Fish Passage Center

Weekly Report #09 - 22

August 7, 2009

1827 NE 44th Ave., Suite 240
Portland, OR 97213
phone: 503/230-4099
fax: 503/230-7559

Summary of Events:

Water Supply:

Precipitation throughout the Columbia Basin has varied between 11% and 119% of average at individual sub-basins through July 27th. Precipitation above The Dalles has been 88% of average over July. Over the entire water year, precipitation has generally been near average.

Table 1. Summary of July Precipitation and cumulative October through July precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2009 July 1-27		Water Year 2009 October 1, 2008 to July 1-27, 2009	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.61	104	19.75	89
Snake River Above Ice Harbor	0.51	64	18.05	114
Columbia Above The Dalles	0.95	88	20.56	99
Kootenai	1.91	116	19.54	86
Clark Fork	1.23	119	15.57	102
Flathead	1.61	116	17.98	89
Pend Oreille/ Spokane	1.33	111	26.46	93
Central Washington	0.17	54	6.96	84
Snake River Plain	0.36	68	12.01	119
Salmon/Boise/ Payette	0.33	48	17.37	95
Clearwater	0.95	75	29.67	106
SW Washington Cascades/Cowlitz	0.13	11	58.98	88
Willamette Valley	0.34	48	48.21	85

Table 2 displays the June Final and July Final runoff volume forecasts for multiple reservoirs. The most notable differences between the June Final and July Final forecasts came at Libby Dam and Lower Granite Dam. At Libby, the July Final forecast decreased 11% relative to the June Final Forecast. At Lower Granite Dam, the July Final forecast increased 7% relative to the June Final Forecast, it appears most of the increase at Lower Granite was due to an increase in water supply above Brownlee Dam (increased 14%). The Water Supply Forecast at The Dalles between January and July is 89300 Kaf (83% of average).

Table 2. June Final and July Final Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	June Final		July Final	
	% Average (1971-2000)	Probable Runoff Volume (Kaf)	% Average (1971-2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	86	92000	83	89300
Grand Coulee (Jan-July)	85	53700	79	49600
Libby Res. Inflow, MT (Apr-Aug)	80	5000 5062*	69	4330
Hungry Horse Res. Inflow, MT (Jan-July)	93	2060	91	2020
Lower Granite Res. Inflow (Apr- July)	102	21900	109	23500
Brownlee Res. Inflow (Apr-July)	76	4780	90	5710
Dworshak Res. Inflow (Apr-July)	98	2590 2597*	97	2570

*Denotes COE Forecast

The Spring Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite) and ended on June 20th, 2009. The spring flow objective at Lower Granite this year was 100 Kcfs, average flow at Lower Granite over the spring period was 110.3 Kcfs. The summer flow period began on 6-21-09; the summer flow objective is 52.5 Kcfs in 2009 at Lower Granite. Flows at Lower Granite have average 60.0 Kcfs at Lower Granite over the first portion of the summer period and 36.4 Kcfs last week.

The spring flow objective period began on April 10th at Priest Rapids and McNary and ended on June 30th, 2009. The flow objectives this spring were 228 Kcfs at McNary and 135 Kcfs at Priest Rapids. Flows at Priest Rapids averaged 140.8 Kcfs over the spring season and flows at McNary averaged 268.1 Kcfs over the spring. The summer flow period began on July 1 at McNary and the objective is 200 Kcfs. Flows at McNary Dam have averaged 160.6 Kcfs over the first portion of the summer period and 137.2 Kcfs last week.

Grand Coulee Reservoir is at 1284.0 feet (8-06-09) and drafted 1.7 feet over the last week. Outflows at Grand Coulee have ranged between 60 and 106.5 Kcfs over the last week. The Grand Coulee summer draft will be 1278 feet this year by August 31st, 2009.

The Libby Reservoir is currently at elevation 2441.99 feet (8-06-09) and has refilled 0.79 feet last week. Outflows at Libby are currently 7 Kcfs (minimum bull trout flow) and will remain at this level through August.

Hungry Horse is currently at an elevation of 3558.0 ft (8-06-09) and has drafted 1.2 feet last week. Outflows at Hungry Horse have been 2.4 to 2.56 Kcfs last week.

Dworshak is currently at an elevation of 1562.9 feet (8-06-09) and has drafted 10.2 feet last week. Outflows from Dworshak were decreased to 12 Kcfs on August 5th and then to 10 Kcfs on August 6th, as water temperatures decreased at Lower Granite Dam tailrace. Future releases from the project will be dependent on temperatures at the Lower Granite Dam tailrace.

The Brownlee Reservoir was at an elevation of 2058.9 feet on August 6th, 2009, drafting 2.7 feet last week. Outflows at Brownlee Dam have been 8.6 to 15.1 Kcfs over the last week.

Spill:

The 2009 planned summer spill program at the lower Snake River Projects began at 0001 hours on June 20, 2009. The following table shows the planned operations for 2009.

Project	Day/Night Spill
Lower Granite	18Kcfs/18Kcfs
Little Goose	30%/30%
Lower Monumental	17Kcfs/17Kcfs
Ice Harbor	45Kcfs/Gas Cap

Lower Granite, Little Goose and Lower Monumental dams met the court order over the past week. Ice Harbor Dam has met the court ordered levels of 45 Kcfs daytime spill and gas cap nighttime spill, except when daytime spill is below 45 Kcfs due to low flows and powerhouse minimum flows. Ice Harbor Dam has a minimum spill of 15.2 Kcfs.

The following table shows the planned operations for summer spill levels in the lower Columbia River for 2009.

Project	Day/Night Spill
McNary	50%/50%* (beginning June 20)
John Day	30%/30%
The Dalles	40%/40%
Bonneville	75 Kcfs/gas cap

McNary Dam spill has met the Court Order over the past week. At John Day Dam the testing of 30% versus 40% ended and the project is spilling an instantaneous 30%. The Dalles Dam met the court ordered 40% level over the past week. At Bonneville Dam the nighttime spill to the gas cap was a minimum spill level of 75 Kcfs because, based on historical data, below 75 Kcfs juvenile survival via spillway passage decreases. Since the hot weather ended the Camas/Washougal TDG gage has been below 115%, therefore, nighttime gas cap spill has gradually increased to 110 Kcfs.

Both exceedences of the 115% over the past week occurred at the Camas/Washougal gage (08/01, 08/04). The total dissolved gas levels were due to the hot weather, and there is no requirement to manage spill to this gage.

Gas bubble trauma (GBT) monitoring occurred at Little Goose and Lower Monumental dams in the Snake River, at Rock Island Dam in the Mid Columbia and at McNary and Bonneville dams in the lower Columbia. One fish was observed with minor signs of GBT at Little Goose Dam on August 4th, otherwise no

fish were detected with signs of GBT.

Smolt Monitoring:

Subyearling Chinook smolt collection and passage numbers remained relatively high at McNary Dam and Bonneville Dam, while at Snake River projects numbers of subyearlings were much lower. Passage indices at Little Goose Dam actually increased on average over the past week. Collection of Spring migrants continued to decline at all SMP sites in the Snake River and Lower Columbia this past week.

