



## Fish Passage Center

# Weekly Report #10 - 21

August 6, 2010

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 19% and 76% of average at individual sub-basins over July. Precipitation above The Dalles has been 43% of average over July. Over the 2010 water year, precipitation has ranged between 84% and 102% of 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 2010 July 1-26		Water Year 2010 October 1, 2009 to July 26, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.83	55	19.28	88
Snake River Above Ice Harbor	0.20	26	15.32	97
Columbia Above The Dalles	0.45	43	19.35	93
Kootenai	0.83	52	19.07	84
Clark Fork	0.44	44	13.68	90
Flathead	1.01	76	20.60	102
Pend Oreille/ Spokane	0.52	45	26.87	95
Central Washington	0.06	19	8.47	102
Snake River Plain	0.11	22	9.05	90
Salmon/Boise/ Payette	0.19	28	17.77	97
Clearwater	0.27	22	26.69	95
SW Washington Cascades/Cowlitz	0.31	26	61.59	92
Willamette Valley	0.21	30	53.25	94

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 57.4 Kcfs from June 21-August 5. Flows at Lower Granite have averaged 38.8 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 5<sup>th</sup> averaged 179.2 Kcfs and 137.4 Kcfs last week.

Grand Coulee Reservoir is at 1285.9 feet (8-5-10) and drafted 0.7 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 62.5 and 99.0 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2442.4 feet (8-5-10) and has refilled 0.5 feet last week. Outflows at Libby Dam have been 7.0 Kcfs.

Hungry Horse is currently at an elevation of 3555.0 feet (8-5-10) and has drafted 1.3 ft last week. Outflows at Hungry Horse are currently 4.3 Kcfs.

Dworshak is currently at an elevation of 1566.0 feet (8-5-10) and has drafted approximately 8.3 feet last week. Outflows from Dworshak are currently 13.3 Kcfs and are expected to remain at this level through Friday then reduce to full powerhouse (approximately 9.7 Kcfs) on Saturday.

The Brownlee Reservoir was at an elevation of 2056.3 feet on August 5<sup>th</sup>, 2010 drafting 5.8 feet last week. Over the last week, outflows at Brownlee have ranged between 11.5-19.1 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.

<b>Project</b>	<b>Day/Night Spill</b>
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 began on July 15<sup>th</sup>, as the outflow at the project was increased above hydraulic capacity for flow augmentation and temperature control. Spill levels at Lower Granite and Little Goose dams were managed to their respective planned summer levels. 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.

<b>Project</b>	<b>Day/Night Spill</b>
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 is supposed to be to the 75Kcfs/gas cap spill levels. However, due to low flows and powerhouse minimums spill was often limited to 75 Kcfs over the past week.

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 Little Goose, Lower Monumental,

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

#### **Smolt Monitoring:**

Subyearling Chinook 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 this past week. High temperatures have caused sampling to be modified at both John Day and Bonneville dams this week.

At Lower Granite Dam passage indices for all smolts decreased over the past week. Subyearling Chinook are the primary species passing, but small numbers of all spring migrants were collected during the last week. Subyearling Chinook passage indices peaked on June 5 at 115,000. The average daily subyearling index fell to 1,200 per day this week compared to a daily average of 2,400 last week. Passage indices at Little Goose and Lower Monumental dams followed a similar pattern.

At Rock Island Dam subyearling summer migrants predominated in the sample over the past month. Passage indices for subyearlings were higher than last week with the daily index averaging 430 this week compared to about 220 per day last week. 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 16,500 per day this week compared to 21,000 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 318 to 438. The 2010 adult fall Chinook count of 1899 is about 3.5 times greater than the 2009 count, while only being about 87.8% of the 10 average. The 2010 Bonneville Dam fall Chinook jack count of 289 is about 1.24 times greater than the 2009 count. However, the fall Chinook jack count is only about 72.4% of the 10 year average.

