



# Fish Passage Center

## Weekly Report #10 - 22

August 13, 2010

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 2% and 131% of average at individual sub-basins over August. Precipitation above The Dalles has been 87% of average over August. Over the 2010 water year, precipitation has ranged between 85% and 102% of average.

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

Location	Water Year 2010 August 1-9		Water Year 2010 October 1, 2009 to August 9, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	0.50	101	20.01
Snake River Above Ice Harbor	0.24	97	15.76	97
Columbia Above The Dalles	0.30	87	19.84	93
Kootenai	0.64	131	19.95	85
Clark Fork	0.22	58	14.26	90
Flathead	0.30	63	20.85	100
Pend Oreille/ Spokane	0.13	36	27.31	94
Central Washington	0.02	19	8.64	102
Snake River Plain	0.16	96	9.43	91
Salmon/Boise/ Payette	0.18	90	18.26	98
Clearwater	0.33	95	27.20	95
SW Washington Cascades/ Cowlitz	0.14	31	61.79	92
Willamette Valley	0.00	2	53.26	93

Table 2 displays the June Final and July Final runoff volume forecasts for multiple reservoirs. The July Final Runoff Volume Forecasts remained similar to the June Final Forecasts at Upper Columbia locations; however increased between 11-18% relative to the June Final forecasts at Snake River locations. The current forecast at The Dalles between January and July is 81900 Kaf (76% 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)	69	74000	76	81900
Grand Coulee (Jan-July)	74	46400	76	47900
Libby Res. Inflow, MT (Apr-Aug)	71	4420	71	4440
Hungry Horse Res. Inflow, MT (Jan-July)	75	1660	81	1800
Lower Granite Res. Inflow (Apr- July)	68	14600	86	18600
Brownlee Res. Inflow (Apr-July)	58	3670	74	4680
Dworshak Res. Inflow (Apr-July)	63	1670	74	1950

\* Denotes COE Forecast

The Summer Biological Opinion flow period began on June 21 in the lower Snake River (Lower Granite). According to the June Final Water Supply Forecast, the summer flow objective this summer is 50 Kcfs at Lower Granite, flows at Lower Granite Dam have averaged 53.8 Kcfs from June 21-August 12. Flows at Lower Granite have averaged 30.2 Kcfs over the last week.

The Summer Biological Opinion flow period began on July 1<sup>st</sup> at McNary Dam with a flow objective of 200 Kcfs. Flows from July 1<sup>st</sup> to August 12<sup>th</sup> averaged 171.2 Kcfs and 129.9 Kcfs last week.

Grand Coulee Reservoir is at 1284.0 feet (8-12-10) and drafted 1.4 feet over the last week. The end of August draft elevation at Grand Coulee is 1277.3 feet. Outflows at Grand Coulee have ranged between 59.8 and 97.5 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2442.8 feet (8-12-10) and has refilled 0.4 feet last week. Outflows at Libby Dam have been 7.0 Kcfs.

Hungry Horse is currently at an elevation of 3553.1 feet (8-12-10) and has drafted 1.5 ft last week. Outflows at Hungry Horse are currently 4.3-4.5 Kcfs.

Dworshak is currently at an elevation of 1557.5 feet (8-12-10) and has drafted approximately 7.1 feet last week. Outflows from Dworshak are currently 11 Kcfs and are expected to remain at this level through the weekend then reduce to full powerhouse sometime next week.

The Brownlee Reservoir was at an elevation of 2056.2 feet on August 12<sup>th</sup>, 2010 refilling 0.5 feet last week. Over the last week, outflows at Brownlee have ranged between 7.8-10.2 Kcfs.

**Spill:**

On June 21<sup>st</sup> the Snake projects transitioned to the summer spill program. The following table shows the planned operations for summer 2010.

Project	Day/Night Spill
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	<b>June 21-July 13:</b> 30%/30% vs. 45 Kcfs/Gas Cap <b>July 13-August 31:</b> 45 Kcfs/Gas Cap (approximate Gas Cap range = 75-95 Kcfs)

Spill at Dworshak Dam occurred beginning August 11<sup>th</sup>, as the outflow at the project was increased above hydraulic capacity for temperature control. Spill levels at Lower Granite Dam were below the 18 Kcfs at times due to low flows and powerhouse minimums. At Little Goose dam spill was managed to the 30%. Spill levels were met at Lower Monumental Dam, except during times when flows were too low to provide the 17 Kcfs and powerhouse minimum flow. The Ice Harbor simulated test of 30% spill versus 45 Kcfs during daytime hours and gas cap spill during nighttime hours, ended July 13<sup>th</sup>. After that, spill at Ice Harbor reverted back to the 45Kcfs/gas cap level. However, due to low flows spill is presently occurring as all flow in excess of that needed to operate one turbine unit at this project.

Summer spill programs at McNary and Bonneville dams were initiated on June 21<sup>st</sup> and at John Day and The Dalles dams on July 1<sup>st</sup>. The following table shows the planned operations for summer 2010.

Project	Day/Night Spill
McNary	50%/50%
John Day	<b>Testing (July 1-July 22):</b> 30%/30% vs. 40%/40% <b>Post-Testing (July 23-August 31):</b> 30%/30%
The Dalles	40%/40%
Bonneville	<b>Testing (June 16-July 20):</b> 85 Kcfs/121 Kcfs vs. 95 Kcfs/95 Kcfs <b>Post-Testing (July 21-August 31):</b> 75 Kcfs/Gas Cap

The planned spill level of 50% of instantaneous flows was met at McNary Dam this week. At John Day Dam, the spill test ended and spill occurred as 30% of instantaneous flow. The planned spill levels of 40% were met at The Dalles Dam over the past week. Spill at Bonneville Dam occurred to the 75Kcfs/gas cap spill levels. However, gas cap spill levels are presently limited by the low flows and powerhouse minimum flows.

Total dissolved gas levels have been below the States' water quality waiver levels throughout the lower Snake and lower Columbia hydrosystem over the past week.

At present, GBT monitoring is being implemented at Lower Monumental, McNary,

Bonneville and Rock Island dams. No fish were observed with signs of GBT this past week.

### **Smolt Monitoring:**

Subyearling Chinook continued to predominate at all SMP sampling sites as small numbers of spring migrants continue to be collected. Subyearling Chinook passage indices continued to decrease at all sites except Rock Island Dam where the average passage indices increased for the second week running. High temperatures have caused sampling to be modified at both John Day and Bonneville dams this week.

At Lower Granite Dam passage indices for subyearling Chinook continued to decline with the average daily subyearling index at 670 per day this week compared to a daily average of 1,600 last week. Passage indices at Little Goose and Lower Monumental dams followed a similar pattern.