At Lower Granite Dam subyearling Chinook predominated with coho numbers having dropped off rapidly over the past week. Average daily passage index for subyearling Chinook was at 340 per day this week compared to 1,100 per day last week. At Little Goose Dam the subyearling Chinook indices increased this week with the daily average index at 970 per day this week compared to less than 870 last week.

At Rock Island dam the daily passage indices for subyearling Chinook predominated in the sample, with indices averaging over 80 per day this week compared to 120 per day last week.

In the lower Columbia River subyearling Chinook smolt numbers declined again this week at McNary Dam. Subyearling Chinook passage indices dropped from nearly 17,000 per day last week to about 11,000 per day this week. At Bonneville Dam subyearling Chinook indices were down a little from last week; the index average just over 12,000 per day this week compared to over 13,000 per day last week.

Hatchery Release:

Snake River Zone: The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. There were no releases of juvenile salmonids scheduled for this week. Furthermore, no releases of juvenile salmonids are scheduled to begin over the next two weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There were no scheduled releases of juvenile salmonids to this zone this week. There are no releases of juvenile salmonids to this zone over the next two weeks.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. No releases of juvenile salmonids were scheduled for this zone over the past week. Furthermore, there are no releases scheduled for this zone over the next two weeks.

Adult Passage:

Fall Chinook began to pass Bonneville Dam on August 1st. Daily counts of adult fall Chinook ranged from 83 to 139. The 2009 adult fall Chinook count of 684 was about 34.7% of the 2008 count and about 25.5% of the 10 year average. The fall Chinook jack count of 287 was about 1.01 times greater than the 2008 count and about 58.4% of the 10 year average.

Summer Chinook counts ended on 8/5 at John Day Dam. The 2009 John Day Dam adult summer Chinook count of 65989 was about 1.04 times greater than the 2008 count and 1.06 times greater than the 10 year average. The 2009 summer Chinook jack count at John Day Dam of 33147 was 2.42 times greater than the 2008 count and about 4.07 times greater than the 10 year average. The 2009 Priest Rapids Dam adult summer Chinook count of 48461 was about 1.30 times greater than the 2008 count and was about 96.6% of the 10 year average. The 2009 Priest Rapids summer Chinook jack count of 2033 was 1.45 times greater than the 2008 count and 1.06 times greater than the 10 year average. The adult summer Chinook count at Lower Granite Dam in the Snake River of 14245 was 63.9% of the 2008 count and 1.29 times greater then the 10 year average. The Lower Granite summer Chinook jack count of 16151 was 3.22 times greater then the 2008 count and 5.93 times greater than the 10 year average.

The Bonneville Dam 2009 steelhead count of 155913 is about 95.3% of the 2008 count and 1.10 times greater than the 10 year average. In the Snake River, this year's Lower Granite steelhead count of 16477 is 1.13 times greater than the 2008 count of 14624 and 1.37 times greater than the 10 year average of 12007. The 2009 wild steelhead count as of August 8th was 4975. At Rock Island Dam, as of August 5th, 2539 adult steelhead have been counted and at Rocky Reach Dam, 2064 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2009 count for steelhead was 16795, as of July 26th. This year's steelhead count is only about 92.1% of the 2008 count of 18235 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 2 and 21 last week. The 2009 adult sockeye count at Bonneville Dam of 177761 is about 83.2% of the 2008 count of 213567 and about 2.26 times greater than the 10 year average of 78560. In the upper Columbia River at Priest Rapids Dam, the 2009 adult sockeye count of 153033 was

about 77.8% of the 2008 count and 2.05 times greater than the 10 year average. Two of the major spawning sites for sockeye in the upper Columbia River zone are Lake Wenatchee and Lake Osoyoos (Okanogan basin). In the Snake River at Lower Granite Dam the 2009 adult sockeye count of 1197 was about 1.39 times greater than the 2008 count of 863 and 9.5 times greater than the 10 year average count of 126.

The coho salmon run at Bonneville Dam is just beginning with 14 adults and 10 jacks counted to date. Three chum and no pink salmon have been observed at Bonneville Dam so far this season. In 2008, 5 chum and 59 pink salmon had been observed by this date. As of August 6th at Bonneville Dam, the adult Shad count was 1373404 which was about 64.1% of the 2008 count of 2142822 and only about 44.1% of the 10 year average count of 3116994.

The posting of the daily fish counts have been delayed several days this week on the Corp of Engineers website due to computer problems. The COE is working on fixing the problems. FPC staff called project count stations and requested fish count data. The counts for BON, TDA, JDA, LGS and LGR have been updated with the data we have received over the phone from the COE fish counters. The data for 8/5 and 8/6 at these sites are preliminary data.

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

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/24/2009	82.7	0.2	86.2	0.0	88.4	7.3	87.4	7.3	88.6	19.1	98.6	19.6	96.1	22.8
07/25/2009	81.7	0.1	79.5	0.0	82.5	6.4	81.8	7.1	83.4	18.1	87.8	19.5	81.8	22.6
07/26/2009	91.9	0.2	91.4	0.0	93.8	7.5	90.0	6.3	90.5	15.7	94.3	19.8	91.4	22.9
07/27/2009	109.9	0.2	112.4	0.0	116.9	8.8	115.0	9.0	115.4	22.5	117.9	20.1	112.4	22.9
07/28/2009	116.7	0.2	114.6	0.0	117.7	8.4	116.2	9.1	117.7	22.2	125.4	24.0	118.9	22.7
07/29/2009	98.1	0.1	101.7	0.0	107.2	7.7	111.4	9.6	112.7	23.3	121.1	22.4	117.9	22.4
07/30/2009	109.7	0.1	109.5	0.0	111.2	8.3	110.8	9.5	109.4	23.3	108.9	19.7	101.8	23.2
07/31/2009	106.5	0.1	107.2	0.0	110.7	8.2	109.5	9.0	109.4	22.6	117.7	22.7	118.1	22.4
08/01/2009	75.7	0.2	70.4	0.0	77.5	6.8	83.9	6.3	86.6	14.8	94.4	19.7	96.0	22.2
08/02/2009	60.0	0.2	59.5	0.0	60.1	6.2	59.5	5.5	60.0	13.1	71.9	19.1	69.3	21.4
08/03/2009	79.6	0.2	84.5	0.0	83.5	7.2	84.6	8.1	85.1	20.0	86.3	19.2	74.5	21.6
08/04/2009	87.4	0.2	89.2	0.0	91.9	7.1	90.0	7.6	89.8	18.6	94.9	19.2	93.9	22.2
08/05/2009	93.9	0.2	94.0	0.0	99.2	7.8	96.2	7.3	95.8	19.0	94.2	19.6	86.9	22.6
08/06/2009	94.9	0.2	97.6	0.0	98.7	7.4	96.7	7.2	98.4	18.9	103.6	19.4	99.7	23.4

