



## Fish Passage Center

# Weekly Report #10 - 25

September 3, 2010

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 12% and 99% of average at individual sub-basins over August. Precipitation above The Dalles has been 76% of average over August. Over the 2010 water year, precipitation has ranged between 84% and 100% 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 1-30		Water Year 2010 October 1, 2009 to August 30, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	1.34	82	20.86
Snake River Above Ice Harbor	0.68	82	16.20	96
Columbia Above The Dalles	0.87	76	20.41	92
Kootenai	1.32	81	20.62	84
Clark Fork	1.25	99	15.29	92
Flathead	1.39	89	21.95	100
Pend Oreille/ Spokane	0.47	38	27.64	93
Central Washington	0.05	12	8.67	100
Snake River Plain	0.54	96	9.81	91
Salmon/Boise/ Payette	0.46	67	18.54	97
Clearwater	0.84	72	27.71	94
SW Washington Cascades/Cowlitz	0.19	13	61.84	90
Willamette Valley	0.38	36	53.63	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 was 50 Kcfs at Lower Granite, flows at Lower Granite Dam averaged 47.0 Kcfs from June 21-August 31. Flows at Lower Granite have averaged 26.0 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 31<sup>st</sup> averaged 154.8 Kcfs and 112.5 Kcfs last week.

The Grand Coulee Reservoir is at 1277.1 feet (9-1-10) and drafted 2.1 feet over the last week. The end of August draft elevation at Grand Coulee was 1277.3 feet; Grand Coulee was at 1277.1 feet on August 31<sup>st</sup>. Outflows at Grand Coulee have ranged between 46.7 and 96.2 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2442.0 feet (9-1-10) and drafted 0.4 feet last week. Outflows at Libby Dam have been 7.0-7.8 Kcfs.

Hungry Horse is currently at an elevation of 3547.8 feet (9-1-10) and has drafted 1.5 ft last week. Outflows at Hungry Horse are currently 3.9 Kcfs.

Dworshak is currently at an elevation of 1533.2 feet (9-1-10) and has drafted approximately 6.2 feet last week. The end of August target elevation at Dworshak was 1535 feet; Dworshak was at 1534.1 feet on August 31<sup>st</sup>. Outflows from Dworshak are currently 8 Kcfs.

The Brownlee Reservoir was at an elevation of 2054.2 feet on September 1<sup>st</sup>, 2010 refilling 0.2 feet last week. Over the last week, outflows at Brownlee have ranged between 8.1-9.9 Kcfs.

**Spill:**

On August 31<sup>st</sup> the Snake projects ended 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)

Decreasing late season flows have resulted in spill levels that were generally below the planned summer spill amounts. For the past week, spill levels at Lower Granite Dam have been below the 18 Kcfs due to low flows and powerhouse minimums. On Friday, August 20<sup>th</sup>, TMT members decided to modify spill operations at Little Goose Dam for the remainder of August. This decision was made in order to avoid the daily fluctuations in spill levels that were occurring under the 30% spill operation. Under this modified operation, the 30% requirement was changed to a set spill volume. This spill volume was set at approximately 11.2 Kcfs, which was first initiated at 13:00 on Friday, August 20<sup>th</sup>. On Monday, August 23<sup>rd</sup>, this set spill volume was reduced to approximately 9.3 Kcfs and was subsequently reduced to 7.5 Kcfs on the 28<sup>th</sup>. Under these modified operations, spill at Little Goose Dam has been near, or in excess of, 30%. Spill levels at Lower Monumental Dam have been consistently below the 17 Kcfs due to low flows and powerhouse minimums. 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 in the lower Columbia River also ended on August 31<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 not met at McNary Dam this week due to low flows and powerhouse minimums. 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 until the last two days of the summer spill season, where due to low flows the levels dropped below 40%. Due to low flows and powerhouse minimums, the 75Kcfs/gas cap spill levels at Bonneville Dam could not be met this week. Currently, Bonneville Dam is spilling everything in excess of powerhouse minimum, which has equated to approximately 55 to 70 Kcfs spill.

Total dissolved gas levels at all monitors were 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. GBT sampling has ended for 2010.

#### **Smolt Monitoring:**

Subyearling Chinook indices continued to decrease over the past week at all Snake River Sites and at Rock Island Dam. McNary Dam had another one day spike in passage of subyearling Chinook on August 31, when the index reached 22,000 so that over the past two weeks the index has remained relatively stable. Temperatures have moderated in the river, with recent rains allowing full sampling to continue at John Day and Bonneville dams this week.