At Rock Island Dam passage indices for subyearlings were higher than last week with the daily index averaging 450 this week compared to about 430 per day last week. A pulse of fish arrived on August 6 with the index rising to 1,461 on that date. A mudslide into the Columbia River above Rock Island Dam on August 3 caused the water to become very turbid at the smolt trap. The SMP crew reported that the fish were lethargic in the sample and did not PIT-tag fish on the 3rd as a result.

At McNary Dam subyearling Chinook predominated over the past week. Indices for subyearling Chinook averaged 11,200 per day this week compared to 16,500 per day average last week. John Day Dam and Bonneville Dam are on limited sampling due to temperatures in excess of 70 degrees F measured in the forebay of the dams.

### **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 zone this week. Furthermore, there are no releases of juvenile salmonids scheduled for this zone 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 releases of juvenile salmonids scheduled for this zone this week. Furthermore, there are no releases of juvenile salmonids scheduled for 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. There were no releases of juvenile salmonids scheduled for this zone this week. There are also no releases of juvenile salmonids scheduled for this zone over the next two weeks.

### **Adult Fish Passage:**

Fall Chinook began to pass Bonneville Dam on August 1<sup>st</sup>. Daily counts of fall Chinook at Bonneville Dam ranged from 355 to 590. The 2010 adult fall Chinook count of 4887 is about 1.08 times greater than the 2009 count, while only being about 78.3% of the 10 average. The 2010 Bonneville Dam fall Chinook jack count of 758 is about 50.2% of the 2009 count and 69.7% of the 10 year average. The 2010 McNary Dam adult fall Chinook count of 924 is about 1.29 times greater than the 2009 count and 1.02 times greater than the 10 year average count. The 2010 fall Chinook jack McNary Dam jack count of 122 is about 50.8% of the 2009 count and about 60% of the 10 year average.

The adult summer Chinook count at Lower Granite Dam in the Snake River of 28680 is about 1.99 times greater than the 2009 count and 2.34 times greater than the 10 year average. The Lower Granite summer Chinook jack count of 5289 is about 32.4% of the 2009 count, while being 1.25 times greater than the 10 year average.

The Bonneville Dam 2010 steelhead count of 264126 is about 1.18 times greater than the 2009 count of 224034. The 2010 steelhead count is about 1.43 times greater than of the 10 year average of 184775. In the Snake River, this year's Lower Granite steelhead count of 26483 is about 1.45 times greater than the 2009 count and about 1.85 times greater than the 10 year average count of 14294. The 2010 LGR wild steelhead count as of August 12th was 10756. The 2010 Rock Island Dam adult steelhead count of 8298 is about 2.24 times greater than the 2009 count and 2.33 times greater than the 10 year average. At Willamette Falls Dam, the 2010 count for steelhead was 28468, as of July 31st. This year's steelhead count is about 1.69 times greater than the 2009 count of 16796 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 3 and 12 last week. The 2010 adult sockeye count at Bonneville Dam of 386499 is about 2.17 times greater than the 2009 count and about 4.1 times greater than the 10 year average. The 2010 adult sockeye count at McNary Dam of

278780 is about 2.29 times greater than the 2009 count and 4 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 zone at Ice Harbor Dam, the 2010 adult sockeye count of 1300 is about 1.50 times greater than the 2009 count of 867 and about 7.43 times greater than the 10 year average count of 175. The Lower Granite Dam 2010 adult sockeye count of 2131 is about 1.76 times greater than the 2009 count of 1207 and 8.8 times greater than the 10 year average of 242.

The coho salmon run at Bonneville Dam is just beginning with 84 adults and 11 jacks counted to date. As of August 12th at Bonneville Dam, the adult Shad count was 1042189 which was about 75.9% of the 2009 count of 1373606 and about 33.7% of the 10 year average count of 3091326.

**Hatchery Releases Last Two Weeks**

**There were no hatchery releases from 07/30/10-8/12/10.**

**Hatchery Releases Next Two Weeks**

**There are no hatchery releases planned from 08/13/10-8/27/10.**

**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
07/30/2010	94.2	0.2	92.4	0.0	95.2	7.6	93.8	8.8	97.6	23.1	97.5	18.4	94.2	25.7
07/31/2010	69.4	0.2	72.2	0.0	75.1	6.1	79.5	7.7	81.5	15.1	80.9	18.7	79.1	26.1
08/01/2010	62.5	0.2	61.0	0.0	57.7	5.6	56.7	6.1	60.5	14.3	66.8	19.0	65.2	26.9
08/02/2010	90.1	0.2	89.7	0.0	93.7	7.3	96.4	8.2	99.9	17.7	94.9	19.2	92.2	26.7
08/03/2010	92.7	0.2	100.7	0.0	105.3	8.1	104.4	9.0	105.9	20.5	109.0	19.3	105.9	24.4
08/04/2010	99.0	0.2	97.4	0.0	103.8	7.6	107.4	8.7	108.7	20.3	111.2	13.1	112.0	26.5
08/05/2010	94.5	0.2	97.7	0.0	100.6	7.0	100.1	8.6	102.4	22.2	105.4	15.4	100.2	27.1
08/06/2010	96.9	0.2	86.8	0.0	91.0	7.2	92.3	8.7	97.6	22.3	102.3	19.7	99.2	27.6
08/07/2010	59.8	0.2	62.5	0.0	74.1	5.6	77.4	6.3	79.6	15.6	96.6	19.2	99.7	26.9
08/08/2010	66.7	0.2	67.5	0.0	66.9	5.0	63.6	5.7	65.4	14.3	68.3	18.5	67.3	26.0
08/09/2010	85.3	0.2	89.0	0.0	90.8	6.5	91.7	8.2	94.2	20.7	103.0	19.5	98.3	26.3
08/10/2010	97.5	0.2	100.1	0.0	103.0	6.5	100.6	8.2	104.5	21.4	100.5	19.7	95.8	26.4
08/11/2010	89.8	0.2	87.2	0.0	93.0	7.6	92.2	8.0	95.3	22.9	101.7	18.9	101.2	25.5
08/12/2010	87.5	0.2	85.1	0.0	87.5	6.7	84.9	8.3	87.9	23.0	92.8	19.2	91.6	26.4

