July, instead of June 30 as required by Biological Opinion. This operation will decrease flows during first two weeks of July at McNary. The actual daily average outflows continue to be in the range of 230 cfs to 2.11 kcfs.
- Libby continues to be operated for the sturgeon pulse. The outflows were decreased to 16 kcfs for two days during last week and then increased to level of 20-21 kcfs during June 21-24 period. Flow management for sturgeon requires incubation flows of 30 kcfs for 21 days after sturgeon pulse at Bonners Ferry, which is controlling Libby operations at this time. The reservoir is projected to be 10 ft from full by the end of the July, which also impacts summer flows at McNary.
- Arrow reservoir is holding its daily average outflow in the range of 15-17 kcfs. There is a

requested daily average outflow of 30 kcfs below Arrow for protecting trout redds but the upstream backwater effect of the higher flows in Kootenai River is providing a sufficient level of the protection. The reservoir is operated under US-Canada Treaty Agreement.

- *Grand Coulee* reservoir continues refilling toward its full pool elevation. Daily average inflows were in the range of 201.2 kcfs to 213.9 kcfs during the week of June 18-24. Daily average outflows were in the range of 91.3 to 163.8 kcfs during the same period.
- *Dworshak* reservoir continues to refill with minimum daily average outflows of 1.3 kcfs-1.4 kcfs since May 20. The latest SSARR is showing that the reservoir will refill only to 1589.5 ft by July 18, which is 10 ft below elevation required by BiOp at the end of June.
- *Brownlee* reservoir continued to refill during June 18-24 period. Daily average inflows continued to be high during the last week because of the increased precipitation at Mid and Upper Snake basins. Daily average outflows at Hells Canyon Dam were in the range of 31.9 to 43.4 kcfs during last week. The reservoir is projected to be full by June 30.

A summary of the current elevations on June 24 is given in the following Table:

Reservoir	Actual elev. As of June 24	Max Reservoir pool [ft]
<i>Libby</i>	2427.8	2459
<i>Hungry Horse</i>	3544.9	3560
<i>Grand Coulee</i>	1278.6	1290
<i>Brownlee</i>	2075.7*	2077
<i>Dworshak</i>	1570.9	1600

*as of June 23

Upper Snake reservoirs:

As of June 24, American Falls is full, Palisades is at 85% of full and Jackson Lake is 91% of full capacity. All major reservoirs have been refilled at a higher rate during last week because of intense precipitation in the region and decreased irrigation withdrawals, which resulted in continuation of the higher flows at Minidoka of 15.6 kcfs. The resulting daily average flow downstream of Milner is 7.2 kcfs, as of June 24. The system is at 94% of capacity.

Boise and Payette River Basins:

Both systems are almost or already refilled because of high precipitation in the basin. The Boise River system (Anderson Ranch, Arrowrock and Lucky Peak) is at 99% of capacity. The daily average outflow from Boise River system is 3 kcfs (as of June 24). The Payette River system (Cascade, Deadwood) is at 100% of capacity. The daily average outflow from Payette river system is 8.9 kcfs (as of June 24).

Streamflow: Biological Opinion summer flow targets are: 53.96 kcfs at Lower Granite, and 200 kcfs at McNary. Flows in the system continue to be in recession after this week's peak flows. Daily average flows at Lower Granite were gradually decreasing from 165.8 kcfs on June 19 to 121.5 kcfs on June 24. McNary daily average flows were fluctuating during the past week, from 343.6 kcfs on June 18 to 314.6 kcfs on June 22.

Daily average flows at Priest Rapids were fluctuating in the range of 152.8 kcfs to 212.1 kcfs in the period of June 18-24. The total range of daily and hourly fluctuations are presented in the following Table:

Date	Average Daily Flow at Priest Rapids [kcfs]	Hourly fluctuations [kcfs]
June 18	173.4	154.5-211.6
June 19	159.0	149.7-191.5
June 20	155.0	149.3-198.6
June 21	152.8	149.8-185.6
June 22	190.1	161.8-222.8
June 23	199.3	181.3-234.8
June 24	212.1	186.6-247.4

The average daily discharge for the major run-of river projects for June 11-24 period are given in the following Table:

Project	Average Discharge [kcfs]	
	June 11-17	June 18-24
<i>Priest Rapids</i>	190.6	177.4
<i>McNary</i>	318.2	335.0
<i>Lower Granite</i>	125.6	148.1
<i>Bonneville</i>	328.6	348.2

Spill: Outflow from Dworshak Dam continued at project minimum with no spill. The Biological Opinion spill program at the Lower Snake projects ended on June 20. The Biological Opinion summer spill program in the Snake only calls for spill at Ice Harbor Dam. Spill has occurred at all the Lower Snake projects over this past week because of flows in excess of hydraulic capacity. By week's end spill had been terminated at Little Goose and Lower Monumental dams as flows receded.

The Biological Opinion spring spill program will continue at the lower Columbia projects through June 30. Spill continues at McNary, John Day and Bonneville dams as mostly excess hydraulic capacity spill. The spill at The Dalles continues at research levels.

Total dissolved gas levels are above the waivers in the forebays of Little Goose, Lower Monumental, and Ice Harbor dams. Total dissolved gas levels remain well above the waiver limits in the tailrace of McNary Dam and just above the waiver in the tailrace at John Day Dam. The COE has reduced spill at John Day Dam to only 20-25% of the total daily river flow (approximately 65-70 Kcfs) in an attempt to meet the 120% total dissolved gas waiver in the tailrace. The state, federal and tribal fishery agencies have expressed concern regarding the reduction of spill as numbers of subyearling chinook passing this project began increasing significantly. Concern has been raised that the project is being operated outside the design performance curves for the spillway deflectors. Current spill levels are approximately what occurred at this project prior to the installation of the spillway deflectors. Potential operation scenarios based on the design performance curves,

and data from 1998 have been developed by the fishery agencies, but have not yet been accepted for implementation by the action agencies.