At Lower Granite Dam passage indices for subyearling Chinook decreased this past week with the index averaging 230 per day while last week the index averaged 570 fish per day. Little Goose Dam also saw a decrease in the average subyearling passage index this past week when the index averaged 110 per day compared to 360 per day last week. Similarly, at Lower Monumental Dam passage indices were down this past week compared to the previous week.

At Rock Island Dam passage indices for subyearlings were lower for the third week in a row. The daily index averaged 32 this week compared to about 54 per day last week. Rock Island Dam finished sampling on August 31.

At McNary Dam subyearling Chinook indices averaged 10,400 per day this week compared to 10,500 per day average last week. This week's average was bolstered by a spike in the index to 22,000 on August 31. PIT-tag detections indicate about an equal mixture of fish marked in the Snake River as well as at Rock Island Dam were passing the project over the past week.

John Day Dam and Bonneville Dam are back on full samples with the reduced river temperatures in the past week. Because the sites had both been on limited sampling due to temperatures in excess of 70 degrees F measured in the forebay of the dams the previous weeks trends in indices over that time period are not considered representative.

#### **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 9126 to 15,268. The 2010 adult fall Chinook count of 121,479 is about 88.2% of the 2009 count, while being 1.10 times greater than the 10 average. The 2010 Bonneville Dam fall Chinook jack count of 13,840 is about 32.1% of the 2009 count. However, the 2010 fall Chinook jack count is about 1.08 times greater than the 10 year average. The 2010 McNary Dam adult fall Chinook count of 18,680 is about 74.9% of the 2009 count, while being 1.18 times greater than the 10 year average. The 2010 fall Chinook jack McNary Dam jack count of 2,426 is about 24.8% of the 2009 count and about 84.3% of the 10 year average. The 2010 Lower Granite fall Chinook adult dam count of 1,589 is about 94.4% of the 2009 count. However, it is about 2.1 times greater than the 10 year average.

Daily steelhead counts at Bonneville Dam for

the past week ranged between 3,023 and 5,206. The Bonneville Dam 2010 steelhead count of 333,996 is about 67.2% of the 2009 count of 496,741. However, the 2010 steelhead count is about 1.14 times greater than of the 10 year average of 293,377. At Willamette Falls Dam, the 2010 count for steelhead was 28,758, as of August 14th. This year's steelhead count is about 1.7 times greater than the 2009 count of 16,887 at Willamette Falls Dam for the same date range.

During this time of year, there are times when there are higher steelhead counts at upstream projects compared to downstream projects. The higher counts of steelhead at upstream sites compared to downstream sites in any particular year is because some steelhead spend the winter between sites, for instance between Ice Harbor and Lower Granite, and then start their migration upstream the following year. The summer steelhead run is delineated according to dates of passage past Bonneville Dam and is made up of two components. A-run steelhead are considered those that pass Bonneville Dam from the first of June through August 25th and B-run steelhead pass Bonneville from August 26th through October. The 2010 B-run adult steelhead count at Bonneville of 29,908 is about 56.74% of the 2009 count of 52,755 and about 83.8% of the 10 year average count of 35,681.

In the Snake River, this year's Lower Granite steelhead count of 39,296 is about 1.52 times greater than the 2009 count and about 1.92 times greater than the 10 year average count of 20,450. The 2010 LGR wild steelhead count as of September 2nd was 15,312. The 2010 Rock Island Dam adult steelhead count of 13,414 is about 1.05 times greater than the 2009 count and 1.8 times greater than the 10 year average. The 2010 adult sockeye count at Bonneville Dam of 386,519 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 278,802 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 Lower Granite Dam 2010 adult sockeye count of 2,174 is about 1.79 times greater than the 2009 count of 1,215 and 9 times greater than the 10 year average of 242. The 2010 adult coho count at Bonneville Dam is 10,064 adults and 763 jacks. The Bonneville 2010 adult coho count is about 24.9% of the 2009 count and about 55.3% of the 10 year average. The Bonneville 2010

coho jack count is about 28.3% of the 2009 count of 2,698 and about 66.7% of the 10 year average count of 1,144.