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/30/2010	11.8	2.1	9.5	13.5	39.1	18.6	36.3	10.9	35.4	24.6	35.2	25.3		
07/31/2010	11.7	1.9	8.6	13.7	36.8	18.7	36.4	10.9	35.1	17.2	37.8	28.2		
08/01/2010	11.8	2.0	8.8	12.8	36.2	18.7	36.7	10.9	35.2	17.5	36.7	26.8		
08/02/2010	11.7	1.9	9.2	16.5	38.1	18.7	37.2	11.3	36.8	17.0	37.5	27.7		
08/03/2010	11.8	2.0	9.6	17.8	39.6	18.6	37.8	12.2	39.5	17.1	40.2	30.2		
08/04/2010	13.2	3.4	9.1	19.0	43.4	18.7	40.8	12.3	39.3	15.1	40.3	30.2		
08/05/2010	13.2	3.3	8.6	11.6	38.6	18.7	34.0	10.2	37.2	15.9	38.4	28.4		
08/06/2010	13.1	3.2	8.6	9.4	34.8	18.6	31.9	9.6	32.1	12.8	32.4	22.4		
08/07/2010	9.9	0.0	9.1	9.9	28.8	15.6	26.7	8.0	27.0	11.9	26.7	16.7		
08/08/2010	9.9	0.0	9.3	8.6	29.5	16.9	26.5	7.9	26.8	11.4	27.3	17.2		
08/09/2010	9.6	0.0	9.7	9.6	29.4	16.6	30.4	9.1	30.8	15.7	32.2	22.5		
08/10/2010	9.9	0.0	9.4	8.7	27.2	14.6	24.8	7.4	25.4	10.1	26.0	16.2		
08/11/2010	10.6	0.8	10.2	8.7	30.3	17.3	29.0	8.6	29.5	13.0	27.8	17.6		
08/12/2010	10.9	0.9	---	---	31.6	18.7	30.2	9.1	30.7	12.7	32.8	22.8		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
07/30/2010	146.8	72.9	139.0	41.8	132.8	52.9	143.8	88.6	0.0	42.7
07/31/2010	137.7	68.8	125.1	37.6	117.8	47.1	135.2	88.4	0.1	34.4
08/01/2010	120.4	60.4	113.1	34.0	110.7	44.3	129.1	84.7	0.0	32.0
08/02/2010	111.0	55.7	112.1	33.5	106.7	42.3	117.5	74.7	0.0	30.4
08/03/2010	142.3	71.0	120.7	36.2	115.5	46.2	120.9	77.0	0.0	31.5
08/04/2010	156.5	78.3	151.6	45.9	146.1	58.9	157.2	82.3	0.0	62.5
08/05/2010	147.2	73.7	144.4	43.7	138.4	55.4	162.1	82.0	1.3	66.4
08/06/2010	138.7	69.6	124.4	37.0	116.5	46.5	130.3	82.5	0.0	35.4
08/07/2010	130.4	64.9	123.1	36.9	117.0	46.7	127.0	82.7	0.0	31.9
08/08/2010	122.8	61.8	121.0	36.4	113.5	45.4	128.9	82.2	0.0	34.2
08/09/2010	128.4	63.8	114.7	34.4	109.9	44.3	126.9	82.2	0.0	32.4
08/10/2010	112.8	56.6	107.3	32.2	110.3	44.3	126.7	82.0	0.2	32.1
08/11/2010	146.0	72.7	139.7	42.0	127.6	51.3	136.0	84.5	0.0	39.1
08/12/2010	130.5	65.3	121.5	36.6	115.1	45.8	130.9	86.3	0.0	32.2

## 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
<b>Lower Monumental Dam</b>											
	08/04/10	Chinook + Steelhead	10	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	08/02/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/05/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/09/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	08/03/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/07/10	Chinook + Steelhead	71	0	0	0.00%	0.00%	0	0	0	0
	08/11/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	08/04/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/12/10	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

Date	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
7/30	105.8	106.0	106.2	22	110.2	110.9	111.8	21	111.4	112.0	112.5	24	111.0	111.9	112.9	21	111.2	111.7	112.2	24
7/31	106.1	106.3	106.6	24	110.2	110.7	111.5	23	111.9	112.2	112.6	24	110.5	111.2	111.9	23	111.5	111.8	112.1	24
8/1	105.5	105.7	105.7	24	109.9	110.6	111.5	23	111.6	111.9	112.3	24	109.5	109.9	110.9	23	111.1	111.7	112.4	24
8/2	105.2	105.4	105.7	24	108.7	109.1	109.7	24	111.3	111.4	111.7	24	110.1	111.0	112.0	24	110.8	111.3	111.6	24
8/3	104.9	105.1	105.1	24	108.7	109.1	109.6	21	111.4	111.5	111.7	24	110.2	110.9	111.7	21	110.4	110.8	111.2	24
8/4	104.6	105.1	105.6	24	109.1	109.9	110.9	23	111.0	111.3	111.7	24	109.6	110.8	111.2	23	111.4	112.0	112.3	24
8/5	105.3	106.1	106.6	24	109.8	110.6	111.7	21	111.1	111.3	111.9	24	111.0	111.6	112.1	21	110.8	111.2	111.5	24
8/6	105.9	106.2	106.7	23	109.6	110.0	110.3	20	111.0	111.3	112.2	24	110.6	111.2	111.9	20	110.5	110.8	111.1	24
8/7	105.9	106.3	106.5	24	109.3	109.5	109.7	22	110.4	110.7	111.0	24	109.1	109.5	111.0	22	110.3	110.7	111.6	24
8/8	105.7	105.9	106.2	24	107.1	107.4	108.2	22	109.9	110.2	110.8	24	108.8	109.4	110.0	22	110.2	110.6	111.3	24
8/9	105.6	106.0	106.7	23	106.9	107.4	108.5	21	109.7	110.0	110.3	24	110.1	110.8	111.5	21	109.8	110.5	111.0	24
8/10	105.2	105.4	105.8	24	106.4	106.7	107.5	20	109.5	109.8	110.2	24	109.6	110.1	111.5	20	108.9	109.3	109.8	24
8/11	104.9	105.3	105.6	24	105.7	106.2	106.9	21	109.1	109.4	110.9	24	109.8	110.6	111.4	21	109.7	110.1	110.5	24
8/12	104.8	105.0	105.5	24	105.6	106.1	106.5	22	109.0	109.3	109.7	24	110.2	111.0	111.9	22	108.9	109.2	109.7	24

### Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
7/30	111.9	112.3	113.2	24	112.0	112.6	113.0	24	113.7	114.8	115.5	24	112.4	112.6	112.8	24	112.1	113.1	113.6	24
7/31	112.3	113.1	114.2	24	111.5	112.1	113.6	24	113.0	113.6	114.7	24	112.3	112.6	113.2	24	111.5	112.6	113.3	24
8/1	112.6	113.8	114.8	24	110.8	111.4	111.9	24	112.6	113.4	114.0	24	111.7	112.0	112.3	24	110.7	111.3	111.8	24
8/2	111.6	112.1	112.9	24	110.7	111.4	111.7	23	112.4	113.2	113.6	23	111.2	111.4	111.8	24	111.5	112.4	112.9	24
8/3	111.2	111.6	112.0	24	111.0	111.8	112.6	24	112.9	113.6	114.4	24	110.9	111.2	111.5	24	111.2	112.5	113.5	24
8/4	111.8	112.9	113.6	24	110.2	110.9	111.3	24	111.9	112.4	112.7	24	110.2	110.6	111.2	24	110.9	111.9	112.2	24
8/5	111.3	112.1	112.8	24	111.5	112.7	113.2	23	112.5	113.9	114.7	23	111.6	112.0	112.2	24	111.8	113.0	113.9	24
8/6	111.3	112.0	112.5	24	112.0	112.5	113.0	24	113.5	114.1	114.7	24	111.6	111.8	112.1	24	111.8	112.7	113.7	24
8/7	111.6	112.1	112.5	24	110.4	110.9	111.1	24	111.5	111.8	112.0	24	111.0	111.1	111.3	24	110.7	111.4	111.7	24
8/8	111.5	112.1	112.9	24	110.1	111.1	111.7	24	111.0	111.8	112.3	24	111.2	111.6	112.5	24	110.4	111.2	111.6	24
8/9	110.3	110.9	112.1	24	110.4	111.1	111.7	24	111.5	112.3	112.9	24	110.8	111.1	111.5	24	111.4	112.1	112.7	24
8/10	109.9	110.4	111.0	24	110.0	110.6	111.2	24	111.4	112.0	112.3	24	109.5	109.7	109.9	24	110.8	111.7	112.6	24
8/11	110.7	111.3	112.2	24	109.4	110.3	111.0	24	111.2	112.0	112.5	24	109.8	110.3	110.7	24	110.5	111.8	112.3	24
8/12	110.1	110.8	111.5	24	110.0	110.9	111.5	24	111.4	112.5	113.4	24	110.4	110.7	111.0	24	111.4	112.6	114.0	24

### Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
7/30	111.4	111.9	112.3	24	115.4	116.1	117.5	24	111.3	112.9	113.6	24	113.6	113.9	114.9	24	113.0	113.7	115.3	24
7/31	110.6	111.0	111.9	24	114.5	115.0	115.7	24	111.2	111.4	112.2	16	113.7	114.2	114.8	24	111.7	112.3	113.2	24
8/1	110.6	111.0	111.3	24	114.9	115.3	116.4	24	109.5	110.5	111.3	19	114.5	115.1	115.6	24	111.0	111.6	112.4	24
8/2	110.1	110.4	111.0	24	114.0	114.7	116.5	24	111.2	112.0	113.1	18	113.3	113.7	115.0	24	112.9	114.4	116.4	24
8/3	109.8	110.4	110.9	24	113.5	114.2	116.1	24	111.1	112.3	113.6	21	113.4	114.1	115.3	24	112.7	113.6	114.9	24
8/4	109.7	110.2	110.6	24	113.1	113.5	114.1	24	111.6	112.5	113.4	23	113.2	114.1	115.1	24	112.8	113.6	114.4	24
8/5	109.9	110.8	111.5	24	114.3	115.2	116.1	24	112.0	113.7	115.3	23	113.6	114.4	115.4	24	113.4	114.3	116.7	24
8/6	110.5	110.8	111.1	24	115.1	115.7	116.2	24	109.8	110.6	111.5	24	113.4	114.1	115.2	24	111.7	112.2	113.0	24
8/7	105.0	109.6	110.7	24	113.9	115.2	118.5	24	107.1	108.0	108.7	24	112.2	113.4	114.6	24	109.0	109.6	111.1	24
8/8	99.6	99.6	99.7	24	114.4	115.8	120.2	24	104.5	105.8	107.1	24	113.4	113.7	113.9	24	108.6	109.2	109.7	24
8/9	104.2	108.7	110.4	24	114.3	114.8	116.6	24	107.4	108.1	108.4	24	111.9	112.7	114.1	24	109.2	110.4	111.7	24
8/10	108.5	109.4	110.0	24	112.4	114.5	116.7	24	105.7	107.2	107.9	24	111.6	112.8	113.8	24	108.4	108.9	110.2	24
8/11	108.9	109.5	110.2	24	114.8	115.7	117.3	24	---	---	---	0	---	---	---	0	---	---	---	0
8/12	109.6	110.2	110.6	24	114.9	115.9	116.8	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**

Date	Priest R. Dnst			#	Pasco			#	Dworshak			#	Clwrtr-Peck			#	Anatone			#			
	24 h	12 h			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		Avg	Avg	High
7/30	112.7	113.6	114.0	24	110.2	111.2	111.9	24	103.6	103.9	104.2	24	104.3	105.5	106.4	24	103.0	104.5	105.7	24			
7/31	112.0	112.9	113.7	24	109.1	109.7	110.6	24	103.3	103.6	103.8	24	104.0	105.2	106.3	24	102.4	103.5	104.7	23			
8/1	111.4	112.2	112.5	24	107.3	108.0	108.3	24	103.4	103.6	104.0	24	103.9	105.1	105.9	24	102.1	103.6	105.0	24			
8/2	112.3	113.8	114.6	24	107.7	108.5	109.2	24	103.0	103.4	104.0	24	103.6	104.7	105.5	24	102.3	103.8	105.0	24			
8/3	112.9	113.6	114.0	24	108.3	109.7	110.6	24	103.3	103.6	103.9	24	103.7	105.0	106.0	24	102.4	103.8	105.1	24			
8/4	113.5	114.3	114.6	24	109.2	110.0	110.5	24	108.7	109.1	109.5	24	107.2	108.2	108.9	24	102.4	103.6	104.7	24			
8/5	113.7	114.6	115.0	24	109.9	111.2	111.8	24	108.9	109.3	109.9	24	107.8	108.5	109.5	24	102.7	104.0	105.3	24			
8/6	113.2	113.9	114.5	24	110.0	110.7	111.3	24	108.4	108.8	109.2	24	107.2	108.1	109.1	24	102.1	103.5	104.7	24			
8/7	111.4	111.8	112.3	24	108.4	109.1	109.5	24	99.9	100.2	100.8	24	102.2	103.5	105.6	23	101.7	103.2	104.5	24			
8/8	110.5	111.0	111.5	24	107.4	108.1	108.4	24	99.7	100.0	100.3	24	101.4	102.7	103.8	23	101.6	103.1	104.5	24			
8/9	110.9	112.0	112.6	24	107.6	108.3	109.5	24	99.0	99.4	100.1	24	100.9	101.8	102.7	21	101.5	102.9	104.0	24			
8/10	110.4	110.8	111.3	24	106.2	107.3	107.7	24	98.2	98.5	98.8	24	100.4	101.6	102.7	23	101.1	102.4	103.6	24			
8/11	---	---	---	0	106.3	107.0	107.3	24	99.4	100.6	106.2	24	101.0	102.5	105.0	22	100.8	101.8	103.2	24			
8/12	---	---	---	0	107.2	108.4	109.1	24	99.2	99.7	100.0	24	101.3	102.7	103.9	23	101.1	102.3	102.7	24			