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. The Lower River projects are now sampling subyearling chinook for signs of GBT as numbers of yearling chinook and steelhead have decreased at these projects. Monitoring at the Snake River projects ended last week at Lower Granite and Ice Harbor dams. Monitoring at Little Goose and Lower Monumental dams was extended one week due to the uncontrolled spill in the Lower Snake.

Smolt Monitoring. The high flows from June 16 to June 22 (145-166 kcfs for seven days) in the Snake River help push increased numbers of the late migrating yearling chinook and steelhead to the dams of the lower Snake River during this week. These high flows have also moved more subyearling chinook to Lower Granite and Little Goose dams this week. These subyearling chinook should be predominately unclipped hatchery fish from the Big Canyon Creek and Captain Johns acclimation ponds. USFWS predicts that only 20% of the 1999 peak wild subyearling chinook run will pass Lower Granite Dam by July 27 due to this year's late emergence timing.

In the mid-Columbia River, subyearling chinook have dominated the Rock Island Dam collections since mid June, although wild and hatchery steelhead and coho have continued a relatively strong showing there this week.

In the lower Columbia River, subyearling chinook passage indices have increased rapidly since mid-June to levels above 100,000 fish per day for most of this week at McNary and John Day dams, reaching highs of 281,000 and 179,000 fish, respectively, near week's end. For the late migrating spring migrants, coho continues to be the most numerous fish at the lower Columbia River dams. Passage indices at Bonneville Dam have remained relatively low this week for all salmonids.

Adult Fish Passage: Summer chinook passage at Bonneville Dam increased this week with the counts ranging between 416 and 625 for the week ending June 24. Most summer chinook passing

Bonneville Dam will now be comprised of Mid-Columbia origin fish. The summer chinook count of 8,857 remained below the 1998 count as well as the 10-year average through June 24. The summer chinook count at The Dalles, John Day and McNary dams was 5,779, 5,245, and 2,769 respectively. The turnoff into the Snake River (Ice Harbor Dam count) was 2,026, with 562 summer chinook counted into the Mid-Columbia (Priest Rapids Dam count); both were less than the 1998 and 10-year averages.

Adult sockeye counts increased at Bonneville Dam and upstream projects through the week. The daily counts at Bonneville ranged between 189 and 585, with the total count through June 24 of 4,090. This total was slightly less than the 1998 count but only 33% of the 10-yr average. The sockeye total at McNary Dam was 907, with sockeye present at all Mid-Columbia projects this week. To date, no sockeye have been counted at Snake River projects.

Steelhead passage increased through the week at Bonneville Dam. Daily counts ranged between 137 and 270, with higher numbers occurring toward the end of the week. Through June 24, steelhead passage at Bonneville totaled 5,829 which was 80% of the 1998 total and 56% of the 10-year average.

Hatchery Releases: During the past two weeks, approximately 17.6 million anadromous salmon were released from hatcheries, acclimation ponds, or were directly planted into streams. The releases were primarily subyearling summer and fall chinook. This week's reporting should be near the end of the 1999 hatchery releases for the Columbia basin. More than 79 million juvenile salmon of hatchery origin were released into streams above Bonneville Dam for the 1999 Migration Year. The release schedule for hatcheries located above Bonneville Dam can be found at the FPC Web Site.

The FPC appreciated the assistance from hatchery release coordinators, hatchery managers, and other personnel who supplied hatchery release data throughout the 1999 fish passage season. We will be further finalizing hatchery release information through the end of the year to assure accuracy of data.

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
06/11/99	168.5	0.0	178.8	0.0	197.8	24.8	198.6	37.9	200.2	1.9	196.1	54.9	207.9	161.1
06/12/99	127.5	0.0	133.9	0.0	164.6	14.8	175.5	12.7	184.4	0.2	189.0	51.1	208.2	150.4
06/13/99	153.3	0.0	146.7	0.0	156.6	12.9	155.1	2.3	162.7	0.0	154.4	11.7	166.6	116.9
06/14/99	147.6	0.0	158.6	0.0	191.8	31.3	190.9	35.5	198.1	3.5	189.8	49.9	183.0	79.4
06/15/99	132.2	0.0	129.6	0.0	158.6	16.0	163.2	11.5	180.5	0.6	181.7	30.3	192.4	64.1
06/16/99	121.5	0.0	124.8	0.0	177.6	36.2	178.6	28.2	193.7	0.9	187.6	36.7	191.0	84.0
06/17/99	119.0	0.0	120.6	0.0	154.5	13.3	160.2	9.1	181.9	7.7	179.6	21.0	185.1	70.1
06/18/99	91.3	0.0	100.0	0.0	144.7	12.2	149.4	20.4	168.3	17.5	166.6	18.7	173.4	44.4
06/19/99	94.0	0.0	96.0	0.0	128.2	10.4	137.8	16.3	160.8	7.8	153.8	27.6	159.0	23.5
06/20/99	91.9	0.0	88.1	0.0	109.3	9.6	118.0	12.6	133.4	28.4	134.6	11.9	155.0	16.5
06/21/99	130.9	0.1	128.5	0.0	147.9	14.5	150.6	0.1	163.0	16.8	150.4	9.3	152.8	12.1
06/22/99	155.5	0.1	160.6	0.0	178.2	15.7	182.4	18.9	191.6	21.7	168.4	35.8	190.1	52.3
06/23/99	154.7	0.1	156.3	0.0	184.0	16.3	190.1	32.2	201.7	21.0	180.9	34.4	199.3	61.8
06/24/99	163.8	0.0	161.2	0.0	189.7	21.1	194.6	30.1	201.7	20.1	200.3	45.7	212.1	86.2