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

	Dworshak		Brownlee	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/24/2009	12.0	2.4	11.4	13.5	41.3	18.7	40.5	12.2	39.6	17.4	40.6	30.4
07/25/2009	12.0	2.3	11.6	14.0	36.6	18.6	34.2	10.1	32.1	17.0	33.8	24.0
07/26/2009	12.0	2.3	11.9	14.5	40.8	18.7	41.4	12.3	40.9	17.5	40.3	30.5
07/27/2009	11.9	2.2	11.6	13.7	38.3	18.7	36.3	10.8	35.2	17.2	36.5	26.6
07/28/2009	11.6	2.1	13.2	17.5	40.4	18.6	39.6	11.8	37.0	17.5	37.9	27.6
07/29/2009	12.9	3.2	11.9	15.9	40.1	18.5	38.5	11.4	38.8	16.8	40.2	29.7
07/30/2009	13.7	3.9	12.2	15.4	40.1	18.7	39.5	11.8	37.3	17.4	38.4	28.4
07/31/2009	13.6	3.8	9.9	15.1	40.6	18.8	39.5	11.8	37.9	16.9	39.6	29.1
08/01/2009	13.6	3.8	9.7	13.5	39.5	18.7	38.2	11.3	36.9	17.5	37.5	27.1
08/02/2009	13.6	3.7	9.6	10.6	36.3	18.7	35.9	10.6	34.8	17.1	37.2	26.4
08/03/2009	13.5	3.6	10.2	13.4	35.2	18.7	33.7	9.9	32.7	17.5	34.6	24.4
08/04/2009	13.3	3.4	9.5	11.5	37.4	18.8	36.8	10.9	35.7	17.1	38.5	28.3
08/05/2009	12.1	2.2	9.1	11.4	33.3	18.6	33.3	9.9	30.4	17.4	30.4	20.1
08/06/2009	10.1	0.1	---	---	32.6	18.8	30.9	9.2	29.3	17.1	30.2	20.2

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

	McNary		John Day		The Dalles			Bonneville		
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
07/24/2009	139.1	69.9	131.0	39.3	124.9	50.2	134.0	81.6	0.0	40.4
07/25/2009	138.8	68.2	131.2	39.3	127.7	51.1	154.2	84.5	0.0	57.6
07/26/2009	131.1	63.7	115.8	34.7	114.4	45.8	134.9	83.3	0.0	39.5
07/27/2009	149.7	72.8	150.2	44.8	143.2	57.2	147.2	79.5	0.0	55.6
07/28/2009	173.7	84.6	166.5	50.0	161.1	64.5	165.2	73.8	0.0	79.4
07/29/2009	179.7	88.0	167.5	50.3	157.2	62.7	164.8	72.3	0.1	80.3
07/30/2009	158.0	78.3	145.9	43.7	141.3	56.4	166.9	74.5	0.0	80.3
07/31/2009	156.1	77.0	130.5	39.2	128.8	51.5	130.4	74.5	0.0	43.8
08/01/2009	154.3	76.0	147.4	44.1	137.5	54.9	159.6	74.4	0.0	73.1
08/02/2009	137.8	67.8	128.3	38.6	123.5	49.3	136.7	74.4	0.0	50.3
08/03/2009	112.5	55.1	108.1	32.4	106.4	42.5	118.4	75.5	0.0	30.9
08/04/2009	117.4	56.6	108.9	32.5	106.5	42.6	124.9	78.5	0.0	34.3
08/05/2009	151.7	73.3	141.3	42.4	136.4	54.4	139.6	80.7	0.0	46.8
08/06/2009	130.4	63.8	114.6	34.4	111.5	44.6	124.6	81.6	0.0	30.8

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: Rank 1	Rank 2	Rank 3	Rank 4
Little Goose Dam											
	07/28/09	Chinook + Steelhead	80	1	1	1.25%	0.00%	1	0	0	0
	08/04/09	Chinook + Steelhead	59	1	1	1.69%	0.00%	1	0	0	0
Lower Monumental Dam											
	07/29/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/05/09	Chinook + Steelhead	9	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/27/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/30/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/03/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/28/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/01/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/05/09	Chinook + Steelhead	68	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/28/09	Chinook + Steelhead	52	0	0	0.00%	0.00%	0	0	0	0
	07/30/09	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0

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

	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	105.6	105.9	106.4	24	107.9	109.1	111.7	23	109.8	109.9	110.3	24	108.9	109.9	112.1	23	110.4	110.7	111.2	24
7/25	105.4	105.9	106.4	24	106.3	106.5	106.7	21	109.4	109.6	110.0	24	109.6	110.4	112.9	21	110.1	110.3	110.6	24
7/26	105.0	105.3	105.8	24	106.9	107.4	108.0	21	108.5	108.9	109.1	24	108.9	109.8	112.1	21	110.3	110.7	111.1	24
7/27	105.0	105.4	105.9	24	108.1	109.0	110.7	24	108.0	108.5	108.9	24	108.7	110.1	112.0	24	110.8	111.4	111.8	24
7/28	105.3	105.8	106.3	24	108.0	108.5	109.0	21	108.6	109.0	109.4	24	108.4	109.1	109.8	21	111.4	112.0	112.7	24
7/29	104.8	105.0	105.4	24	108.0	108.5	109.0	23	108.9	109.2	109.7	24	108.5	109.4	110.0	23	110.3	110.8	111.6	24
7/30	104.8	105.4	105.7	24	108.4	109.0	109.7	22	108.9	109.1	109.3	24	108.7	109.9	110.6	22	109.9	110.6	111.1	24
7/31	105.2	105.4	105.7	24	108.5	109.0	109.6	24	108.8	109.1	109.5	24	108.7	110.1	112.9	24	109.6	110.2	110.7	24
8/1	105.4	106.1	106.3	24	108.6	109.3	109.7	24	108.4	108.9	109.3	24	109.2	111.1	115.2	24	109.5	110.0	110.3	24
8/2	105.8	106.1	106.6	24	108.3	108.7	109.5	21	108.9	109.1	109.3	24	108.9	109.7	110.8	21	109.5	110.2	110.6	24
8/3	105.6	105.9	106.1	24	107.7	108.1	108.5	22	108.8	109.0	109.2	24	109.2	110.3	112.6	22	110.2	110.9	111.3	24
8/4	105.9	106.5	106.8	24	107.4	107.8	108.2	23	108.4	108.6	108.9	24	108.9	110.1	113.9	23	109.7	110.2	110.4	24
8/5	105.7	106.0	106.2	24	107.5	107.9	108.2	22	108.4	108.7	109.0	24	108.7	109.8	113.3	22	110.5	111.2	111.4	24
8/6	106.1	106.7	107.5	24	107.2	107.7	108.1	23	108.4	108.6	108.8	24	108.4	109.5	111.9	23	110.1	110.5	111.0	24