**Hatchery Releases Last Two Weeks**

**There were no hatchery releases from 08/20/10-9/02/10.**

**Hatchery Releases Next Two Weeks**

**There are no hatchery releases planned from 09/03/10-9/17/10.**

**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
08/20/2010	85.2	0.2	86.4	0.0	90.0	6.0	89.5	6.9	92.5	16.5	96.5	18.9	95.4	26.0
08/21/2010	47.4	0.2	46.6	0.0	56.5	4.5	58.9	0.0	61.2	0.0	73.3	18.8	75.0	25.7
08/22/2010	54.1	0.2	59.1	0.0	51.0	4.3	48.4	0.0	49.2	0.0	42.8	18.1	44.6	25.1
08/23/2010	90.3	0.2	92.1	0.0	95.0	6.4	94.7	0.0	96.5	0.0	94.0	12.1	84.3	25.7
08/24/2010	90.3	0.2	86.7	0.0	88.6	6.0	86.2	0.0	87.6	0.0	94.9	1.7	94.6	9.2
08/25/2010	96.2	0.2	98.2	0.0	97.6	7.2	97.8	0.0	99.1	0.0	92.6	1.9	86.2	1.0
08/26/2010	71.5	0.2	71.0	0.0	78.6	6.7	81.1	0.0	84.3	0.0	104.1	1.9	104.3	0.9
08/27/2010	70.9	0.2	70.0	0.0	70.3	0.0	75.4	0.0	77.5	0.0	88.1	1.4	85.7	1.0
08/28/2010	65.9	0.2	65.5	0.0	61.9	0.0	64.3	0.0	66.1	0.0	67.5	1.4	64.0	0.7
08/29/2010	46.7	0.2	53.4	0.0	50.1	0.0	52.1	0.0	55.3	0.0	47.8	0.9	43.5	1.0
08/30/2010	84.5	0.2	80.9	0.0	76.7	0.0	74.8	0.0	75.0	0.0	78.9	1.6	75.6	1.0
08/31/2010	83.7	0.2	81.0	0.0	85.2	0.4	83.4	0.8	83.2	0.0	77.4	1.6	72.1	1.0
09/01/2010	50.9	0.1	58.4	0.0	60.6	0.0	63.4	0.0	65.3	0.0	78.8	2.7	74.0	0.8
09/02/2010	53.1	0.2	57.1	0.0	59.8	0.0	56.6	0.0	58.1	0.0	62.9	1.8	62.5	1.1

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

Date	Dworshak		Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/20/2010	10.1	0.0	8.9	11.8	30.4	17.7	29.2	9.3	26.8	14.6	26.8	16.9
08/21/2010	10.2	0.0	8.5	11.9	31.0	18.2	33.4	11.2	32.3	17.4	33.5	23.7
08/22/2010	10.2	0.0	8.1	10.7	26.7	13.6	25.9	11.1	24.6	12.3	25.8	15.8
08/23/2010	10.3	0.0	8.4	8.9	27.0	14.2	28.5	10.2	26.7	14.6	27.5	17.9
08/24/2010	10.3	0.0	8.4	8.9	28.0	15.0	27.7	9.3	27.0	14.6	26.4	16.5
08/25/2010	10.3	0.0	8.7	10.2	27.4	14.7	27.3	9.3	25.3	13.0	26.0	16.1
08/26/2010	8.0	0.0	9.1	9.9	26.3	13.4	26.9	9.3	26.1	14.0	26.2	16.1
08/27/2010	8.0	0.0	8.5	9.0	25.1	12.3	25.3	9.3	24.2	12.1	24.9	15.3
08/28/2010	8.0	0.0	8.9	8.9	24.1	11.5	23.7	8.4	22.2	9.9	23.3	13.1
08/29/2010	8.1	0.0	8.9	9.0	24.1	11.5	23.7	7.5	22.2	9.9	21.9	11.9
08/30/2010	8.1	0.0	9.1	9.0	24.2	11.5	24.8	7.5	22.1	10.0	22.0	11.9
08/31/2010	8.1	0.0	9.5	9.0	24.2	11.5	24.6	7.5	23.3	10.9	22.7	13.0
09/01/2010	8.1	0.0	9.6	9.0	25.5	0.0	25.5	0.0	25.5	0.0	23.6	0.0
09/02/2010	8.2	0.0	---	---	27.6	0.0	26.3	0.0	26.6	0.0	27.5	0.0