The 2010 Bonneville Dam adult summer Chinook count ended on 7/31. The adult summer Chinook count of 97604 was about 1.19 times greater than the 2009 count and 1.18 times greater than the 10 year average. The 2010 Bonneville Dam summer Chinook jack count of 15603 is only about 41.7% of the 2009 count. However, the 2010 Bonneville Dam summer Chinook jack count is about 1.17 times greater than the 10 year average count. At McNary Dam 65991 adult summer Chinook have been counted. The 2010 McNary adult summer Chinook is about 1.16 times greater than the 2009 count and about 1.06 times greater than the 10 average. The 2010 summer Chinook jack count of 7997 is about 38% of the 2009 count and 89% of the 10 year average. The adult summer Chinook count at Lower Granite Dam in the Snake River of 28258 is about 1.99 times greater than the 2009 count and 2.33 times greater than the 10 year average. The Lower Granite summer Chinook jack count of 5193 is about 32.2% of the 2009 count, while being 1.24 times greater than the 10 year average.

The Bonneville Dam 2010 steelhead count of 216932 is about 1.40 times greater than the 2009 count of 154506. The 2010 steelhead count is about 1.51 times greater than of the 10 year average of 143783. In the Snake River, this year's Lower Granite steelhead count of 21255 is about 1.30 times greater than the 2009 count and about 1.63 times greater than the 10 year average count of 13042. The 2010 LGR wild steelhead

count as of August 5th was 8515. The 2010 Rock Island Dam adult steelhead count of 5235 is about 2.48 times greater than the 2009 count and 2.23 times greater than the 10 year average. At Willamette Falls Dam, the 2010 count for steelhead was 27949, as of July 28th. This year's steelhead count is about 1.66 times greater than the 2009 count of 16795 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 6 and 31 last week. The 2010 adult sockeye count at Bonneville Dam of 386450 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 278716 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 866 and about 7.43 times greater than the 10 year average count of 175. The Lower Granite Dam 2010 adult sockeye count of 2075 is about 1.73 times greater than the 2009 count of 1196 and 8.57 times greater than the 10 year average of 242.

The coho salmon run at Bonneville Dam is just beginning with 14 adults and 1 jack counted to date. As of August 5th at Bonneville Dam, the adult Shad count was 1041908 which was about 75.5% of the 2009 count of 1373386 and about 33.7% of the 10 year average count of 3090376.

**Hatchery Releases Last Two Weeks**

**There were no hatchery releases from 07/23/10-8/05/10.**

**Hatchery Releases Next Two Weeks**

**There are no hatchery releases planned from 08/06/10-8/20/10.**

**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
07/23/2010	95.0	0.2	95.7	0.0	105.0	7.8	104.6	9.5	110.8	25.1	121.9	18.9	121.0	26.5
07/24/2010	82.3	0.3	84.0	0.0	95.0	7.2	97.2	7.1	103.0	18.2	116.4	18.5	114.4	25.6
07/25/2010	89.5	0.2	85.1	0.0	87.0	6.4	84.2	7.5	89.1	18.6	88.4	18.1	83.6	24.9
07/26/2010	106.2	0.1	105.1	0.0	106.7	7.8	104.1	9.8	107.4	21.4	109.2	18.4	106.1	25.5
07/27/2010	101.9	0.2	113.9	0.0	114.9	8.4	110.3	8.3	112.2	22.7	106.6	19.0	100.6	26.5
07/28/2010	93.2	0.2	88.1	0.0	98.1	5.9	102.6	8.3	110.5	21.5	130.3	19.0	130.0	26.4
07/29/2010	93.7	0.2	92.7	0.0	97.6	8.1	99.3	7.3	101.6	20.1	110.9	18.2	110.9	25.5
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

**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
07/23/2010	12.0	2.3	8.5	11.5	38.0	18.7	37.3	11.2	36.5	17.0	39.6	29.9		
07/24/2010	13.6	4.0	9.1	11.7	38.6	18.6	38.2	11.5	36.9	17.4	38.2	28.3		
07/25/2010	13.4	3.8	8.5	11.7	39.5	18.8	38.9	11.6	37.0	17.1	38.4	28.4		
07/26/2010	13.5	3.8	9.2	13.4	38.5	18.7	39.2	11.8	38.2	26.2	39.2	29.3		
07/27/2010	13.3	3.6	9.4	14.9	39.9	18.6	39.3	11.8	37.3	21.5	38.3	28.4		
07/28/2010	11.9	2.2	9.2	13.1	40.2	18.7	40.8	12.2	39.4	23.0	38.4	28.3		
07/29/2010	12.0	2.2	8.8	13.1	36.5	18.6	36.3	10.8	33.9	22.5	36.2	26.4		
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	13.2	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	16.5	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	17.8	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	---	38.6	18.7	34.0	10.2	37.2	15.9	38.4	28.4		