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

	Chief J. Dnst				Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	109.5	110.0	110.3	24	111.8	112.1	112.3	24	113.2	113.7	114.1	24	112.4	112.6	113.0	24	110.3	111.1	112.4	24
7/25	109.3	110.0	110.5	24	110.6	111.0	111.9	24	111.9	112.6	113.1	24	112.3	112.5	112.8	24	109.9	110.9	112.3	24
7/26	109.4	110.0	110.9	24	110.9	111.8	112.6	24	112.2	113.2	113.6	24	112.0	112.4	112.8	24	110.0	111.3	112.3	24
7/27	110.1	110.6	111.1	24	111.8	112.9	113.8	24	113.3	114.5	115.3	24	111.6	112.0	112.3	24	111.1	112.3	113.2	24
7/28	110.9	111.7	113.2	24	112.6	113.6	114.2	24	114.3	115.2	116.1	24	112.5	113.0	113.2	24	112.3	113.6	114.5	24
7/29	110.0	110.9	112.5	24	112.8	113.6	114.1	24	114.3	114.9	115.5	24	112.7	113.1	113.8	24	112.2	113.2	114.0	24
7/30	109.5	109.8	110.2	24	112.0	112.4	112.8	24	113.9	114.3	114.6	24	112.9	113.2	113.5	24	112.1	113.5	114.2	24
7/31	109.1	109.5	110.1	24	111.3	112.1	112.5	24	113.0	113.9	114.7	24	113.0	113.3	113.4	24	112.1	113.7	114.8	24
8/1	109.0	110.0	111.4	24	111.2	112.0	112.6	24	113.1	113.7	114.0	24	113.2	113.9	114.8	24	111.3	112.0	112.7	24
8/2	109.4	110.5	111.1	24	111.1	112.1	112.7	24	113.2	114.1	115.4	24	112.8	113.6	114.9	24	110.2	110.8	111.6	24
8/3	109.4	110.3	111.0	24	111.1	111.9	112.5	24	113.2	113.9	114.3	24	112.8	113.1	113.9	24	110.7	111.5	112.1	24
8/4	109.4	110.0	110.4	24	110.6	111.2	111.5	24	112.4	112.9	113.4	24	111.5	111.8	112.5	24	110.3	111.0	111.5	24
8/5	110.4	111.0	111.7	24	110.3	111.2	111.5	24	112.4	113.2	113.5	24	111.1	111.6	111.9	24	110.1	111.3	111.8	24
8/6	110.1	110.7	111.3	24	110.5	111.5	111.9	24	112.3	113.1	113.7	24	110.5	110.7	111.0	24	110.0	111.3	112.3	24

Total Dissolved Gas Saturation at Mid Columbia River Sites

	Rock Island				Rock I. Tlwr				Wanapum				Wanapum Tlwr				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	111.6	112.1	112.3	24	115.9	116.5	117.4	24	110.0	110.8	112.4	24	113.3	113.7	113.9	24	109.8	110.3	110.5	24
7/25	111.8	112.1	112.5	24	116.0	116.7	118.5	24	113.0	113.9	115.0	24	114.7	115.3	115.9	24	111.7	112.3	113.0	24
7/26	112.1	112.5	112.8	24	116.3	117.6	120.5	24	111.9	111.9	112.1	2	114.2	114.2	114.2	2	112.2	112.2	112.2	2
7/27	112.3	112.9	113.5	24	116.1	116.8	117.7	24	114.1	115.1	115.4	21	114.4	114.6	114.9	22	114.0	114.3	114.5	22
7/28	112.9	113.6	114.2	24	116.5	117.1	117.5	24	115.4	116.3	117.4	24	115.2	115.5	115.7	24	114.6	115.0	115.4	24
7/29	113.0	113.7	114.2	24	116.5	117.1	117.4	24	114.9	115.6	116.0	24	115.2	115.6	116.1	24	114.0	114.3	114.7	24
7/30	113.4	114.0	114.7	24	117.2	117.7	118.7	24	115.5	116.6	117.3	24	115.7	115.9	116.1	24	114.5	114.9	115.4	24
7/31	113.5	114.1	114.6	24	116.9	117.4	118.4	24	116.5	117.9	119.5	24	115.8	116.1	116.4	24	115.1	115.3	115.6	24
8/1	113.3	113.9	114.1	24	116.3	116.7	117.8	24	115.9	117.1	118.9	24	116.2	116.5	117.6	24	115.4	115.6	116.3	24
8/2	112.7	113.1	113.5	24	116.7	117.8	119.7	24	113.8	114.3	114.9	24	115.7	116.1	116.6	24	113.9	114.3	114.6	24
8/3	112.6	113.0	113.3	24	116.4	117.1	118.4	24	113.1	113.6	114.2	24	115.1	115.7	116.2	24	112.7	113.1	113.7	24
8/4	111.5	111.9	112.6	24	115.8	116.7	119.1	24	110.8	111.7	112.2	24	113.9	114.5	115.3	24	111.3	111.8	112.2	24
8/5	111.4	111.8	112.4	24	115.5	115.9	117.2	24	---	---	---	0	---	---	---	0	---	---	---	0
8/6	110.6	111.0	111.9	24	114.7	115.7	117.8	24	---	---	---	0	---	---	---	0	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia and Snake River Sites

	Priest R. Dnst				Pasco				Dworshak				Clrwtr-Peck				Anatone			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	111.7	112.1	112.3	24	107.9	108.4	108.9	24	104.6	105.0	105.2	24	105.4	106.7	107.6	24	102.1	103.3	104.4	24
7/25	112.6	113.0	113.3	24	107.8	108.4	108.7	24	140.9	177.7	980.2	24	105.3	106.5	107.5	24	102.1	103.4	104.4	24
7/26	112.1	112.1	112.2	2	108.5	109.6	110.2	24	104.0	104.2	104.6	24	104.8	105.8	106.8	24	101.7	102.7	103.7	24
7/27	114.5	115.3	115.5	22	109.4	110.6	111.2	24	103.7	103.9	104.3	24	104.8	106.0	107.0	24	102.3	103.7	104.9	24
7/28	115.3	115.8	116.2	24	110.9	111.9	112.4	24	104.3	104.9	109.1	24	105.3	106.8	108.5	24	102.6	103.9	105.1	24
7/29	114.7	115.0	115.2	24	110.5	111.1	111.4	24	107.2	109.9	110.5	24	107.0	109.5	111.1	24	102.5	103.7	104.7	24
7/30	115.0	115.5	116.0	24	110.5	111.1	111.5	24	109.4	109.5	109.7	24	108.6	109.7	110.5	24	102.4	103.7	104.9	24
7/31	115.7	116.0	116.1	24	110.7	111.5	111.8	24	109.2	109.4	109.7	24	108.4	109.5	110.4	24	102.2	103.5	104.6	24
8/1	115.4	115.9	116.2	24	111.2	112.0	112.4	24	109.2	109.5	109.9	23	108.5	109.7	110.7	24	102.4	103.8	104.9	24
8/2	113.4	114.2	114.8	24	111.0	111.9	112.4	24	109.3	109.5	109.8	24	108.5	109.7	110.7	24	102.2	103.4	104.6	24
8/3	113.1	114.1	114.8	24	109.8	110.6	111.2	24	109.1	109.3	109.8	24	108.4	109.5	110.5	24	102.0	103.6	105.1	24
8/4	112.8	113.4	113.8	24	108.3	109.3	109.6	24	108.3	108.8	109.1	24	107.9	109.1	110.3	24	102.0	103.4	104.9	24
8/5	---	---	---	0	108.4	109.7	110.3	24	104.7	105.0	105.3	23	105.6	106.7	107.3	24	102.0	103.4	104.7	24
8/6	---	---	---	0	107.5	108.3	109.1	24	101.0	101.5	104.5	24	103.4	104.4	104.9	24	101.1	101.9	102.9	24