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

Date	Dworshak		Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
06/11/99	1.4	0.0	40.8	36.1	108.8	32.0	105.8	19.7	110.2	14.9	114.1	67.8
06/12/99	1.4	0.0	40.0	31.2	107.6	35.5	106.0	20.2	109.4	15.3	113.9	68.1
06/13/99	1.4	0.0	39.8	32.4	108.2	33.1	104.7	21.0	108.5	17.9	110.5	66.7
06/14/99	1.3	0.0	38.0	33.4	118.8	36.1	112.6	22.8	119.1	16.8	121.9	66.7
06/15/99	1.3	0.0	44.3	30.7	131.4	41.2	125.3	24.3	132.5	17.6	135.3	64.2
06/16/99	1.4	0.0	43.6	30.4	147.7	51.9	141.3	29.3	147.4	30.9	149.1	72.3
06/17/99	1.4	0.0	46.5	30.8	156.0	56.0	146.7	41.4	153.5	31.5	158.2	68.5
06/18/99	1.3	0.0	44.7	39.4	157.4	59.3	152.5	36.4	159.2	39.0	160.8	71.3
06/19/99	1.4	0.0	43.2	43.3	165.8	63.7	159.1	41.7	165.4	46.1	166.3	78.1
06/20/99	1.4	0.0	38.4	36.7	162.6	61.0	156.1	35.0	166.5	43.5	173.2	84.9
06/21/99	1.4	0.0	40.7	42.4	150.6	48.9	146.7	29.6	151.4	29.1	153.5	77.0
06/22/99	1.3	0.0	38.2	36.7	145.0	49.9	139.4	25.9	143.3	21.7	148.9	69.9
06/23/99	1.3	0.0	35.4	33.7	133.6	46.0	131.8	18.9	135.9	14.2	138.7	65.7
06/24/99	1.3	0.0	---	---	121.5	43.6	116.1	3.3	121.0	1.4	124.7	63.3

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		
06/11/99	297.0	129.4	312.9	54.3	306.7	195.8	332.1	114.7	83.1	125.1
06/12/99	315.2	148.7	331.7	105.2	330.5	127.2	321.6	107.0	83.2	122.2
06/13/99	299.8	136.9	302.8	95.8	293.0	89.5	305.2	89.8	82.5	123.7
06/14/99	299.7	136.5	323.4	103.3	317.7	99.8	332.0	114.4	80.2	128.2
06/15/99	321.0	171.1	293.2	54.8	281.8	160.5	308.3	88.2	80.9	130.0
06/16/99	334.3	173.6	348.2	74.4	343.7	207.3	327.8	117.4	73.5	127.7
06/17/99	360.7	196.3	380.1	99.4	369.4	210.0	373.0	154.5	74.6	134.6
06/18/99	343.6	182.0	350.6	95.2	340.9	128.0	359.3	133.2	84.9	132.0
06/19/99	336.0	171.5	359.6	80.8	350.1	104.1	346.7	116.8	85.1	135.6
06/20/99	336.9	172.9	352.1	79.3	340.4	102.2	349.0	118.3	85.4	136.1
06/21/99	326.5	167.5	332.1	64.6	326.8	179.4	348.9	124.1	84.0	131.6
06/22/99	314.6	150.1	331.9	65.1	324.1	200.8	332.3	109.6	85.9	127.6
06/23/99	352.3	195.2	359.6	71.6	351.3	207.9	346.4	118.9	87.0	131.3
06/24/99	---	---	355.2	70.0	351.5	131.3	354.8	131.1	85.7	129.1

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	Can. Boundary			Grand Coulee			Tlwtr G. Coulee			Chief Joseph			Tlwtr C. Joseph			#					
	24 h	12 h		24 h	12 h		24 h	12 h		24 h	12 h		24 h	12 h							
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High						
6/11	121	121	122	24	---	---	---	0	112	112	113	20	111	112	112	23	111	111	112	23	
6/12	120	120	121	24	---	---	---	0	112	113	114	20	112	112	113	24	112	113	113	24	
6/13	120	120	121	24	---	---	---	0	112	113	113	24	112	113	113	23	113	113	114	23	
6/14	121	122	122	24	---	---	---	0	113	113	114	24	113	114	114	24	113	113	114	24	
6/15	120	121	121	24	---	---	---	0	114	115	115	24	114	115	115	117	23	114	114	115	23
6/16	121	121	122	24	116	116	116	24	114	114	115	24	115	116	116	23	114	115	115	23	
6/17	121	122	123	24	115	115	115	24	113	114	114	24	115	116	117	23	115	116	122	23	
6/18	121	122	122	24	115	115	116	24	113	114	115	20	115	115	116	24	---	---	---	0	
6/19	121	121	122	24	115	115	115	24	---	---	---	0	115	115	115	24	---	---	---	0	
6/20	121	122	122	24	115	115	116	24	---	---	---	0	115	115	115	23	---	---	---	0	
6/21	122	122	122	24	115	116	116	24	113	113	114	24	115	115	115	23	---	---	---	0	
6/22	123	124	125	24	115	115	115	24	113	113	114	24	114	114	114	115	23	---	---	0	
6/23	123	123	124	24	114	116	117	24	113	113	114	24	113	113	114	23	---	---	---	0	
6/24	122	123	123	24	117	117	118	24	114	114	115	24	114	115	115	23	113	113	113	9	

note: monitors for Grand Coulee forebay and C. Joseph tailwater were malfunctioning.

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	Wells			Rocky Reach			Tlwtr Rocky R.			Rock Island			Tlwtr Rock Isl			#				
	24 h	12 h		24 h	12 h		24 h	12 h		24 h	12 h		24 h	12 h						
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
6/11	114	114	114	6	112	113	115	24	115	116	119	23	113	113	114	24	115	116	118	21
6/12	---	---	---	0	114	115	116	24	116	117	120	22	114	115	116	24	116	117	118	24
6/13	---	---	---	0	112	113	113	23	113	113	113	23	111	112	112	23	112	113	113	23
6/14	---	---	---	0	112	112	112	22	115	117	122	21	112	113	113	22	114	116	118	21
6/15	112	112	112	1	114	114	115	24	116	117	119	23	114	114	115	24	116	117	118	24
6/16	111	111	111	2	114	115	116	24	116	117	120	24	113	114	115	24	114	116	118	23
6/17	---	---	---	0	114	116	116	24	116	117	118	23	111	112	114	23	114	115	117	23
6/18	111	111	112	7	113	114	115	24	115	116	117	23	112	113	113	24	115	117	123	24
6/19	---	---	---	0	111	111	112	23	112	112	113	23	109	110	111	24	112	114	117	24
6/20	---	---	---	0	111	112	112	24	111	112	112	24	108	109	111	24	115	118	124	24
6/21	111	111	111	1	111	111	112	22	111	112	112	21	108	108	109	23	113	114	115	21
6/22	111	111	111	7	110	111	111	23	112	113	115	22	109	109	110	22	115	117	125	20
6/23	---	---	---	0	111	111	112	22	113	114	117	22	109	110	111	22	116	116	118	22
6/24	111	111	111	1	112	113	114	20	115	115	117	20	111	112	113	23	116	117	118	21