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
07/23/2010	175.5	87.6	172.1	51.6	164.4	65.6	174.8	88.3	5.5	68.6
07/24/2010	160.9	79.7	162.6	49.0	156.3	62.9	168.6	88.2	2.8	65.1
07/25/2010	145.7	72.9	133.9	40.2	129.8	51.8	149.8	88.0	0.0	49.4
07/26/2010	143.2	70.9	134.4	40.3	127.5	51.1	136.3	86.1	0.0	37.9
07/27/2010	149.7	74.9	125.9	37.9	118.5	47.3	130.2	80.9	0.0	37.0
07/28/2010	163.4	81.1	164.3	49.1	155.9	62.1	165.3	79.9	0.0	73.0
07/29/2010	159.4	79.8	152.5	45.9	145.6	58.1	164.9	82.6	2.6	67.3
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

## 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>											
	07/28/10	Chinook + Steelhead	93	0	0	0.00%	0.00%	0	0	0	0
	08/04/10	Chinook + Steelhead	10	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	07/29/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	07/27/10	Chinook + Steelhead	42	0	0	0.00%	0.00%	0	0	0	0
	07/31/10	Chinook + Steelhead	22	0	0	0.00%	0.00%	0	0	0	0
	08/03/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	07/27/10	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	08/04/10	Chinook + Steelhead	100	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	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		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/23	105.9	106.0	106.2	24	108.4	109.1	109.5	22	113.1	113.2	113.4	24	112.3	113.0	114.4	22	111.3	111.8	112.2	24
7/24	106.0	106.6	107.0	24	108.6	109.6	110.2	22	112.7	113.2	113.8	24	112.1	113.1	113.9	22	111.9	112.5	112.7	24
7/25	106.6	107.1	107.5	24	110.0	111.0	111.8	23	113.3	113.6	114.0	24	112.9	114.1	115.0	23	112.3	112.7	112.9	24
7/26	107.1	107.5	108.0	24	110.6	111.4	111.8	22	113.5	113.8	114.0	24	113.6	114.2	115.0	22	113.0	113.5	113.6	24
7/27	106.4	106.7	107.0	22	110.3	110.8	111.3	19	112.8	113.1	113.5	24	112.8	113.1	113.5	19	112.5	112.7	113.1	24
7/28	106.1	106.3	106.5	24	109.6	110.1	110.8	22	111.4	111.9	112.4	24	112.6	113.4	114.6	22	111.6	112.1	112.7	24
7/29	106.0	106.2	106.4	24	109.5	109.9	110.4	22	109.9	111.2	111.8	24	111.1	111.9	112.4	22	110.8	111.4	111.8	24
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

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

Date	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		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/23	110.7	111.9	113.5	24	110.7	111.2	111.7	24	112.3	113.0	113.4	24	111.2	111.4	111.7	24	112.0	113.0	113.9	24
7/24	111.9	112.8	114.4	24	111.4	112.6	113.1	24	112.3	113.5	114.1	24	111.8	112.5	112.9	24	111.8	112.7	113.4	24
7/25	112.6	113.5	114.5	24	112.5	113.5	114.2	23	113.2	114.4	115.1	23	112.9	113.6	114.4	24	112.1	113.2	114.2	24
7/26	113.1	113.5	113.8	24	113.1	114.1	114.6	24	114.4	116.0	117.0	24	112.5	113.1	113.4	24	112.8	114.2	115.0	24
7/27	112.7	113.5	114.0	24	112.9	113.5	114.5	24	114.7	115.5	116.0	24	112.5	112.6	112.8	24	112.3	113.2	113.8	24
7/28	112.0	113.0	114.3	24	112.2	113.0	113.7	24	113.8	114.2	114.6	24	112.3	112.6	113.3	24	112.0	112.7	113.2	24
7/29	111.1	112.1	112.9	24	111.7	112.5	112.8	24	113.7	114.7	115.4	24	112.5	113.0	113.4	24	111.9	112.9	113.3	24
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