Total Dissolved Gas Saturation Data at Snake River Sites

	Clrwtr-Lewiston				Lower Granite				L. Granite Tlwr				Little Goose				L. Goose Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	105.1	107.5	109.0	24	102.1	102.2	102.4	24	110.1	110.2	110.6	24	109.5	109.7	110.0	24	112.3	112.7	113.2	24
7/25	105.0	107.2	108.8	24	102.2	102.3	102.5	24	110.7	111.1	111.6	24	109.2	109.5	109.9	24	112.1	112.5	113.0	24
7/26	104.5	106.6	108.1	24	102.0	102.2	102.3	24	110.4	110.7	111.2	24	108.5	109.1	110.4	24	112.2	112.6	113.0	24
7/27	105.1	107.5	108.7	24	101.7	101.8	102.0	24	110.7	110.8	110.9	24	108.0	108.5	109.0	24	111.6	112.2	113.0	24
7/28	105.3	107.6	108.9	24	102.5	102.9	103.1	24	110.5	111.0	111.6	24	108.4	108.6	108.8	24	112.3	112.8	113.5	24
7/29	105.5	107.7	108.8	24	102.9	103.1	103.3	24	110.1	110.5	110.9	24	108.6	109.1	110.2	24	112.4	112.9	113.5	24
7/30	106.5	108.6	109.7	24	103.0	103.2	103.6	24	110.2	110.3	110.5	24	108.9	109.4	110.0	24	113.0	113.4	113.8	24
7/31	106.3	108.5	109.6	24	103.6	103.7	104.0	24	110.4	110.5	110.8	24	110.5	110.8	111.3	24	113.3	113.6	114.0	24
8/1	106.8	109.3	111.1	24	103.4	103.5	103.6	24	110.6	111.0	111.7	24	110.1	110.4	110.6	24	113.0	113.4	113.9	24
8/2	106.5	108.8	110.6	24	102.9	103.1	103.3	24	110.8	111.2	111.5	24	109.8	110.0	110.2	24	112.7	113.1	113.6	24
8/3	106.6	109.1	110.7	24	103.8	105.2	105.6	24	111.5	112.4	113.4	24	109.0	109.3	109.5	24	112.4	112.7	113.1	24
8/4	106.1	108.5	110.4	24	104.6	104.9	105.6	24	111.6	112.0	112.4	24	108.8	109.1	109.2	24	112.3	112.8	113.3	24
8/5	105.5	107.4	108.5	24	104.5	104.8	105.0	24	111.7	111.9	112.2	24	109.5	109.7	109.9	24	112.4	112.9	113.4	24
8/6	103.8	105.1	106.4	24	104.8	104.9	105.1	24	112.1	112.3	113.2	24	108.7	108.8	109.2	24	111.9	112.6	113.1	24

Total Dissolved Gas Saturation Data at Snake and Lower Columbia River Sites

	Lower Mon.				L. Mon. Tlwr				Ice Harbor				Ice Harbor Tlwr				McNary-Oregon			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	111.5	111.7	111.9	24	116.5	117.0	117.6	24	113.5	113.7	113.9	24	113.6	114.1	114.7	24	---	---	---	0
7/25	110.4	110.9	111.5	24	116.0	116.2	116.4	24	113.0	113.2	113.6	24	113.9	114.5	115.2	24	---	---	---	0
7/26	109.4	109.6	110.0	24	116.0	116.2	116.6	24	112.4	112.6	113.0	24	113.7	114.3	114.8	24	---	---	---	0
7/27	109.8	110.6	111.1	24	115.7	116.2	117.5	24	112.2	112.7	113.1	24	113.6	114.3	114.7	24	---	---	---	0
7/28	110.6	111.3	111.9	24	115.6	116.0	116.4	24	113.6	114.0	114.5	24	112.9	113.3	113.6	24	---	---	---	0
7/29	112.3	112.6	112.9	24	115.0	115.8	116.3	24	114.2	114.5	115.0	24	113.4	114.2	114.5	24	---	---	---	0
7/30	111.4	111.7	112.2	24	115.5	116.1	116.4	24	114.3	114.6	114.8	24	114.2	114.8	115.1	24	---	---	---	0
7/31	110.7	110.9	111.3	24	115.3	115.8	116.2	24	113.3	113.8	114.5	24	114.1	114.6	114.9	24	---	---	---	0
8/1	110.4	110.7	111.1	24	115.7	116.0	116.3	24	112.2	112.4	112.5	24	113.5	113.9	114.7	24	---	---	---	0
8/2	109.6	109.9	110.3	24	115.7	116.4	116.9	24	111.9	112.2	112.7	24	113.2	113.5	113.9	24	---	---	---	0
8/3	109.9	110.4	111.2	24	116.1	116.3	116.5	24	112.2	112.4	112.8	24	112.5	113.0	113.4	24	---	---	---	0
8/4	110.0	110.2	110.6	24	115.9	116.3	116.5	24	112.2	112.5	112.9	24	112.5	113.0	113.6	24	---	---	---	0
8/5	109.7	109.9	110.2	24	116.3	116.7	116.9	24	112.0	112.2	112.4	24	113.2	113.7	114.3	24	---	---	---	0
8/6	108.8	109.2	109.6	24	115.7	116.3	116.4	24	111.8	112.2	112.5	24	112.8	113.2	113.9	24	---	---	---	0