**Total Dissolved Gas Saturation Data at Snake River Sites**

Date	Clwrtr-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			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
7/30	104.5	106.9	108.5	24	103.6	103.8	104.1	24	115.2	115.5	115.9	24	111.9	112.1	112.1	24	111.9	112.5	112.9	24			
7/31	104.1	106.2	107.8	24	103.1	103.6	103.8	24	115.6	116.0	116.2	24	111.2	111.3	111.7	24	112.0	112.3	112.6	24			
8/1	103.7	105.9	107.5	24	101.9	102.1	102.9	24	115.4	115.8	116.0	24	111.2	111.5	111.7	24	112.1	112.4	112.8	24			
8/2	103.5	105.5	106.9	24	102.5	103.0	103.6	24	115.1	115.4	115.9	24	111.5	111.7	111.9	24	112.9	113.8	114.5	24			
8/3	103.4	105.5	106.8	24	102.8	103.1	103.8	24	114.9	115.2	115.4	24	111.3	111.5	111.8	24	112.2	113.1	115.1	24			
8/4	104.3	107.0	108.7	24	101.8	102.0	102.3	24	114.1	114.4	115.1	24	111.4	111.5	111.7	24	111.6	112.4	113.0	24			
8/5	105.2	107.4	108.9	24	101.9	102.4	102.9	24	114.8	115.2	115.7	24	112.3	113.1	114.6	24	110.3	110.8	111.1	24			
8/6	104.5	106.0	106.9	24	102.1	102.3	102.6	24	114.9	115.2	115.5	24	113.1	113.4	114.0	24	109.1	109.7	109.9	24			
8/7	103.4	104.8	105.7	24	101.5	101.8	102.2	24	113.8	114.8	115.5	24	113.3	113.5	113.8	24	108.8	109.3	109.9	24			
8/8	102.2	104.0	105.6	23	101.5	101.9	102.3	24	114.5	115.4	116.0	24	112.0	112.4	112.9	24	108.7	109.2	109.6	24			
8/9	101.9	103.7	105.0	24	99.9	100.6	101.0	24	114.2	114.9	115.2	24	111.5	111.7	111.8	24	108.6	109.0	109.6	24			
8/10	101.8	103.3	104.8	22	100.4	101.1	101.5	24	113.7	114.6	115.1	24	111.6	111.9	112.4	24	108.2	108.7	108.9	24			
8/11	101.8	103.3	104.0	23	101.0	101.3	101.6	24	114.4	114.8	115.0	24	110.1	110.4	111.1	24	108.2	108.6	109.4	24			
8/12	102.6	104.4	105.7	23	101.2	101.7	102.0	24	114.9	115.2	115.5	24	109.5	109.7	109.9	24	107.7	108.5	109.1	24			

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

Date	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			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
7/30	110.6	110.9	111.1	24	118.5	120.4	120.9	24	113.7	114.0	114.3	24	113.9	114.5	115.0	24	---	---	---	0			
7/31	110.6	110.9	111.3	24	115.4	115.7	115.9	24	113.3	113.4	114.1	24	114.0	114.4	114.9	24	---	---	---	0			
8/1	110.3	110.6	111.0	24	116.1	116.6	117.4	24	113.3	113.5	114.0	24	113.9	114.3	114.9	24	---	---	---	0			
8/2	110.4	110.6	110.8	24	116.0	116.5	117.1	24	113.7	114.1	114.6	24	113.0	113.5	114.5	24	---	---	---	0			
8/3	110.3	110.5	110.8	24	116.1	116.6	116.9	24	113.9	114.1	114.4	24	113.8	114.6	115.2	24	---	---	---	0			
8/4	111.0	111.4	112.1	24	114.1	115.1	115.6	24	113.4	113.7	114.1	24	113.8	115.1	115.9	24	---	---	---	0			
8/5	112.4	112.8	113.2	24	116.1	116.9	117.6	24	114.0	114.4	114.6	24	113.4	113.8	114.2	24	---	---	---	0			
8/6	112.8	112.9	113.2	24	114.8	115.9	116.7	24	114.2	114.3	114.6	24	111.8	112.7	113.5	24	---	---	---	0			
8/7	112.0	112.2	112.4	24	114.6	115.5	116.7	24	113.6	113.8	113.8	24	112.4	113.3	114.0	24	---	---	---	0			
8/8	111.4	111.5	111.6	24	114.3	115.0	116.9	24	113.1	113.2	113.3	24	111.8	112.6	113.3	24	---	---	---	0			
8/9	110.5	110.9	111.1	24	115.5	116.7	116.9	24	112.6	112.8	112.9	24	113.6	114.2	114.7	24	---	---	---	0			
8/10	108.2	108.6	109.7	24	112.6	113.0	113.3	24	111.1	111.5	112.0	24	111.5	112.2	112.9	24	---	---	---	0			
8/11	107.9	108.2	108.8	24	113.8	115.0	116.5	24	110.2	110.4	110.8	24	110.9	111.5	112.1	24	---	---	---	0			
8/12	107.4	107.6	107.8	24	113.7	114.7	116.2	24	109.9	110.2	110.5	24	112.3	113.1	113.6	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