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

Date	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		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/23	110.1	111.0	111.8	24	114.3	114.9	115.4	24	109.3	111.0	112.0	24	110.9	111.4	112.5	24	108.5	109.6	110.6	24
7/24	110.6	111.3	112.0	24	113.7	114.2	114.7	24	111.3	112.1	112.6	24	112.6	112.9	113.4	24	111.1	111.9	112.4	24
7/25	111.4	112.0	112.4	24	114.7	115.0	115.6	24	111.2	112.1	113.0	24	113.6	114.3	115.0	24	112.1	112.9	114.3	24
7/26	111.6	112.2	112.6	24	114.9	115.3	115.9	24	112.7	114.2	115.8	24	113.6	113.8	114.1	24	112.0	113.2	114.4	24
7/27	111.1	111.4	112.2	24	114.6	115.1	115.8	24	111.5	112.1	112.7	24	113.7	114.2	114.7	24	112.2	112.7	113.9	24
7/28	111.1	111.6	112.1	24	114.3	114.8	116.1	24	111.9	112.5	113.5	24	113.2	113.5	115.1	24	112.6	112.9	113.4	24
7/29	111.0	111.7	112.5	24	114.4	115.2	116.5	24	111.7	113.0	113.9	24	113.2	113.6	114.6	24	113.1	114.1	114.7	24
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

## 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	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clwrtr-Peck</u>			<u>Anatone</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/23	110.2	110.7	110.9	24	107.5	108.4	108.8	24	103.3	103.7	104.2	24	103.8	104.9	105.9	24	102.4	103.7	104.8	24
7/24	111.8	112.6	112.9	24	108.5	109.6	110.1	24	108.7	109.1	109.8	24	107.3	108.4	109.2	24	102.8	104.4	105.7	24
7/25	112.5	112.8	113.0	24	109.6	110.7	111.0	24	108.5	109.2	109.5	24	107.5	108.9	109.8	24	103.1	104.7	105.9	24
7/26	112.5	113.2	113.6	24	110.4	111.1	111.6	24	108.9	109.4	109.6	24	107.8	109.1	109.7	24	103.0	104.3	105.7	24
7/27	112.1	112.9	113.4	24	108.4	109.1	109.8	24	108.2	108.4	108.9	24	106.8	107.2	107.9	24	101.6	102.4	103.2	24
7/28	113.7	114.0	114.4	24	107.3	107.7	108.3	24	103.7	104.0	104.7	24	104.1	105.1	106.1	24	101.8	102.7	103.9	24
7/29	113.2	113.9	114.1	24	108.6	110.2	110.9	24	140.2	177.1	979.8	24	104.1	105.6	106.4	24	102.9	104.5	105.9	24
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

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

Date	<u>Clwrtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/23	104.0	106.3	107.9	24	102.2	102.4	102.5	24	116.0	116.3	116.8	24	109.5	109.9	110.8	24	112.4	112.6	113.0	24
7/24	105.1	108.1	109.8	24	102.9	103.1	103.3	24	115.9	116.2	116.6	24	109.6	110.1	110.7	24	112.4	112.8	113.7	24
7/25	105.8	108.2	109.7	24	103.2	103.7	104.3	24	116.0	116.2	117.2	24	108.8	109.3	109.5	24	112.6	113.2	113.6	24
7/26	105.9	108.1	109.6	24	103.0	103.5	103.7	24	115.8	116.2	116.9	24	109.5	109.7	110.1	24	112.4	113.0	113.3	24
7/27	104.1	105.2	106.3	24	102.2	102.6	103.0	24	115.3	115.6	116.0	24	109.6	110.2	111.2	24	111.5	111.8	112.4	24
7/28	104.1	105.6	107.1	24	103.4	103.9	104.6	24	115.0	115.3	115.5	24	110.1	110.7	111.4	24	111.6	112.2	112.9	24
7/29	104.0	106.6	108.1	24	104.0	104.4	104.8	24	115.6	115.9	116.2	24	111.7	112.1	112.4	24	111.3	111.6	111.9	24
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