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

	McNary-Wash				McNary Tlwr				John Day				John Day Tlwr				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
7/24	108.1	108.5	109.0	24	114.8	115.9	116.7	24	105.7	106.1	106.4	24	114.9	115.5	115.8	24	104.6	105.5	106.2	24
7/25	108.0	108.4	109.0	24	116.3	117.0	117.2	24	106.1	106.2	106.4	24	115.1	115.3	115.5	24	108.6	109.6	110.1	24
7/26	107.4	108.0	109.4	24	115.8	116.8	117.3	24	106.0	106.7	107.2	24	114.7	114.9	115.1	24	108.4	108.8	109.0	24
7/27	109.1	109.5	111.1	24	114.9	115.9	116.6	24	108.2	109.1	110.2	24	115.3	116.0	116.3	24	109.2	110.3	110.8	24
7/28	109.5	110.1	110.6	24	113.8	114.4	114.8	24	109.9	110.1	110.6	24	115.9	116.5	116.8	24	110.9	111.1	111.2	24
7/29	111.2	112.0	113.1	24	114.5	115.4	116.6	24	110.5	112.0	112.8	24	116.1	117.4	118.0	24	110.9	111.3	111.6	24
7/30	111.5	112.7	113.8	24	115.3	116.3	117.1	24	110.4	110.7	111.5	24	115.4	116.0	116.6	24	110.8	111.3	111.5	24
7/31	110.8	111.2	112.1	24	115.5	116.4	117.4	24	111.2	111.7	112.3	24	114.7	115.2	115.3	24	110.7	110.9	111.2	24
8/1	111.4	112.0	113.4	24	115.4	116.0	117.1	24	111.9	112.3	113.4	24	114.7	115.2	115.7	24	110.3	110.8	111.2	24
8/2	111.9	112.3	112.8	24	116.7	117.5	117.9	24	111.2	111.6	111.9	24	114.6	114.8	115.1	24	109.6	110.0	110.3	24
8/3	110.9	111.2	111.4	24	116.4	116.7	116.8	24	109.2	109.7	110.3	24	115.0	115.0	115.8	10	108.2	108.6	108.8	24
8/4	110.5	110.7	111.1	24	116.6	117.0	117.3	24	107.3	107.6	108.1	24	114.3	114.6	114.9	24	106.6	106.9	107.2	24
8/5	109.5	110.0	110.9	24	114.7	115.3	116.6	24	106.1	106.5	106.8	24	114.9	115.4	116.1	24	105.8	106.3	106.4	24
8/6	107.1	107.6	108.0	24	114.5	115.4	115.9	24	104.8	105.2	105.5	24	113.9	114.3	114.5	24	104.8	105.5	106.0	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	The Dalles Dnst				Bonneville				Warrendale				Camas\Washougal				Cascade Island			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/24	111.9	112.4	112.7	24	104.6	105.1	105.3	24	---	---	---	0	114.3	116.1	117.1	24	114.2	115.2	117.2	24
7/25	113.1	113.9	114.4	24	105.4	106.3	106.9	24	---	---	---	0	115.0	116.5	118.0	24	114.9	115.8	117.5	24
7/26	113.3	113.8	114.1	24	107.9	108.9	109.2	24	---	---	---	0	113.6	115.8	117.2	24	114.6	115.4	117.2	24
7/27	113.1	114.0	114.4	24	109.8	111.2	112.4	24	---	---	---	0	116.8	119.0	120.3	24	114.4	115.1	116.7	24
7/28	114.4	115.1	115.7	24	113.9	115.2	115.8	24	---	---	---	0	116.9	118.4	119.2	24	114.5	114.6	114.7	24
7/29	115.1	116.1	116.9	24	114.1	114.4	114.9	24	---	---	---	0	115.0	115.6	117.7	24	114.6	114.7	114.9	24
7/30	115.3	115.6	116.2	24	113.0	113.2	113.7	24	---	---	---	0	115.1	116.6	117.7	24	114.7	114.8	115.0	24
7/31	115.4	115.8	116.2	24	112.1	112.6	113.0	24	---	---	---	0	113.7	115.1	115.8	24	113.4	113.5	114.0	24
8/1	115.4	115.9	116.4	24	110.2	110.8	111.9	24	---	---	---	0	115.4	116.6	117.7	24	114.4	114.8	115.7	24
8/2	114.7	115.0	115.4	24	109.0	109.3	109.5	24	---	---	---	0	113.6	115.0	115.6	24	113.8	114.1	114.4	24
8/3	114.2	114.5	114.8	24	107.7	108.2	108.3	24	---	---	---	0	113.7	114.8	115.3	24	113.5	113.6	114.0	24
8/4	113.1	113.4	113.6	24	108.6	108.6	112.0	6	---	---	---	0	114.2	115.2	115.9	24	114.1	114.5	116.6	24
8/5	112.4	112.9	113.2	24	117.3	124.3	151.6	19	---	---	---	0	113.3	114.8	115.9	24	114.7	115.7	116.6	24
8/6	112.0	112.5	112.9	24	103.8	104.4	105.0	24	---	---	---	0	110.5	111.6	114.1	24	114.6	115.6	116.6	24

Two-Week Summary of Passage Indices

				COMBINED YEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/24/2009	*	---	---	---	---	---	0	15	0	0	24	0
07/25/2009	*	---	---	---	---	0	3	8	0	0	---	0
07/26/2009	*	---	---	---	---	0	0	12	1	0	---	0
07/27/2009	*	---	---	---	---	0	0	23	0	0	---	0
07/28/2009	*	---	---	---	---	0	0	23	0	0	0	---
07/29/2009	*	---	---	---	---	0	0	0	0	0	---	0
07/30/2009	*	---	---	---	---	0	0	5	0	0	---	---
07/31/2009	*	---	---	---	---	0	0	6	0	0	14	0
08/01/2009	*	---	---	---	---	0	0	11	2	0	---	---
08/02/2009	*	---	---	---	---	0	0	0	0	0	---	0
08/03/2009	*	---	---	---	---	0	0	0	0	0	---	---
08/04/2009	*	---	---	---	---	0	0	6	0	0	0	0
08/05/2009	*	---	---	---	---	0	0	0	0	0	---	---
08/06/2009	*	---	---	---	---	0	0	0	0	10	---	0
08/07/2009	*	---	---	---	---	---	---	---	---	---	14	---
Total:		**0**	**0**	**0**	**0**	**0**	**3**	**109**	**3**	**10**	**52**	**0**
# Days:		**0**	**0**	**0**	**0**	**13**	**14**	**14**	**14**	**14**	**5**	**9**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**1**	**10**	**0**
YTD		**37,667**	**44,693**	**20,207**	**29,713**	**3,081,413**	**2,432,948**	**449,028**	**9,225**	**2,251,664**	**1,032,256**	**1,717,083**

				COMBINED SUBYEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/24/2009	*	---	---	---	---	---	874	942	73	7,613	2,095	6,711
07/25/2009	*	---	---	---	---	521	479	560	119	21,872	---	9,140
07/26/2009	*	---	---	---	---	742	418	632	132	14,418	---	21,418
07/27/2009	*	---	---	---	---	1,174	525	1,756	113	14,695	---	15,253
07/28/2009	*	---	---	---	---	1,477	976	1,041	98	14,405	4,625	---
07/29/2009	*	---	---	---	---	1,478	1,056	1,546	145	17,548	---	15,820
07/30/2009	*	---	---	---	---	1,095	1,745	436	131	28,315	---	---
07/31/2009	*	---	---	---	---	547	1,724	567	102	20,873	2,165	25,712
08/01/2009	*	---	---	---	---	404	794	1,274	173	22,909	---	---
08/02/2009	*	---	---	---	---	336	750	536	64	12,382	---	12,679
08/03/2009	*	---	---	---	---	232	821	132	75	10,302	---	---
08/04/2009	*	---	---	---	---	253	661	169	49	3,866	1,009	6,829
08/05/2009	*	---	---	---	---	331	1,023	352	65	4,786	---	---
08/06/2009	*	---	---	---	---	279	983	174	40	14,374	---	9,023
08/07/2009	*	---	---	---	---	---	---	---	---	---	1,300	---
Total:		**0**	**0**	**0**	**0**	**8,869**	**12,829**	**10,117**	**1,379**	**208,358**	**11,194**	**122,585**
# Days:		**0**	**0**	**0**	**0**	**13**	**14**	**14**	**14**	**14**	**5**	**9**
Average:		**0**	**0**	**0**	**0**	**682**	**916**	**723**	**99**	**14,883**	**2,239**	**13,621**
YTD		**0**	**18**	**15**	**545**	**990,349**	**1,175,514**	**431,921**	**7,708**	**3,552,118**	**1,501,051**	**4,283,750**