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

Date	Wanapum			Dwns Wanapum			Priest Rapids			Dwns P Rapids			Dworshak			#				
	24 h	12 h		24 h	12 h		24 h	12 h		24 h	12 h		24 h	12 h						
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
6/11	116	117	119	24	119	120	121	24	117	119	120	24	121	122	122	24	---	---	---	0
6/12	115	116	118	24	119	120	121	24	119	121	123	24	122	123	123	24	---	---	---	0
6/13	115	116	117	24	119	120	121	24	117	117	118	24	121	121	122	24	108	109	110	24
6/14	115	116	118	24	120	121	122	24	118	122	124	24	120	121	124	24	---	---	---	0
6/15	114	115	118	24	116	118	121	24	122	123	124	24	122	122	123	24	110	112	113	24
6/16	111	112	112	24	115	117	121	24	113	114	116	24	118	120	120	24	109	110	111	23
6/17	112	113	115	24	114	116	117	24	116	118	122	24	119	119	120	24	108	109	110	24
6/18	112	113	114	24	114	116	124	24	113	115	119	24	116	118	119	24	104	105	106	24
6/19	111	111	112	24	114	117	120	24	113	115	116	24	112	113	114	24	104	105	106	23
6/20	112	113	114	24	114	116	122	24	116	119	122	24	115	117	119	24	107	108	109	24
6/21	111	112	113	24	112	113	113	24	113	115	117	24	112	113	114	24	108	109	110	24
6/22	109	110	110	24	114	115	118	24	111	113	114	24	114	116	119	24	110	112	114	24
6/23	110	112	113	24	113	115	125	24	115	117	122	24	117	119	121	24	110	111	112	24
6/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	111	113	114	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				Tlwr 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		
6/11	---	---	---	0	108	108	109	24	103	104	105	24	108	108	110	24	114	119	120	24
6/12	---	---	---	0	108	108	109	24	103	104	105	24	108	109	110	23	113	118	119	23
6/13	---	---	---	0	107	107	107	24	102	103	104	24	108	109	111	24	113	118	120	24
6/14	---	---	---	0	107	108	108	24	103	104	104	24	108	109	110	24	114	119	120	24
6/15	---	---	---	0	108	108	109	24	103	105	106	24	107	107	107	5	120	120	120	5
6/16	---	---	---	0	107	108	109	24	103	104	104	23	---	---	---	0	---	---	---	0
6/17	---	---	---	0	108	109	110	24	104	104	105	24	107	108	109	23	118	118	122	13
6/18	---	---	---	0	109	109	110	24	103	104	105	24	107	107	108	24	121	121	122	24
6/19	---	---	---	0	110	110	111	24	103	104	104	24	107	107	108	24	122	123	124	24
6/20	104	105	105	24	110	111	111	24	103	103	104	24	108	109	109	24	122	123	126	24
6/21	103	104	104	23	109	110	110	24	102	102	103	24	108	109	109	24	118	119	121	24
6/22	103	104	104	23	109	110	110	24	102	103	104	24	107	107	108	24	119	120	121	24
6/23	104	105	105	24	109	109	110	24	103	104	105	24	107	108	109	24	118	120	122	24
6/24	103	104	104	24	108	108	109	24	103	103	104	24	108	108	109	24	118	119	122	24

Total Dissolved Gas Saturation Data at Lower Snake River Sites

Date	Little Goose			Tlwr L. Goose				L. Monumental				Tlwr 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		
6/11	115	118	121	24	116	118	118	21	119	121	123	24	118	119	120	24	117	118	119	24
6/12	116	118	120	23	117	117	118	8	119	120	121	24	119	120	120	24	118	119	120	24
6/13	116	118	122	24	---	---	---	0	118	119	121	24	118	119	121	24	119	119	119	24
6/14	118	120	122	24	116	118	118	24	118	119	121	24	120	121	124	24	119	120	121	24
6/15	116	118	121	24	116	118	119	24	119	120	121	24	120	122	123	24	119	119	120	24
6/16	113	113	115	9	117	117	118	8	117	118	119	24	121	124	127	24	117	118	119	24
6/17	115	116	118	24	119	120	121	24	116	118	118	24	122	124	127	24	117	117	118	24
6/18	117	118	119	24	118	120	120	24	118	120	121	24	123	125	128	24	117	117	118	24
6/19	117	117	118	24	119	120	124	24	117	118	120	24	125	126	128	24	116	116	117	24
6/20	119	120	121	24	118	118	119	24	119	119	120	24	125	126	128	24	118	118	119	24
6/21	120	121	121	24	118	119	120	24	119	119	119	24	121	122	125	24	118	119	119	24
6/22	116	118	119	24	116	116	119	24	117	117	118	24	117	119	121	24	117	117	117	24
6/23	114	115	118	24	113	115	116	24	116	116	117	24	115	117	120	24	115	115	117	17
6/24	117	117	118	24	115	117	117	24	115	116	116	24	113	115	118	24	116	116	116	7