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/23	110.1	110.4	110.8	24	115.8	116.1	116.3	24	111.3	111.5	112.1	24	114.3	114.8	115.4	24	---	---	---	0
7/24	109.6	109.8	109.9	24	116.1	116.4	116.7	24	111.6	112.1	112.8	24	114.3	114.8	115.3	24	---	---	---	0
7/25	109.6	109.7	109.9	24	115.8	116.2	116.4	24	111.9	112.1	112.4	24	114.3	115.0	115.5	24	---	---	---	0
7/26	110.6	111.5	112.4	24	117.2	118.2	118.9	24	112.7	113.2	113.8	24	114.1	114.6	115.2	24	---	---	---	0
7/27	111.5	111.9	112.2	24	117.7	119.0	120.3	24	113.6	114.0	114.8	24	113.6	113.8	114.2	24	---	---	---	0
7/28	111.4	111.8	112.3	24	117.8	119.2	120.0	24	113.7	114.0	114.4	24	113.2	113.5	113.9	24	---	---	---	0
7/29	110.4	110.6	110.8	24	117.5	118.9	119.2	24	113.1	113.3	113.5	24	113.7	114.3	114.7	24	---	---	---	0
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

## 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	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		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	AVG	High	
7/23	108.1	108.4	108.9	24	116.6	117.0	117.1	24	104.2	104.6	105.2	24	115.4	115.9	117.2	24	105.0	105.9	106.7	24
7/24	108.3	108.6	109.2	24	116.0	116.8	117.6	24	105.6	106.0	107.1	24	115.4	116.1	120.0	24	108.3	108.8	109.0	24
7/25	108.7	109.4	109.9	24	115.8	116.4	116.7	24	107.9	108.2	108.6	24	115.0	115.3	115.6	24	109.1	109.4	109.7	24
7/26	109.7	110.4	110.9	24	116.3	117.5	118.0	24	107.9	108.4	108.8	24	115.0	115.5	115.9	24	108.0	108.4	108.8	24
7/27	110.4	110.8	111.7	24	116.5	117.4	117.6	24	107.6	108.0	108.3	24	114.6	115.4	115.7	24	107.2	107.4	107.7	24
7/28	109.5	110.0	111.3	24	116.1	117.1	117.5	24	107.3	107.5	107.7	24	115.4	115.8	116.2	24	107.6	108.1	108.4	24
7/29	107.9	108.2	108.4	24	116.4	117.0	117.2	24	107.4	107.6	107.9	24	115.1	115.7	116.1	24	108.2	108.6	109.0	24
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

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

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island			#
	24 h	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	AVG	High	
7/23	113.0	113.6	114.1	24	106.2	107.2	107.9	24	114.8	115.7	117.0	24	112.8	115.1	117.1	24	115.6	116.4	118.1	24
7/24	114.9	115.8	116.8	24	109.0	110.6	111.6	24	116.0	116.8	118.0	24	113.4	116.1	118.1	24	116.2	116.7	118.0	24
7/25	114.9	115.2	115.7	24	111.9	112.4	112.7	24	117.0	117.4	118.2	24	114.3	116.6	118.2	24	117.2	117.8	118.2	24
7/26	114.2	114.8	115.4	24	110.5	110.9	111.3	24	117.0	117.4	117.9	24	115.6	117.4	118.5	24	119.0	119.5	119.8	24
7/27	113.5	114.1	114.6	24	108.6	109.0	109.8	24	116.0	116.6	117.0	24	114.6	115.6	116.2	24	120.1	120.4	120.7	24
7/28	114.2	114.7	115.2	24	107.2	107.5	107.9	24	114.0	114.7	115.7	24	113.0	113.7	114.3	24	117.0	119.7	120.9	24
7/29	114.6	115.2	115.8	24	107.0	107.5	107.8	24	113.9	114.4	114.8	24	110.6	112.3	113.5	24	115.2	116.2	118.9	24
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