Two-Week Summary of Passage Indices

				COMBINED COHO								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/24/2009	*	---	---	---	---	---	37	23	3	45	0	0
07/25/2009	*	---	---	---	---	8	11	31	0	21	---	0
07/26/2009	*	---	---	---	---	20	7	12	1	30	---	0
07/27/2009	*	---	---	---	---	23	7	12	0	30	---	0
07/28/2009	*	---	---	---	---	16	24	35	3	0	0	---
07/29/2009	*	---	---	---	---	34	26	28	3	20	---	192
07/30/2009	*	---	---	---	---	45	60	11	0	0	---	---
07/31/2009	*	---	---	---	---	42	60	6	1	41	14	0
08/01/2009	*	---	---	---	---	37	39	86	0	0	---	---
08/02/2009	*	---	---	---	---	32	17	30	1	61	---	0
08/03/2009	*	---	---	---	---	12	17	12	1	0	---	---
08/04/2009	*	---	---	---	---	14	11	6	0	0	0	0
08/05/2009	*	---	---	---	---	16	7	6	0	20	---	---
08/06/2009	*	---	---	---	---	5	14	0	0	10	---	0
08/07/2009	*	---	---	---	---	---	---	---	---	---	0	---
Total:		**0**	**0**	**0**	**0**	**304**	**337**	**298**	**13**	**278**	**14**	**192**
# Days:		**0**	**0**	**0**	**0**	**13**	**14**	**14**	**14**	**14**	**5**	**9**
Average:		**0**	**0**	**0**	**0**	**23**	**24**	**21**	**1**	**20**	**3**	**21**
YTD		**0**	**0**	**0**	**332**	**91,634**	**80,856**	**18,872**	**37,585**	**127,080**	**240,406**	**503,259**

				COMBINED STEELHEAD								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/24/2009	*	---	---	---	---	---	3	0	0	0	0	0
07/25/2009	*	---	---	---	---	0	9	0	0	10	---	0
07/26/2009	*	---	---	---	---	0	0	0	0	0	---	0
07/27/2009	*	---	---	---	---	4	1	6	0	10	---	0
07/28/2009	*	---	---	---	---	0	4	0	0	0	0	---
07/29/2009	*	---	---	---	---	0	9	0	0	0	---	0
07/30/2009	*	---	---	---	---	7	6	5	0	20	---	---
07/31/2009	*	---	---	---	---	4	3	0	1	0	0	73
08/01/2009	*	---	---	---	---	0	6	0	2	0	---	---
08/02/2009	*	---	---	---	---	4	1	0	0	0	---	0
08/03/2009	*	---	---	---	---	4	6	0	0	0	---	---
08/04/2009	*	---	---	---	---	0	0	0	0	0	0	0
08/05/2009	*	---	---	---	---	0	0	0	0	0	---	---
08/06/2009	*	---	---	---	---	5	0	0	0	10	---	0
08/07/2009	*	---	---	---	---	---	---	---	---	---	0	---
Total:		**0**	**0**	**0**	**0**	**28**	**48**	**11**	**3**	**50**	**0**	**73**
# Days:		**0**	**0**	**0**	**0**	**13**	**14**	**14**	**14**	**14**	**5**	**9**
Average:		**0**	**0**	**0**	**0**	**2**	**3**	**1**	**0**	**4**	**0**	**8**
YTD		**1,833**	**24,360**	**9,611**	**8,297**	**4,510,899**	**3,563,504**	**727,829**	**17,609**	**803,725**	**940,630**	**677,048**

Two-Week Summary of Passage Indices

				COMBINED SOCKEYE								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/24/2009	*	---	---	---	---	---	0	0	7	0	0	0
07/25/2009	*	---	---	---	---	0	0	0	12	0	---	0
07/26/2009	*	---	---	---	---	0	4	0	17	0	---	0
07/27/2009	*	---	---	---	---	0	3	6	8	10	---	0
07/28/2009	*	---	---	---	---	0	3	0	8	0	0	---
07/29/2009	*	---	---	---	---	0	0	0	7	0	---	0
07/30/2009	*	---	---	---	---	0	1	0	9	141	---	---
07/31/2009	*	---	---	---	---	0	1	0	4	122	0	0
08/01/2009	*	---	---	---	---	0	0	0	5	41	---	---
08/02/2009	*	---	---	---	---	0	0	6	3	40	---	0
08/03/2009	*	---	---	---	---	0	0	6	5	20	---	---
08/04/2009	*	---	---	---	---	0	0	0	0	20	0	0
08/05/2009	*	---	---	---	---	0	6	0	4	10	---	---
08/06/2009	*	---	---	---	---	0	1	0	4	40	---	0
08/07/2009	*	---	---	---	---	---	---	---	---	---	0	---
Total:		**0**	**0**	**0**	**0**	**0**	**19**	**18**	**93**	**444**	**0**	**0**
# Days:		**0**	**0**	**0**	**0**	**13**	**14**	**14**	**14**	**14**	**5**	**9**
Average:		**0**	**0**	**0**	**0**	**0**	**1**	**1**	**7**	**32**	**0**	**0**
YTD		**170**	**0**	**0**	**177**	**46,492**	**46,358**	**21,692**	**4,886**	**190,665**	**111,931**	**74,913**

* See sampling comments http://www.fpc.org/currentDaily/smpcomments.htm

Smolt indices, clipped & unclipped 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 sampled powerhouse. 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-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

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)}
RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 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)}
BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.
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.

Two Week Transportation Summary

Source: Fish Passage Center Updated: 8/7/09 10:25 AM

07/24/09 TO 08/07/09

		Species					
Site	Data	**CH0**	**CH1**	CO	ST	SO	**Grand Total**
LGR	Sum of NumberCollected	4,564		156	14		4,734
	Sum of NumberBarged	4,836		165	19		5,020
	Sum of NumberBypassed	0		0	0		0
	Sum of Numbertrucked	0		0	0		0
	Sum of SampleMorts	29		0	0		29
	Sum of FacilityMorts	22		1	0		23
	Sum of ResearchMorts	0		0	0		0
	Sum of TotalProjectMorts	51		1	0		52
LGS	Sum of NumberCollected	8,957	2	237	33	14	9,243
	Sum of NumberBarged	8,758	2	221	33	7	9,021
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	129	0	16	0	5	150
	Sum of FacilityMorts	70	0	0	0	2	72
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	199	0	16	0	7	222
LMN	Sum of NumberCollected	5,230	57	154	6	9	5,456
	Sum of NumberBarged	5,077	57	154	5	8	5,301
	Sum of NumberBypassed	109	0	0	0	0	109
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	16	0	0	0	0	16
	Sum of FacilityMorts	28	0	0	1	1	30
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	44	0	0	1	1	46
MCN	Sum of NumberCollected	102,365	5	135	25	220	102,750
	Sum of NumberBarged	102,076	3	138	25	221	102,463
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	108	0	0	0	0	108
	Sum of FacilityMorts	949	2	0	1	1	953
	Sum of ResearchMorts	19	0	0	0	0	19
	Sum of TotalProjectMorts	1,076	2	0	1	1	1,080
Total Sum of NumberCollected		121,116	64	682	78	243	122,183
Total Sum of NumberBarged		120,747	62	678	82	236	121,805
Total Sum of NumberBypassed		109	0	0	0	0	109
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		282	0	16	0	5	303
Total Sum of FacilityMorts		1,069	2	1	2	4	1,078
Total Sum of ResearchMorts		19	0	0	0	0	19
Total Sum of TotalProjectMorts		1,370	2	17	2	9	1,400