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	Twtr Ice Har.			Pasco				McNary-Oregon				McNary-Wash.				Twtr 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		
6/11	117	119	120	24	---	---	---	0	116	117	119	24	116	116	117	24	121	121	121	24
6/12	117	119	120	24	---	---	---	0	116	117	117	24	116	117	117	24	121	122	123	24
6/13	117	119	121	24	---	---	---	0	117	118	119	24	118	120	121	24	121	121	122	24
6/14	117	119	121	24	---	---	---	0	118	119	120	24	119	120	120	24	121	121	123	24
6/15	118	120	121	24	---	---	---	0	119	120	123	23	119	120	121	23	123	124	125	23
6/16	119	120	122	24	---	---	---	0	117	118	119	24	116	116	117	24	123	124	124	24
6/17	118	120	121	24	---	---	---	0	115	116	117	24	115	117	118	24	124	125	125	24
6/18	119	119	122	24	---	---	---	0	113	114	114	24	114	114	115	24	123	124	124	24
6/19	119	120	123	24	---	---	---	0	112	113	114	24	113	113	114	24	123	123	124	24
6/20	121	121	122	24	---	---	---	0	113	114	114	24	113	113	114	24	123	124	124	24
6/21	119	120	121	24	---	---	---	0	113	114	115	21	111	112	113	21	123	123	124	21
6/22	118	118	120	12	---	---	---	0	112	113	113	24	110	111	112	24	121	122	123	24
6/23	113	113	116	5	---	---	---	0	112	114	116	24	112	113	115	24	124	125	125	24
6/24	119	119	120	7	---	---	---	0	112	112	114	9	112	112	114	9	123	123	124	9

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>Twtr John Day</u>			<u>The Dalles</u>			<u>Dnstr T. Dalles</u>			<u>Bonneville</u>						
	<u>24 h</u>	<u>12 h</u>	High	#	<u>24 h</u>	<u>12 h</u>	High	#	<u>24h</u>	<u>12h</u>	High	#	<u>24h</u>	<u>12h</u>	High	#	<u>24h</u>	<u>12h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
6/11	113	115	116	24	118	122	123	24	110	112	113	24	121	121	122	24	112	116	118
6/12	117	119	121	24	122	122	123	24	112	113	114	23	119	120	122	24	109	109	110
6/13	119	119	120	23	122	122	123	24	113	114	115	23	119	120	121	24	108	108	110
6/14	119	120	122	24	123	123	123	24	115	116	117	23	120	121	122	24	108	109	110
6/15	118	119	119	23	120	122	122	24	114	115	117	23	121	121	122	24	108	109	110
6/16	116	116	117	23	121	123	124	21	111	111	112	23	120	120	121	24	105	105	106
6/17	114	114	115	23	124	124	124	24	111	112	112	23	120	121	121	24	107	107	108
6/18	112	112	113	24	123	123	123	24	110	110	111	24	117	118	121	24	107	108	108
6/19	111	111	112	24	123	123	124	24	109	110	110	24	115	116	117	24	105	106	107
6/20	112	113	113	23	123	123	123	24	109	110	110	23	115	116	117	24	105	105	106
6/21	111	111	112	23	120	122	123	24	109	110	110	23	118	119	119	24	105	105	106
6/22	110	110	111	23	119	121	121	24	107	107	108	23	118	118	119	24	104	105	105
6/23	109	110	110	23	120	121	123	23	107	109	110	23	118	119	120	24	104	105	106
6/24	110	110	110	23	120	121	121	24	108	109	109	23	116	118	121	24	105	106	106

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>	High	#	<u>24 h</u>	<u>12 h</u>	High	#	<u>24h</u>		<u>12h</u>	High
	Avg	Avg			Avg	Avg			Avg		Avg	
6/11	120	121	121	24	119	120	120	24	119	120	120	24
6/12	119	120	120	24	120	120	120	24	119	120	121	24
6/13	117	119	120	23	118	119	120	23	120	121	122	24
6/14	119	119	120	24	119	119	120	24	118	120	121	24
6/15	117	118	120	23	117	119	120	23	118	119	119	24
6/16	116	117	117	23	116	116	116	23	116	117	118	24
6/17	119	120	120	23	118	119	120	23	118	119	119	24
6/18	118	119	120	24	118	119	120	24	119	119	120	24
6/19	117	117	118	24	117	118	118	24	118	119	120	24
6/20	117	117	117	23	116	116	117	23	117	117	118	24
6/21	116	117	117	23	116	117	117	23	116	117	117	24
6/22	116	116	116	23	115	116	116	23	116	116	116	24
6/23	117	118	120	23	117	118	119	23	117	119	119	24
6/24	119	119	120	23	119	119	120	23	118	119	119	24

Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and 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
Lower Granite Dam													
Little Goose Dam													
	06/16/99	Yearling Chinook	38	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/16/99	Steelhead	100	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/23/99	Yearling Chinook	21	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/23/99	Steelhead	19	0	0	0.0%	0.0%	0	0	0	0	0	0.0
Lower Monumental Dam													
	06/22/99	Steelhead	100	5	2	2.0%	0.0%	2	0	0	0	3	1.0
Ice Harbor Dam													
	06/15/99	Yearling Chinook	40	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/15/99	Steelhead	32	4	4	12.5%	0.0%	3	1	0	0	0	0.0
McNary Dam													
	06/17/99	Subyear.Chinook	100	1	0	0.0%	0.0%	0	0	0	0	1	1.0
	06/17/99	Steelhead	5	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/21/99	Subyear.Chinook	100	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/24/99	Subyear.Chinook	100	1	0	0.0%	0.0%	0	0	0	0	1	1.0
Bonneville Dam													
	06/17/99	Subyear.Chinook	100	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/17/99	Steelhead	11	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/21/99	Subyear.Chinook	100	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/24/99	Subyear.Chinook	100	0	0	0.0%	0.0%	0	0	0	0	0	0.0
Rock Island Dam													
	06/17/99	Subyear.Chinook	36	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/17/99	Steelhead	90	1	0	0.0%	0.0%	0	0	0	0	1	1.0
	06/21/99	Subyear.Chinook	100	9	8	8.0%	0.0%	8	0	0	0	2	1.0
	06/21/99	Steelhead	100	0	0	0.0%	0.0%	0	0	0	0	0	0.0
	06/24/99	Subyear.Chinook	100	2	2	2.0%	0.0%	2	0	0	0	0	0.0
	06/24/99	Steelhead	100	1	1	1.0%	0.0%	1	0	0	0	0	0.0