Date	<u>McNary-Wash</u>				<u>McNary Tlwr</u>				<u>John Day</u>				<u>John Day Tlwr</u>				<u>The Dalles</u>			
	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24h</u>		<u>12h</u>		#	<u>24h</u>		<u>12h</u>		#
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
7/30	108.2	108.5	109.0	24	116.8	117.7	119.2	24	107.7	108.2	108.8	24	114.9	115.3	115.7	24	107.3	107.7	107.8	24
7/31	107.8	108.2	108.9	24	115.6	116.4	117.3	24	107.5	107.8	108.1	24	114.1	115.1	115.4	24	105.5	105.8	106.0	24
8/1	108.8	109.2	109.6	24	115.0	115.5	116.8	24	106.8	107.1	107.5	24	113.7	114.7	115.0	24	105.2	105.8	106.1	24
8/2	108.5	108.8	109.0	24	114.9	115.2	115.7	24	106.4	106.6	106.9	24	114.3	114.7	115.0	24	106.1	106.6	107.0	24
8/3	108.5	108.7	109.4	24	115.3	116.5	117.0	24	105.9	106.2	106.5	24	113.8	114.9	115.9	24	105.9	106.2	106.5	24
8/4	108.2	108.6	109.2	24	116.3	117.0	117.5	24	105.7	106.2	106.4	24	114.4	115.3	115.6	24	106.7	107.6	108.0	24
8/5	108.5	108.9	109.4	24	116.0	116.4	116.7	24	106.5	106.6	106.8	24	115.1	115.4	116.0	24	108.6	109.0	109.3	24
8/6	108.2	108.9	109.8	24	115.5	115.9	116.4	24	105.6	105.9	106.3	24	114.4	114.7	115.3	24	107.1	107.6	107.7	24
8/7	109.3	109.5	109.6	24	115.9	116.8	117.2	24	104.7	104.8	104.9	24	113.8	114.3	114.5	24	104.6	104.9	105.0	24
8/8	108.5	108.8	109.2	24	116.2	117.1	117.6	24	104.5	104.8	105.1	24	114.0	114.4	114.7	24	104.3	104.8	105.1	24
8/9	106.9	107.4	107.9	24	114.8	115.5	116.5	24	104.1	104.3	104.5	24	113.6	114.0	115.0	24	104.2	104.5	104.8	24
8/10	105.7	106.0	106.3	24	114.4	114.7	114.9	24	103.3	103.5	103.7	24	113.7	114.4	114.8	24	103.2	103.5	103.7	24
8/11	105.4	105.7	105.9	24	115.2	116.4	117.2	24	103.0	103.1	103.3	24	114.7	115.2	116.3	24	103.9	104.7	104.9	24
8/12	104.8	105.2	105.5	24	114.6	115.4	117.0	24	102.6	102.8	103.1	24	114.4	114.9	115.8	24	105.7	106.1	106.5	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>				<u>Bonneville</u>				<u>Warrendale</u>				<u>Camas\Washougal</u>				<u>Cascade Island</u>			
	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24h</u>		<u>12h</u>		#	<u>24h</u>		<u>12h</u>		#
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
7/30	114.0	114.3	114.6	24	106.8	106.9	107.1	24	115.3	115.9	116.9	24	111.6	113.5	115.3	24	114.9	116.4	118.8	24
7/31	112.3	112.7	113.1	24	105.0	105.3	106.2	24	115.3	116.0	117.3	24	112.3	113.8	115.0	24	114.6	116.0	118.5	24
8/1	112.1	112.4	112.6	24	104.3	104.7	104.9	24	115.7	116.3	117.5	24	114.0	115.9	117.1	24	114.1	115.2	118.5	24
8/2	112.4	112.9	113.4	24	104.4	104.8	105.0	24	114.7	115.2	115.7	24	114.2	115.3	115.7	24	112.9	113.0	113.0	24
8/3	112.4	112.9	113.4	24	104.6	105.2	105.7	24	113.3	113.8	114.3	24	113.5	114.5	115.0	24	113.3	113.7	116.4	24
8/4	113.4	114.1	114.9	24	105.3	105.9	106.3	24	114.5	115.5	116.7	24	113.6	115.0	116.1	24	114.9	115.9	117.3	24
8/5	114.8	115.3	115.8	24	106.9	107.6	107.9	24	114.7	115.2	115.5	24	112.8	114.5	115.7	24	115.3	116.2	117.5	24
8/6	113.5	114.0	114.2	24	106.7	106.9	107.0	24	115.0	115.6	116.2	24	111.3	112.5	113.4	24	114.9	115.9	117.4	24
8/7	112.1	112.5	113.0	24	105.1	105.3	105.8	24	115.6	116.0	116.5	24	112.5	114.0	114.9	24	114.7	115.7	117.1	24
8/8	111.7	112.1	112.6	24	104.7	105.0	105.3	24	115.9	116.1	116.6	24	113.2	114.2	115.0	24	114.3	115.5	116.7	24
8/9	111.3	111.5	111.8	24	103.8	104.0	104.3	24	114.9	115.2	115.4	24	111.7	112.6	113.5	24	114.3	115.5	116.7	24
8/10	110.9	111.2	111.3	24	102.8	103.0	103.3	24	115.1	115.5	115.8	24	111.7	112.8	113.4	24	114.2	115.4	116.8	24
8/11	111.5	112.2	112.5	24	103.0	103.2	103.3	24	115.4	115.8	116.0	24	112.7	114.0	115.0	24	114.4	115.7	117.2	24
8/12	112.5	112.9	113.2	24	104.0	104.6	104.9	24	116.0	116.5	117.1	24	112.7	114.3	115.2	24	114.4	115.8	117.6	24

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/30/2010 *	---	---	---	---	0	0	61	0	0	0	0
07/31/2010 *	---	---	---	---	0	0	24	0	0	---	0
08/01/2010 *	---	---	---	---	0	0	138	0	0	---	0
08/02/2010 *	---	---	---	---	0	0	20	0	21	---	0
08/03/2010 *	---	---	---	---	0	6	0	0	0	0	0
08/04/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/05/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/06/2010 *	---	---	---	---	0	3	0	1	0	0	0
08/07/2010 *	---	---	---	---	0	6	0	0	0	---	---
08/08/2010 *	---	---	---	---	4	3	0	0	0	---	0
08/09/2010 *	---	---	---	---	0	13	0	0	0	---	---
08/10/2010 *	---	---	---	---	0	1	0	0	0	0	0
08/11/2010 *	---	---	---	---	0	0	0	0	0	---	---
08/12/2010 *	---	---	---	---	0	0	15	0	0	---	0
08/13/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>32</b>	<b>258</b>	<b>1</b>	<b>21</b>	<b>0</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>4</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>18</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>YTD</b>	<b>56,130</b>	<b>80,004</b>	<b>27,916</b>	<b>7,995</b>	<b>2,452,568</b>	<b>1,260,507</b>	<b>452,072</b>	<b>11,800</b>	<b>2,093,842</b>	<b>1,034,554</b>	<b>2,302,148</b>

COMBINED SUBYEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/30/2010 *	---	---	---	---	2,758	2,036	2,680	511	12,585	1,794	9,660
07/31/2010 *	---	---	---	---	1,311	2,084	1,833	729	23,451	---	6,099
08/01/2010 *	---	---	---	---	727	2,013	2,590	419	23,271	---	3,300
08/02/2010 *	---	---	---	---	810	2,262	589	220	31,226	---	3,015
08/03/2010 *	---	---	---	---	893	1,611	618	433	5,127	1,183	3,734
08/04/2010 *	---	---	---	---	1,203	1,430	280	305	10,401	---	4,334
08/05/2010 *	---	---	---	---	1,074	1,083	224	386	9,904	---	11,680
08/06/2010 *	---	---	---	---	1,038	885	372	1,461	15,991	1,187	11,583
08/07/2010 *	---	---	---	---	707	1,031	122	484	13,429	---	---
08/08/2010 *	---	---	---	---	296	798	167	268	7,660	---	2,591
08/09/2010 *	---	---	---	---	414	892	91	263	5,468	---	---
08/10/2010 *	---	---	---	---	492	1,130	101	188	12,388	1,435	4,297
08/11/2010 *	---	---	---	---	648	1,423	148	128	13,685	---	---
08/12/2010 *	---	---	---	---	939	1,293	311	158	24,204	---	6,012
08/13/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13,310</b>	<b>19,971</b>	<b>10,126</b>	<b>5,953</b>	<b>208,790</b>	<b>5,599</b>	<b>66,305</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>4</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>951</b>	<b>1,427</b>	<b>723</b>	<b>425</b>	<b>14,914</b>	<b>1,400</b>	<b>6,028</b>
<b>YTD</b>	<b>0</b>	<b>42</b>	<b>28</b>	<b>1,275</b>	<b>1,012,566</b>	<b>1,291,703</b>	<b>767,577</b>	<b>22,274</b>	<b>3,647,420</b>	<b>2,201,330</b>	<b>5,071,657</b>