YTD Transportation Summary

Source: Fish Passage Center Updated: 8/7/09 10:25 AM

TO: 08/07/09

		Species					
Site	Data	**CH0**	**CH1**	CO	SO	ST	**Grand Total**
LGR	Sum of NumberCollected	699,196	2,352,637	65,599	33,446	3,430,189	6,581,067
	Sum of NumberBarged	679,348	1,500,926	63,525	26,169	1,841,961	4,111,929
	Sum of NumberBypassed	15,858	847,954	1,951	7,068	1,587,772	2,460,603
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	243	118	4	22	33	420
	Sum of FacilityMorts	4,051	2,734	129	192	409	7,515
	Sum of ResearchMorts	19	1,035	0	0	19	1,073
	Sum of TotalProjectMorts	4,313	3,887	133	214	461	9,008
LGS	Sum of NumberCollected	847,201	1,720,160	59,174	33,648	2,517,664	5,177,847
	Sum of NumberBarged	831,474	966,563	56,324	27,766	1,057,251	2,939,378
	Sum of NumberBypassed	9,300	751,922	2,825	5,826	1,460,070	2,229,943
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	384	49	22	9	20	484
	Sum of FacilityMorts	6,031	1,622	3	47	323	8,026
	Sum of ResearchMorts	12	4	0	0	0	16
	Sum of TotalProjectMorts	6,427	1,675	25	56	343	8,526
LMN	Sum of NumberCollected	324,758	321,108	13,945	16,048	518,660	1,194,519
	Sum of NumberBarged	318,181	312,079	13,926	15,870	506,287	1,166,343
	Sum of NumberBypassed	5,814	8,790	9	114	12,089	26,816
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	85	15	1	3	9	113
	Sum of FacilityMorts	576	237	8	7	258	1,086
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	661	252	9	10	267	1,199
MCN	Sum of NumberCollected	1,781,460	1,303,737	69,861	106,275	467,735	3,729,068
	Sum of NumberBarged	392,694	196	438	360	74	393,762
	Sum of NumberBypassed	1,353,699	1,301,926	69,357	105,852	467,487	3,298,321
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	726	149	1	2	14	892
	Sum of FacilityMorts	33,822	1,441	65	59	157	35,544
	Sum of ResearchMorts	518	25	0	1	3	547
	Sum of TotalProjectMorts	35,066	1,615	66	62	174	36,983
Total Sum of NumberCollected		3,652,615	5,697,642	208,579	189,417	6,934,248	16,682,501
Total Sum of NumberBarged		2,221,697	2,779,764	134,213	70,165	3,405,573	8,611,412
Total Sum of NumberBypassed		1,384,671	2,910,592	74,142	118,860	3,527,418	8,015,683
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		1,438	331	28	36	76	1,909
Total Sum of FacilityMorts		44,480	6,034	205	305	1,147	52,171
Total Sum of ResearchMorts		549	1,064	0	1	22	1,636
Total Sum of TotalProjectMorts		46,467	7,429	233	342	1,245	55,716

Cumulative Adult Passage at Mainstem Dams Through: 08/06

		Spring Chinook						Summer Chinook						Fall Chinook					
		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.	
DAM	EndDate	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	08/06	114525	66631	125543	17554	160243	11507	81936	37416	78271	11621	76947	10024	684	287	1970	284	2679	491
TDA	08/06	93908	53646	95438	15801	113852	9048	79916	27878	65073	12206	66821	7950	309	159	811	214	1010	213
JDA	08/06	76806	49733	81772	14925	95147	7579	65989	33147	63649	13680	61980	8146	56	33	225	259	235	74
MCN	08/05	70413	43328	68080	12133	86998	7409	56976	21061	54291	11175	58229	7098	0	0	0	0	0	0
IHR	08/05	55435	28223	53142	7757	59050	4663	23726	9370	23543	4943	13137	2554	0	0	0	0	0	0
LMN	08/05	66931	20009	54512	6885	57079	4270	23221	11637	27089	2829	13570	1875	0	0	0	0	0	0
LGS	08/06	52642	24331	50396	7805	54016	4453	20097	11102	21473	4779	11105	2499	0	0	0	0	0	0
LGR	08/06	49667	31064	50146	10946	54673	5280	14245	16151	22289	5022	11012	2724	0	0	0	0	0	0
PRD	08/04	13469	2910	12178	620	18164	621	48461	2033	37372	1400	50174	1908	0	0	0	0	0	0
RIS	08/05	12634	6003	12490	1119	14914	1069	43067	7045	35544	2598	46281	4702	0	0	0	0	0	0
RRH	08/05	6090	1086	4065	371	5734	430	33004	4740	26358	1722	33377	3137	0	0	0	0	0	0
WEL	08/05	6312	1858	2708	426	4250	321	22059	2848	17413	752	22309	1170	0	0	0	0	0	0
WFA	07/26	24933	2505	13924	353	-	-	728	64	0	0	-	-	0	0	0	0	-	-

	Coho						Sockeye			Steelhead			
	2009		2008		10-Yr Avg.				10-Yr			10-Yr	Wild
DAM	Adult	Jack	Adult	Jack	Adult	Jack	2009	2008	Avg.	2009	2008	Avg.	2009
BON	14	10	1	1	8	0	177761	213567	78560	155913	163613	141277	64381
TDA	4	0	0	0	0	0	155478	177965	66359	59955	89991	61067	25195
JDA	3	7	1	0	3	0	157286	193324	72369	55768	62808	42709	22821
MCN	0	0	0	0	0	0	121641	146892	58725	27560	38124	29461	10480
IHR	0	0	0	0	0	0	866	536	90	19671	22108	14262	5484
LMN	0	0	0	0	0	0	1161	718	103	21061	21819	12796	7536
LGS	0	0	0	0	0	0	1064	591	96	13536	12730	8104	4862
LGR	0	0	0	0	0	0	1197	863	126	16477	14624	12007	4975
PRD	0	0	3	-1	2	0	153033	196665	74571	3400	5027	3243	0
RIS	0	0	0	0	1	0	162679	193488	70501	2539	4151	2426	1294
RRH	0	0	0	0	1	0	132818	160968	51966	2064	3176	1676	1031
WEL	15	0	0	0	0	0	134212	164645	52027	824	1458	786	415
WFA	0	0	0	0	-	-	0	0	-	16795	18235	-	-

BON and LGR have switched to video counts so the data is delayed.
*PRD is not posting wild steelhead numbers.
These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.
Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.
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.

Page last updated on: 08/07/09

BON counts from January 1, 2009 to March 14, 2009 (our traditional counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2009	19	-1	321	109
2008	42	0	568	273