Hatchery Release Summary For the Last Two Weeks From 6/11/99 to 6/24/99

Hatchery	Species...	Migration	Year	Number ...Release Dates...			Release Site	River Name
				Released	Begin	..End		
USFWS								
L White Salmon	FA	Chinook	1999	2,100,000	6/24/99	6/24/99	Little White Salmon H	Little White Salmon River
			Agency Total:	2,100,000				
WDFW								
Klickitat	FA	Chinook	1999	4,300,000	6/3/99	6/30/99	Klickitat H	Klickitat River
Lyons Ferry	FA	Chinook	1999	200,000	6/15/99	6/15/99	Lyons Ferry H	Snake River
Priest Rapids	FA	Chinook	1999	6,544,000	6/14/99	6/23/99	Priest Rapids H	Mid-Columbia River
Ringold	FA	Chinook	1999	3,500,000	6/23/99	6/30/99	Ringold Springs H	Mid-Columbia River
Turtle Rock	SU	Chinook	1999	300,000	6/16/99	6/20/99	Turtle Rock H	Mid-Columbia River
	SU	Chinook	1999	305,000	6/22/99	6/26/99	Turtle Rock H	Mid-Columbia River
Wells	SU	Chinook	1999	390,000	6/18/99	6/21/99	Wells H	Mid-Columbia River
			Agency Total:	15,539,000				
			Total Release:	17,639,000				

Note: All releases have been completed for the spring of 1999.

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)
06/11/99	---	0	---	---	786	1,726	660	87	923	5,813	408
06/12/99	---	---	---	---	248	804	763	140	1,854	4,118	1,070
06/13/99	---	---	---	---	449	535	343	95	2,932	2,023	323
06/14/99	---	0	---	---	189	247	370	88	2,479	1,089	966
06/15/99	---	0	---	---	430	462	556	51	2,318	1,093	629
06/16/99	---	0	---	---	1,055	525	750	36	1,783	2,885	87
06/17/99	---	0	---	---	984	506	765	5	2,512	3,172	171
06/18/99	---	0	---	---	1,401	533	417	27	307	2,239	290
06/19/99	---	---	---	---	836	685	780	35	547	1,976	178
06/20/99	---	---	---	---	1,673	691	904	27	2,826	1,290	279
06/21/99	---	0	---	---	366	492	668	29	2	706	243
06/22/99	---	0	---	---	246	756	414	63	742	665	75
06/23/99	---	0	---	---	102	590	68	25	1,414	1,058	39
06/24/99	---	0	---	---	95	174	---	9	733	539	81
Total:	0	0	0	0	8,860	8,726	7,458	717	21,372	28,666	4,839
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	633	623	574	51	1,527	2,048	346

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
06/11/99	---	27	---	---	1,791	3,962	1,007
06/12/99	---	---	---	---	780	3,948	1,683
06/13/99	---	---	---	---	550	1,606	1,247
06/14/99	---	11	---	---	569	1,046	1,251
06/15/99	---	5	---	---	1,208	1,484	1,668
06/16/99	---	2	---	---	3,122	1,439	1,222
06/17/99	---	4	---	---	2,396	1,291	2,615
06/18/99	---	0	---	---	3,672	1,006	874
06/19/99	---	---	---	---	2,265	1,010	2,244
06/20/99	---	---	---	---	4,480	3,092	3,532
06/21/99	---	1	---	---	1,782	2,320	2,060
06/22/99	---	3	---	---	763	3,984	1,636
06/23/99	---	3	---	---	863	2,921	459
06/24/99	---	0	---	---	300	1,696	---
Total:	0	56	0	0	24,541	30,805	21,498
# Days:	0	10	0	0	14	14	13
Average:	0	6	0	0	1,753	2,200	1,654

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)
06/11/99	---	0	---	---	11,698	491	625	27	29,023	42,507	27,103
06/12/99	---	---	---	---	2,942	1,482	139	37	26,339	17,857	29,231
06/13/99	---	---	---	---	2,322	4,464	217	32	15,639	11,083	12,701
06/14/99	---	0	---	---	1,922	2,166	127	28	18,261	16,767	17,428
06/15/99	---	0	---	---	2,146	1,385	174	67	15,991	8,362	13,753
06/16/99	---	1	---	---	2,374	1,606	230	185	17,400	29,488	8,669
06/17/99	---	0	---	---	1,715	2,403	2,015	379	19,343	51,622	11,945
06/18/99	---	0	---	---	4,157	2,682	952	443	63,921	56,164	21,574
06/19/99	---	---	---	---	4,185	2,869	451	431	103,620	74,357	16,459
06/20/99	---	---	---	---	11,443	3,262	589	650	136,676	113,479	36,666
06/21/99	---	0	---	---	13,734	10,351	477	496	195,987	125,483	31,786
06/22/99	---	0	---	---	11,679	16,225	1,996	653	166,023	158,659	13,992
06/23/99	---	1	---	---	4,946	10,268	5,961	890	231,787	179,220	24,806
06/24/99	---	0	---	---	4,306	13,380	---	672	281,139	126,292	51,421
Total:	0	2	0	0	79,569	73,034	13,953	4,990	1,321,149	1,011,340	317,534
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	5,684	5,217	1,073	356	94,368	72,239	22,681

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)
06/11/99	---	0	---	---	637	555	521	484	2,220	10,536	2,157
06/12/99	---	---	---	---	284	616	555	488	4,112	7,520	2,872
06/13/99	---	---	---	---	274	347	416	348	2,869	4,676	1,722
06/14/99	---	0	---	---	285	399	393	597	3,042	5,712	3,059
06/15/99	---	0	---	---	307	445	382	794	2,689	2,083	3,106
06/16/99	---	0	---	---	660	349	387	510	3,393	3,860	1,474
06/17/99	---	0	---	---	303	407	459	52	2,986	4,263	1,048
06/18/99	---	0	---	---	485	370	391	206	1,975	5,654	916
06/19/99	---	---	---	---	245	333	451	129	2,723	6,432	1,071
06/20/99	---	---	---	---	648	211	84	106	2,019	4,241	915
06/21/99	---	0	---	---	472	103	38	118	2,071	6,432	647
06/22/99	---	0	---	---	270	198	108	154	1,111	5,604	527
06/23/99	---	0	---	---	406	186	34	110	1,045	2,535	349
06/24/99	---	0	---	---	47	56	---	109	533	1,085	727
Total:	0	0	0	0	5,323	4,575	4,219	4,205	32,788	70,633	20,590
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	380	327	325	300	2,342	5,045	1,471