Two-Week Summary of Passage Indices

COMBINED COHO											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/30/2010 *	---	---	---	---	10	0	0	2	21	0	0
07/31/2010 *	---	---	---	---	0	3	0	7	0	---	0
08/01/2010 *	---	---	---	---	0	0	0	4	21	---	0
08/02/2010 *	---	---	---	---	4	6	0	0	0	---	0
08/03/2010 *	---	---	---	---	0	0	0	4	0	0	0
08/04/2010 *	---	---	---	---	0	0	0	4	0	---	0
08/05/2010 *	---	---	---	---	0	0	0	3	0	---	0
08/06/2010 *	---	---	---	---	0	0	0	9	21	10	0
08/07/2010 *	---	---	---	---	0	0	0	3	0	---	---
08/08/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/09/2010 *	---	---	---	---	0	0	0	1	0	---	---
08/10/2010 *	---	---	---	---	0	0	0	3	0	0	0
08/11/2010 *	---	---	---	---	0	0	0	0	0	---	---
08/12/2010 *	---	---	---	---	0	0	0	2	41	---	0
08/13/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>9</b>	<b>0</b>	<b>42</b>	<b>104</b>	<b>10</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>4</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>0</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>	<b>40,146</b>	<b>53,894</b>	<b>13,604</b>	<b>41,437</b>	<b>85,738</b>	<b>111,156</b>	<b>524,764</b>

COMBINED STEELHEAD											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/30/2010 *	---	---	---	---	0	0	0	0	0	0	0
07/31/2010 *	---	---	---	---	0	3	0	0	0	---	0
08/01/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/02/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/03/2010 *	---	---	---	---	0	6	0	0	0	0	0
08/04/2010 *	---	---	---	---	0	0	6	0	21	---	0
08/05/2010 *	---	---	---	---	0	0	7	0	0	---	9
08/06/2010 *	---	---	---	---	4	6	0	1	0	0	0
08/07/2010 *	---	---	---	---	4	6	0	0	0	---	---
08/08/2010 *	---	---	---	---	4	3	0	0	0	---	0
08/09/2010 *	---	---	---	---	0	0	8	0	0	---	---
08/10/2010 *	---	---	---	---	0	3	0	0	0	0	0
08/11/2010 *	---	---	---	---	0	6	0	0	0	---	---
08/12/2010 *	---	---	---	---	5	0	0	0	0	---	0
08/13/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>33</b>	<b>21</b>	<b>1</b>	<b>21</b>	<b>0</b>	<b>9</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>4</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>
<b>YTD</b>	<b>4,385</b>	<b>27,688</b>	<b>4,051</b>	<b>11,795</b>	<b>2,045,783</b>	<b>1,594,124</b>	<b>427,837</b>	<b>17,300</b>	<b>448,203</b>	<b>594,800</b>	<b>942,451</b>

## Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/30/2010 *	---	---	---	---	0	0	0	0	0	0	0
07/31/2010 *	---	---	---	---	10	3	0	1	21	---	0
08/01/2010 *	---	---	---	---	10	0	0	1	21	---	0
08/02/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/03/2010 *	---	---	---	---	0	0	0	0	0	0	0
08/04/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/05/2010 *	---	---	---	---	4	0	0	0	0	---	54
08/06/2010 *	---	---	---	---	0	6	0	1	21	0	0
08/07/2010 *	---	---	---	---	0	0	0	0	21	---	---
08/08/2010 *	---	---	---	---	0	0	0	0	0	---	19
08/09/2010 *	---	---	---	---	0	0	0	4	0	---	---
08/10/2010 *	---	---	---	---	0	0	0	0	0	0	0
08/11/2010 *	---	---	---	---	0	0	0	2	21	---	---
08/12/2010 *	---	---	---	---	0	0	0	2	21	---	0
08/13/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>9</b>	<b>0</b>	<b>11</b>	<b>126</b>	<b>0</b>	<b>73</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>4</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>7</b>
<b>YTD</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>8,757</b>	<b>12,821</b>	<b>2,202</b>	<b>36,506</b>	<b>1,469,036</b>	<b>656,015</b>	<b>803,520</b>

\* 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:

8/13/10 10:13 AM

		07/30/10 TO 08/13/10					
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	6,472	2	7	8	12	6,501
	Sum of NumberBarged	6,405	2	6	8	12	6,433
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	35	0	1	0	0	36
	Sum of FacilityMorts	32	0	0	0	0	32
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	67	0	1	0	0	68
<b>LGS</b>	Sum of NumberCollected	13,845	22	6	22	6	13,901
	Sum of NumberBarged	13,690	22	6	20	5	13,743
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	57	0	0	0	1	58
	Sum of FacilityMorts	98	0	0	2	0	100
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	155	0	0	2	1	158
<b>LMN</b>	Sum of NumberCollected	4,610	118			12	4,740
	Sum of NumberBarged	4,547	118			12	4,677
	Sum of NumberBypassed	20	0			0	20
	Sum of Numbertrucked	0	0			0	0
	Sum of SampleMorts	4	0			0	4
	Sum of FacilityMorts	39	0			0	39
	Sum of ResearchMorts	0	0			0	0
	Sum of TotalProjectMorts	43	0			0	43
<b>MCN</b>	Sum of NumberCollected	100,580	10	50	10	60	100,710
	Sum of NumberBarged	75,734	29	20	10	40	75,833
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	27,773	0	30	0	20	27,823
	Sum of SampleMorts	133	0	0	0	0	133
	Sum of FacilityMorts	1,039	1	0	0	0	1,040
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,172	1	0	0	0	1,173
Total Sum of NumberCollected		125,507	152	63	52	78	125,852
Total Sum of NumberBarged		100,376	171	32	50	57	100,686
Total Sum of NumberBypassed		20	0	0	0	0	20
Total Sum of Numbertrucked		27,773	0	30	0	20	27,823
Total Sum of SampleMorts		229	0	1	0	1	231
Total Sum of FacilityMorts		1,208	1	0	2	0	1,211
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		1,437	1	1	2	1	1,442