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)
07/23/2010	---	---	---	---	0	1	96	0	0	0	0
07/24/2010	---	---	---	---	0	0	115	0	0	0	0
07/25/2010	---	---	---	---	0	6	152	0	41	0	0
07/26/2010 *	---	---	---	---	10	3	217	0	0	0	0
07/27/2010	---	---	---	---	10	0	33	0	0	0	0
07/28/2010	---	---	---	---	0	0	26	0	0	0	0
07/29/2010	---	---	---	---	0	3	81	0	41	0	0
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>19</b>	<b>963</b>	<b>0</b>	<b>103</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>9</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>69</b>	<b>0</b>	<b>7</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>2,452,564</b>	<b>1,260,481</b>	<b>452,057</b>	<b>11,799</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)
07/23/2010	---	---	---	---	2,208	3,966	2,228	256	23,321	19,454	18,161
07/24/2010	---	---	---	---	2,482	1,380	4,183	142	32,266	24,428	22,190
07/25/2010	---	---	---	---	3,014	1,720	5,710	157	31,495	21,465	24,341
07/26/2010 *	---	---	---	---	2,313	2,027	8,516	170	20,204	20,400	13,548
07/27/2010	---	---	---	---	1,847	1,479	4,911	220	19,302	15,344	6,662
07/28/2010	---	---	---	---	1,563	2,267	3,927	271	12,409	16,040	9,205
07/29/2010	---	---	---	---	3,573	5,415	8,171	330	8,598	17,134	12,853
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25,776</b>	<b>30,773</b>	<b>46,460</b>	<b>4,549</b>	<b>263,560</b>	<b>137,242</b>	<b>148,782</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>9</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,841</b>	<b>2,198</b>	<b>3,319</b>	<b>325</b>	<b>18,826</b>	<b>15,249</b>	<b>10,627</b>
<b>YTD</b>	<b>0</b>	<b>42</b>	<b>28</b>	<b>1,275</b>	<b>1,008,032</b>	<b>1,284,251</b>	<b>766,265</b>	<b>19,324</b>	<b>3,554,595</b>	<b>2,198,708</b>	<b>5,047,174</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)
07/23/2010	---	---	---	---	0	0	0	8	41	0	0
07/24/2010	---	---	---	---	0	7	0	3	0	0	0
07/25/2010	---	---	---	---	0	6	0	7	0	0	0
07/26/2010 *	---	---	---	---	0	3	0	5	0	0	0
07/27/2010	---	---	---	---	0	6	0	3	41	0	0
07/28/2010	---	---	---	---	0	3	0	0	0	0	0
07/29/2010	---	---	---	---	0	3	0	0	0	0	21
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>37</b>	<b>0</b>	<b>50</b>	<b>124</b>	<b>0</b>	<b>21</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>9</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>2</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>41,419</b>	<b>85,676</b>	<b>111,146</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)
07/23/2010	---	---	---	---	0	0	0	2	0	0	0
07/24/2010	---	---	---	---	0	0	0	0	0	0	0
07/25/2010	---	---	---	---	0	1	0	0	0	0	0
07/26/2010 *	---	---	---	---	0	0	0	0	41	0	0
07/27/2010	---	---	---	---	10	12	0	0	0	0	0
07/28/2010	---	---	---	---	0	14	0	0	0	0	0
07/29/2010	---	---	---	---	19	9	0	0	0	0	0
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>45</b>	<b>13</b>	<b>2</b>	<b>62</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>9</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</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>2,045,766</b>	<b>1,594,100</b>	<b>427,829</b>	<b>17,299</b>	<b>448,203</b>	<b>594,800</b>	<b>942,451</b>

## Two-Week Summary of Passage Indices

Date	<b>COMBINED SOCKEYE</b>										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/23/2010	---	---	---	---	0	0	19	3	41	0	0
07/24/2010	---	---	---	---	0	0	0	1	41	0	0
07/25/2010	---	---	---	---	0	0	0	1	82	0	10
07/26/2010 *	---	---	---	---	0	0	0	0	0	0	0
07/27/2010	---	---	---	---	0	0	0	2	41	0	0
07/28/2010	---	---	---	---	10	0	0	0	82	0	0
07/29/2010	---	---	---	---	0	0	0	0	0	57	43
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>3</b>	<b>19</b>	<b>9</b>	<b>329</b>	<b>57</b>	<b>107</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>9</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>24</b>	<b>6</b>	<b>8</b>
<b>YTD</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>8,757</b>	<b>12,815</b>	<b>2,202</b>	<b>36,497</b>	<b>1,468,952</b>	<b>656,015</b>	<b>803,501</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:

8/6/10 10:13 AM

		07/23/10	TO	08/06/10				
		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
<b>LGR</b>	Sum of NumberCollected	13,303		10	7	15	17	13,352
	Sum of NumberBarged	15,315		20	6	12	25	15,378
	Sum of NumberBypassed	0		0	0	0	0	0
	Sum of Numbertrucked	0		0	0	0	0	0
	Sum of SampleMorts	51		0	1	0	0	52
	Sum of FacilityMorts	35		0	0	3	0	38
	Sum of ResearchMorts	0		0	0	0	0	0
	Sum of TotalProjectMorts	86		0	1	3	0	90
<b>LGS</b>	Sum of NumberCollected	21,380		13	25	31	2	21,451
	Sum of NumberBarged	23,187		12	25	38	1	23,263
	Sum of NumberBypassed	1		0	0	0	0	1
	Sum of Numbertrucked	0		0	0	0	0	0
	Sum of SampleMorts	51		0	0	0	1	52
	Sum of FacilityMorts	99		1	0	3	0	103
	Sum of ResearchMorts	0		0	0	0	0	0
	Sum of TotalProjectMorts	150		1	0	3	1	155
<b>LMN</b>	Sum of NumberCollected	19,600		431		8	10	20,049
	Sum of NumberBarged	22,571		479		4	10	23,064
	Sum of NumberBypassed	102		1		0	0	103
	Sum of Numbertrucked	0		0		0	0	0
	Sum of SampleMorts	8		0		0	0	8
	Sum of FacilityMorts	106		1		0	0	107
	Sum of ResearchMorts	0		0		0	0	0
	Sum of TotalProjectMorts	114		1		0	0	115
<b>MCN</b>	Sum of NumberCollected	127,670		50	60	30	160	127,970
	Sum of NumberBarged	125,989		48	60	30	160	126,287
	Sum of NumberBypassed	0		0	0	0	0	0
	Sum of Numbertrucked	0		0	0	0	0	0
	Sum of SampleMorts	124		0	0	0	0	124
	Sum of FacilityMorts	1,557		2	0	0	0	1,559
	Sum of ResearchMorts	0		0	0	0	0	0
	Sum of TotalProjectMorts	1,681		2	0	0	0	1,683
Total Sum of NumberCollected		181,953		504	92	84	189	182,822
Total Sum of NumberBarged		187,062		559	91	84	196	187,992
Total Sum of NumberBypassed		103		1	0	0	0	104
Total Sum of Numbertrucked		0		0	0	0	0	0
Total Sum of SampleMorts		234		0	1	0	1	236
Total Sum of FacilityMorts		1,797		4	0	6	0	1,807
Total Sum of ResearchMorts		0		0	0	0	0	0
Total Sum of TotalProjectMorts		2,031		4	1	6	1	2,043

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

8/6/10 10:13 AM

TO: 08/06/10

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	604,316	1,622,342	28,342	5,787	1,358,138	3,618,925
	Sum of NumberBarged	601,828	1,428,782	28,331	5,770	1,309,473	3,374,184
	Sum of NumberBypassed	700	191,860	0	10	48,344	240,914
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	181	54	1	0	19	255
	Sum of FacilityMorts	1,012	1,231	10	5	285	2,543
	Sum of ResearchMorts	0	415	0	0	17	432
	Sum of TotalProjectMorts	1,193	1,700	11	5	321	3,230
<b>LGS</b>	Sum of NumberCollected	843,935	873,171	36,897	8,870	1,085,555	2,848,428
	Sum of NumberBarged	837,451	791,493	36,896	8,868	1,025,846	2,700,554
	Sum of NumberBypassed	68	81,373	0	0	59,473	140,914
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	145	29	1	1	10	186
	Sum of FacilityMorts	5,532	276	0	1	226	6,035
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	5,677	305	1	2	236	6,221
<b>LMN</b>	Sum of NumberCollected	507,314	305,734	8,789	1,524	239,898	1,063,259
	Sum of NumberBarged	506,053	304,249	8,789	1,421	234,671	1,055,183
	Sum of NumberBypassed	508	1,473	0	0	5,000	6,981
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	45	9	0	0	10	64
	Sum of FacilityMorts	606	201	0	3	314	1,124
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	651	210	0	3	324	1,188
<b>MCN</b>	Sum of NumberCollected	1,760,468	1,224,094	47,395	848,810	260,020	4,140,787
	Sum of NumberBarged	263,742	173	60	160	79	264,214
	Sum of NumberBypassed	1,490,588	1,222,563	47,275	847,904	259,728	3,868,058
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	333	121	5	96	16	571
	Sum of FacilityMorts	5,755	1,237	55	650	197	7,894
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	6,088	1,358	60	746	213	8,465
Total Sum of NumberCollected		3,716,033	4,025,341	121,423	864,991	2,943,611	11,671,399
Total Sum of NumberBarged		2,209,074	2,524,697	74,076	16,219	2,570,069	7,394,135
Total Sum of NumberBypassed		1,491,864	1,497,269	47,275	847,914	372,545	4,256,867
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		704	213	7	97	55	1,076
Total Sum of FacilityMorts		12,905	2,945	65	659	1,022	17,596
Total Sum of ResearchMorts		0	415	0	0	17	432
Total Sum of TotalProjectMorts		13,609	3,573	72	756	1,094	19,104