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)
06/11/99	---	87	---	---	4,366	5,531	3,627	184	661	3,996	2,448
06/12/99	---	---	---	---	2,162	2,368	2,585	180	1,459	4,731	620
06/13/99	---	---	---	---	1,622	2,577	1,789	157	1,090	4,926	753
06/14/99	---	67	---	---	1,708	1,934	2,128	198	1,467	3,401	1,328
06/15/99	---	268	---	---	3,042	2,412	1,772	329	971	1,592	1,479
06/16/99	---	67	---	---	6,507	2,508	1,887	290	652	1,976	650
06/17/99	---	69	---	---	12,712	3,040	2,066	68	606	1,997	98
06/18/99	---	49	---	---	19,761	6,828	1,956	338	143	944	268
06/19/99	---	---	---	---	16,495	7,135	5,089	263	436	1,808	139
06/20/99	---	---	---	---	11,982	8,276	6,265	178	1,615	1,034	179
06/21/99	---	40	---	---	6,239	3,944	3,567	153	1,242	2,359	162
06/22/99	---	36	---	---	2,188	3,379	2,868	167	987	2,204	301
06/23/99	---	22	---	---	2,283	2,345	900	119	1,106	1,245	194
06/24/99	---	21	---	---	1,088	827	---	90	733	688	161
Total:	0	726	0	0	92,155	53,104	36,499	2,714	13,168	32,901	8,780
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	73	0	0	6,583	3,793	2,808	194	941	2,350	627

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)
06/11/99	---	10	---	---	711	769	399	89	95	1,635	466
06/12/99	---	---	---	---	319	430	382	193	324	1,312	394
06/13/99	---	---	---	---	475	565	217	156	287	2,463	377
06/14/99	---	7	---	---	189	246	357	147	225	839	443
06/15/99	---	14	---	---	518	248	313	254	194	1,056	518
06/16/99	---	3	---	---	997	299	375	157	261	1,976	43
06/17/99	---	1	---	---	934	400	434	107	43	1,619	171
06/18/99	---	0	---	---	1,759	736	261	527	134	1,641	22
06/19/99	---	---	---	---	837	665	547	511	0	1,744	139
06/20/99	---	---	---	---	756	766	547	374	202	1,871	60
06/21/99	---	0	---	---	472	311	305	321	0	1,628	0
06/22/99	---	0	---	---	443	247	183	282	123	1,315	75
06/23/99	---	2	---	---	178	216	153	204	123	1,710	155
06/24/99	---	0	---	---	79	88	---	141	67	1,533	81
Total:	0	37	0	0	8,667	5,986	4,473	3,463	2,078	22,342	2,944
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	4	0	0	619	428	344	247	148	1,596	210

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)
06/11/99	---	0	---	---	99	93	87	3	81	182	58
06/12/99	---	---	---	---	71	32	104	9	216	511	0
06/13/99	---	---	---	---	0	31	36	6	287	337	0
06/14/99	---	0	---	---	24	0	81	19	394	44	40
06/15/99	---	0	---	---	47	49	116	26	261	122	37
06/16/99	---	0	---	---	29	25	36	12	217	185	0
06/17/99	---	0	---	---	101	25	38	20	43	142	24
06/18/99	---	0	---	---	0	0	13	37	176	153	22
06/19/99	---	---	---	---	50	54	55	47	109	26	0
06/20/99	---	---	---	---	53	26	21	56	0	93	40
06/21/99	---	0	---	---	52	103	38	53	0	80	0
06/22/99	---	0	---	---	49	74	36	47	2	22	0
06/23/99	---	0	---	---	50	0	51	30	0	15	39
06/24/99	---	0	---	---	16	0	---	32	67	15	0
Total:	0	0	0	0	641	512	712	397	1,853	1,927	260
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	46	37	55	28	132	138	19

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)
06/11/99	---	0	---	---	0	32	69	3	340	1,272	117
06/12/99	---	---	---	---	0	65	121	5	1,299	1,039	225
06/13/99	---	---	---	---	49	63	54	1	574	425	161
06/14/99	---	0	---	---	0	32	35	0	563	559	121
06/15/99	---	0	---	---	24	62	58	6	560	203	37
06/16/99	---	0	---	---	29	26	36	2	739	481	43
06/17/99	---	0	---	---	26	0	26	2	433	378	49
06/18/99	---	0	---	---	50	31	78	2	263	181	22
06/19/99	---	---	---	---	0	15	55	1	0	220	40
06/20/99	---	---	---	---	0	54	42	0	0	297	0
06/21/99	---	0	---	---	52	32	38	1	207	75	81
06/22/99	---	0	---	---	0	52	36	0	0	37	0
06/23/99	---	0	---	---	26	32	17	0	184	240	39
06/24/99	---	0	---	---	0	0	---	2	67	37	0
Total:	0	0	0	0	256	496	665	25	5,229	5,444	935
# Days:	0	10	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	18	35	51	2	374	389	67