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

8/13/10 10:13 AM

TO: 08/13/10

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	606,360	1,622,344	28,342	5,787	1,358,146	3,620,979
	Sum of NumberBarged	604,436	1,428,784	28,331	5,772	1,309,481	3,376,804
	Sum of NumberBypassed	700	191,860	0	10	48,344	240,914
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	190	54	1	0	19	264
	Sum of FacilityMorts	1,034	1,231	10	5	285	2,565
	Sum of ResearchMorts	0	415	0	0	17	432
	Sum of TotalProjectMorts	1,224	1,700	11	5	321	3,261
<b>LGS</b>	Sum of NumberCollected	849,108	873,189	36,897	8,874	1,085,571	2,853,639
	Sum of NumberBarged	843,287	791,511	36,896	8,872	1,025,862	2,706,428
	Sum of NumberBypassed	68	81,373	0	0	59,473	140,914
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	182	29	1	1	10	223
	Sum of FacilityMorts	5,571	276	0	1	226	6,074
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	5,753	305	1	2	236	6,297
<b>LMN</b>	Sum of NumberCollected	508,056	305,742	8,789	1,524	239,902	1,064,013
	Sum of NumberBarged	506,894	304,257	8,789	1,421	234,679	1,056,040
	Sum of NumberBypassed	518	1,473	0	0	5,000	6,991
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	48	9	0	0	10	67
	Sum of FacilityMorts	615	201	0	3	314	1,133
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	663	210	0	3	324	1,200
<b>MCN</b>	Sum of NumberCollected	1,805,198	1,224,094	47,425	848,850	260,020	4,185,587
	Sum of NumberBarged	280,229	173	60	180	79	280,721
	Sum of NumberBypassed	1,490,588	1,222,563	47,275	847,904	259,728	3,868,058
	Sum of NumberTrucked	27,773	0	30	20	0	27,823
	Sum of SampleMorts	402	121	5	96	16	640
	Sum of FacilityMorts	6,156	1,237	55	650	197	8,295
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	6,558	1,358	60	746	213	8,935
Total Sum of NumberCollected		3,768,722	4,025,369	121,453	865,035	2,943,639	11,724,218
Total Sum of NumberBarged		2,234,846	2,524,725	74,076	16,245	2,570,101	7,419,993
Total Sum of NumberBypassed		1,491,874	1,497,269	47,275	847,914	372,545	4,256,877
Total Sum of NumberTrucked		27,773	0	30	20	0	27,823
Total Sum of SampleMorts		822	213	7	97	55	1,194
Total Sum of FacilityMorts		13,376	2,945	65	659	1,022	18,067
Total Sum of ResearchMorts		0	415	0	0	17	432
Total Sum of TotalProjectMorts		14,198	3,573	72	756	1,094	19,693

Cumulative Adult Passage at Mainstem Dams Through: 08/12

DAM	EndDate	Spring Chinook						Summer Chinook					
		2010		2009		10-Yr Avg.		2010		2009		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	08/12	244384	12612	114525	66631	167834	17301	97604	15603	81936	37416	82525	13362
TDA	08/12	189839	11546	93908	53646	121486	13792	81292	12528	79916	27878	72634	10423
JDA	08/12	179446	11794	76806	49733	101283	12037	70955	12475	65989	33147	66361	11207
MCN	08/12	153246	9178	70413	43328	93119	11340	66526	8063	57137	21182	62804	9141
IHR	08/12	101188	6047	55435	28223	64058	7222	29583	3503	23856	9400	15236	3378
LMN	08/12	97334	5898	66931	20009	63381	6004	35057	4354	23323	11719	15687	2938
LGS	08/12	92985	5461	52642	24331	58937	6617	32204	3928	20201	11164	12900	3466
LGR	08/12	94203	6409	49667	31064	59309	8137	28680	5289	14357	16277	12222	4214
PRD	08/11	30539	932	13469	2910	19097	834	48771	1195	49156	2086	55502	2442
RIS	08/11	29684	1513	12634	6003	15841	1581	45970	3603	43675	7404	51029	5737
RRH	08/11	8660	523	6090	1086	6208	510	32434	1428	33884	4959	38021	3909
WEL	08/11	7555	661	6307	1867	4866	487	23903	1228	22996	3115	25803	1679
WFA	07/31	64028	1575	25673	2581	-	-	-	-	-	-	-	-

DAM	Fall Chinook					
	2010		2009		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack
BON	4887	758	4529	1511	6240	1088
TDA	2839	514	2532	819	3182	673
JDA	1466	339	1207	547	1577	532
MCN	924	122	714	240	907	203
IHR	48	3	44	10	18	3
LMN	0	0	0	0	0	0
LGS	0	0	0	0	0	0
LGR	0	0	0	0	0	0
PRD	0	0	0	0	0	0
RIS	0	0	0	0	0	0
RRH	0	0	0	0	0	0
WEL	0	0	0	0	0	0
WFA	0	0	0	0	-	-

DAM	Coho						Sockeye			Steelhead			
	2010		2009		10-Yr Avg.		2010	2009	10-Yr Avg.	2010	2009	10-Yr Avg.	Wild 2010
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	84	11	165	60	85	15	386499	177782	94572	264126	224034	184775	112762
TDA	3	0	9	0	0	0	325110	155510	80560	136711	71258	70648	65700
JDA	7	4	9	10	3	0	324105	157323	86644	96632	62059	51075	45639
MCN	2	0	3	2	0	0	278780	121651	69733	79694	31197	36255	34829
IHR	0	0	0	0	0	0	1300	867	175	50552	21122	18696	17092
LMN	0	0	0	0	0	0	1648	1161	220	42224	22863	17142	16650
LGS	0	0	0	0	0	0	1648	1065	197	23775	14775	10504	9649
LGR	0	0	0	0	0	0	2131	1207	242	26483	18246	14294	10756
PRD	0	2	0	0	2	0	357001	153291	88479	12638	4860	4769	-
RIS	0	0	0	1	1	0	338154	162759	85349	8298	3702	3557	4392
RRH	0	0	0	0	1	0	295343	132944	64156	5301	2962	2497	2492
WEL	0	0	0	0	0	0	290984	134570	64802	2696	1311	1187	1218
WFA	0	0	0	0	-	-	-	-	-	28468	16796	-	-

PRD does not post 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: 08/13/2010  
BON counts from January 1, 2009 to March 14, 2010 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2010	39	0	2,318	657
2009	19	-1	321	109