Cumulative Adult Passage at Mainstem Dams Through: 08/05

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	08/05	244384	12612	114525	66631	167834	17301	97604	15603	81936	37416	82525	13362
TDA	08/05	189839	11546	93908	53646	121486	13792	81292	12528	79916	27878	72634	10423
JDA	08/05	179446	11794	76806	49733	101283	12037	70953	12475	65989	33147	66341	11201
MCN	08/05	153246	9178	70413	43328	93119	11340	65991	7997	56976	21061	62079	8981
IHR	08/05	101188	6047	55435	28223	64058	7222	29236	3467	23726	9370	15122	3360
LMN	08/04	97334	5898	66931	20009	63381	6004	34725	4313	23204	11625	15542	2899
LGS	08/04	92985	5461	52642	24331	58937	6617	31563	3841	20030	11079	12750	3438
LGR	08/05	94203	6409	49667	31064	59309	8137	28258	5193	14234	16137	12103	4176
PRD	08/04	30539	932	13469	2910	19097	834	46244	953	48551	2038	53148	2068
RIS	08/03	29684	1513	12634	6003	15841	1581	43804	3194	42726	6962	48241	5153
RRH	08/03	8660	523	6090	1086	6208	510	30087	1098	32552	4647	34944	3438
WEL	07/31	7555	661	6307	1867	4866	487	21195	767	20668	2439	21966	1200
WFA	07/28	63501	1504	25669	2574	-	-	-	-	-	-	-	-

DAM	EndDate	Fall Chinook					
		2010		2009		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack
BON	08/05	1899	289	545	233	2162	399
TDA	08/05	547	91	157	114	656	127
JDA	08/05	0	0	0	0	0	0
MCN	08/05	0	0	0	0	0	0
IHR	08/05	0	0	0	0	0	0
LMN	08/04	0	0	0	0	0	0
LGS	08/04	0	0	0	0	0	0
LGR	08/05	0	0	0	0	0	0
PRD	08/04	0	0	0	0	0	0
RIS	08/03	0	0	0	0	0	0
RRH	08/03	0	0	0	0	0	0
WEL	07/31	0	0	0	0	0	0
WFA	07/28	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	14	1	14	10	5	1	386450	177759	94543	216932	154506	143783	99056
TDA	2	0	4	0	0	0	325062	155474	80533	128627	59703	61469	62682
JDA	8	3	2	7	3	0	324049	157279	86607	91635	55549	44200	43479
MCN	0	0	0	0	0	0	278716	121641	69705	70060	27560	31022	31014
IHR	0	0	0	0	0	0	1300	866	175	43402	19671	15605	14907
LMN	0	0	0	0	0	0	1643	1161	220	32239	20708	14130	13042
LGS	0	0	0	0	0	0	1589	1064	197	14559	12923	8586	5923
LGR	0	0	0	0	0	0	2075	1196	242	21255	16323	13042	8515
PRD	0	2	0	0	2	0	356581	153112	88292	7696	3613	3515	-
RIS	0	0	0	0	1	0	337714	162610	85074	5235	2108	2342	2787
RRH	0	0	0	0	1	0	294321	132711	63814	3339	1789	1667	1609
WEL	0	0	0	0	0	0	288501	133316	63558	1190	609	623	565
WFA	0	0	0	0	-	-	-	-	-	27949	16795	-	-

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: 08/06/2010

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