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 June 24, 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	8,857	1,906	10,611	899	9,813	815	0	0	0	0	0	0
TDA	17,563	6,180	25,225	518	39,635	1,617	5,779	1,351	7,372	353	7,158	468	0	0	0	0	0	0
JDA	15,409	5,089	21,820	378	31,309	1,325	5,245	981	6,856	321	5,675	371	0	0	0	0	0	0
MCN	9,258	3,961	19,415	337	30,860	1,525	2,769	679	5,249	209	4,462	313	0	0	0	0	0	0
IHR	5,335	2,648	12,434	130	16,094	620	2,026	539	3,540	114	2,415	167	0	0	0	0	0	0
LMN	3,924	2,726	10,598	131	15,276	682	1,313	437	1,937	66	1,664	112	0	0	0	0	0	0
LGS	3,450	2,656	10,512	118	**	**	1,416	390	2,011	59	**	**	0	0	0	0	**	**
LWG	3,322	2,407	9,854	109	13,146	573	1,073	340	1,628	59	1,421	87	0	0	0	0	0	0
PRD	4,129	744	4,124	37	9,804	151	562	51	1,084	17	1,037	23	0	0	0	0	0	0
RIS	3,313	915	3,187	54	7,271	160	96	47	229	8	367	15	0	0	0	0	0	0
RRH	1,399	252	762	54	1,670	39	21	3	41	0	61	1	0	0	0	0	0	0
WEL	*30	*57	4	24	851	38	0	0	0	0	0	0	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	0	0	0	0	0	0	4,090	4,489	12,504	5,829	7,269	10,372	831
TDA	0	0	0	0	0	0	2,419	2,696	7,327	1,634	2,467	3,438	228
JDA	1	0	0	0	0	0	2,017	2,042	5,623	4,584	6,920	4,304	1002
MCN	0	1	0	0	0	0	907	879	2,748	1,048	2,457	3,366	148
IHR	0	0	0	0	0	0	0	0	0	918	1,928	2,939	308
LMN	0	0	0	0	0	0	0	0	0	618	1,654	2,526	119
LGS	0	0	0	0	**	**	0	0	**	947	2,098	**	315
LWG	0	0	0	0	0	0	0	0	0	3,051	4,385	5,693	544
PRD	0	0	0	0	0	0	234	163	790	47	37	116	***
RIS	0	0	0	0	0	0	23	34	118	18	49	150	34
RRH	0	0	0	0	0	0	61	68	44	47	101	98	39
WEL	0	0	0	0	0	0	1	1	17	16	8	42	8

LMN, RIS and RRH are through 6/22 - MCN, LGS, PRD and WEL are through 6/23.

*WEL - WDFW is trapping Spring Chinook on both fish ladders, 3 days per week starting 06/14.

**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 06/11/99 to 06/24/99

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	21,900	52,218	65,734	3,533	597	143,982
Bypassed	516	0	1,379	0	0	1,895
Trucked	0	0	0	0	0	0
Barged	22,434	60,510	66,217	3,996	710	153,867
Total Transported	22,434	60,510	66,217	3,996	710	153,867
LITTLE GOOSE DAM						
Collected	31,617	59,245	46,050	3,637	801	141,350
Bypassed	0	0	0	0	0	0
Trucked	0	0	0	0	0	0
Barged	32,294	45,741	49,489	4,465	915	132,904
Total Transported	32,294	45,741	49,489	4,465	915	132,904
LOWER MONUMENTAL DAM						
Collected	23,162	11,655	32,690	3,465	1,140	72,112
Bypassed	12	0	200	0	0	212
Trucked	0	0	0	0	0	0
Barged	25,695	11,669	37,356	4,125	1,312	80,157
Total Transported	25,695	11,669	37,356	4,125	1,312	80,157
M McNARY DAM						
Collected	10,780	633,399	7,693	16,432	3,631	671,935
Bypassed	9,729	398,489	6,721	15,665	3,468	434,072
Trucked	0	0	0	0	0	0
Barged	1,007	232,414	952	741	147	235,261
Total Transported	1,007	232,414	952	741	147	235,261
PROJECT TOTALS						
Collected	87,459	756,517	152,167	27,067	6,169	1,029,379
Bypassed	10,257	398,489	8,300	15,665	3,468	436,179
Trucked	0	0	0	0	0	0
Barged	81,430	350,334	154,014	13,327	3,084	602,189
Total Transported	81,430	350,334	154,014	13,327	3,084	602,189

**Transportation Summary Report
Cumulative Transportation Summary
through 06/24/99**

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	2,169,804	87,381	3,341,104	76,844	17,221	5,692,354
Bypassed	115,918	0	266,363	14,608	1,640	398,529
Trucked	29,736	126	23,030	183	1,219	54,294
Barged	2,010,464	83,738	3,050,080	61,834	13,941	5,220,057
Total Transported	2,040,200	83,864	3,073,110	62,017	15,160	5,274,351
LITTLE GOOSE DAM						
Collected	3,521,251	59,687	3,128,965	116,050	20,273	6,846,226
Bypassed	19,783	0	158,018	4,195	299	182,295
Trucked	1,001	0	1,128	5	120	2,254
Barged	3,476,111	45,983	2,965,788	111,589	18,663	6,618,134
Total Transported	3,477,112	45,983	2,966,916	111,594	18,783	6,620,388
LOWER MONUMENTAL DAM						
Collected	1,890,888	12,062	1,975,811	50,930	12,644	3,942,335
Bypassed	148,536	1	251,013	7,795	596	407,941
Trucked	4,879	6	1,133	0	88	6,106
Barged	1,735,509	12,038	1,723,037	43,136	11,933	3,525,653
Total Transported	1,740,388	12,044	1,724,170	43,136	12,021	3,531,759
M McNARY DAM						
Collected	2,101,821	974,375	533,725	137,896	781,800	4,529,617
Bypassed	2,098,392	739,063	532,579	137,083	781,069	4,288,186
Trucked	0	0	0	0	0	0
Barged	1,007	232,414	952	741	147	235,261
Total Transported	1,007	232,414	952	741	147	235,261
PROJECT TOTALS						
Collected	9,683,764	1,133,505	8,979,605	381,720	831,938	21,010,532
Bypassed	2,382,629	739,064	1,207,973	163,681	783,604	5,276,951
Trucked	35,616	132	25,291	188	1,427	62,654
Barged	7,223,091	374,173	7,739,857	217,300	44,684	15,599,105
Total Transported	7,258,707	374,305	7,765,148	217,488	46,111	15,661,759