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
08/20/2010	117.8	59.1	116.0	34.7	108.8	43.5	117.9	74.8	0.0	30.7
08/21/2010	120.6	60.4	105.5	31.7	100.5	40.3	118.3	75.1	0.0	30.8
08/22/2010	113.7	57.0	102.7	30.9	99.2	39.7	117.9	74.7	0.0	30.8
08/23/2010	109.8	54.9	108.8	32.6	105.9	42.4	118.3	74.7	0.0	31.2
08/24/2010	107.2	53.7	109.4	32.7	105.3	41.6	116.3	72.9	0.0	31.0
08/25/2010	131.8	65.9	117.3	35.3	111.6	44.2	113.4	70.1	0.0	30.9
08/26/2010	111.5	55.9	104.0	31.1	98.0	39.0	112.9	69.9	0.0	30.7
08/27/2010	120.8	60.7	109.9	32.9	103.8	41.4	112.6	69.5	0.0	30.7
08/28/2010	106.9	51.3	99.4	29.8	95.1	37.7	111.0	68.1	0.0	30.6
08/29/2010	99.6	43.5	95.0	28.5	94.0	37.3	108.0	64.9	0.0	30.7
08/30/2010	93.0	37.3	95.3	28.6	90.2	34.2	103.9	60.9	0.0	30.6
08/31/2010	100.3	45.5	88.5	26.6	88.9	34.2	96.6	55.3	0.0	30.7
09/01/2010	92.3	0.0	81.7	0.9	83.7	0.0	87.2	2.1	1.2	76.5
09/02/2010	93.4	0.0	96.8	0.9	100.7	0.0	108.5	1.7	18.6	80.8

## Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
<b>Little Goose Dam</b>											
	08/24/10	Chinook + Steelhead	1	0	0	0.00%	0.00%	0	0	0	0
	09/01/10	Chinook + Steelhead	10	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	08/25/10	Chinook + Steelhead	31	0	0	0.00%	0.00%	0	0	0	0
	09/02/10	Chinook + Steelhead	21	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	08/26/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/30/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	08/25/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/28/10	Chinook + Steelhead	26	0	0	0.00%	0.00%	0	0	0	0
	08/31/10	Chinook + Steelhead	42	0	0	0.00%	0.00%	0	0	0	0
	09/03/10	Chinook + Steelhead	2	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>#</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>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>				
8/20	104.5	104.6	104.7	24	106.9	107.2	107.8	22	107.1	107.5	108.3	24	108.6	109.3	109.7	22	107.0	107.3	107.5	24
8/21	104.7	105.4	105.9	24	106.4	106.8	107.4	23	106.3	106.6	106.9	24	108.2	108.9	111.0	23	107.0	107.5	107.9	24
8/22	104.4	104.6	104.9	24	105.1	105.5	106.1	23	105.8	106.1	106.6	24	107.3	108.2	109.5	23	106.5	106.9	108.5	24
8/23	103.5	103.8	104.2	24	103.4	103.9	104.4	22	104.9	105.1	105.6	24	106.7	107.4	108.0	22	105.4	105.7	106.0	24
8/24	103.1	103.3	103.8	24	103.9	105.0	106.1	23	105.0	105.2	105.5	24	107.1	107.9	108.7	23	105.5	106.0	106.2	24
8/25	103.6	104.0	104.4	24	105.0	106.3	107.5	23	104.7	105.1	105.7	24	107.5	108.3	109.0	23	107.4	108.1	108.4	24
8/26	104.3	104.6	105.3	24	105.5	106.1	106.6	23	104.6	105.2	105.7	24	106.5	107.4	108.4	23	106.9	107.4	107.7	24
8/27	104.4	104.7	105.0	24	104.2	104.6	105.0	24	105.5	105.9	106.2	24	104.5	105.1	105.6	24	105.5	105.8	106.1	24
8/28	104.2	104.6	105.2	24	104.0	104.8	105.4	24	105.7	106.0	106.4	24	104.5	105.7	106.6	24	105.0	105.6	106.0	24
8/29	104.1	104.2	104.4	24	103.4	104.0	104.6	23	104.9	105.1	105.3	24	103.7	104.3	104.8	23	104.2	104.7	104.9	24
8/30	103.6	103.9	104.3	24	103.4	104.0	104.7	22	104.4	104.9	105.3	24	104.3	104.9	105.5	22	104.0	104.2	104.5	24
8/31	102.6	102.8	103.1	24	102.8	103.5	105.7	21	102.7	102.8	103.3	24	104.0	104.3	104.9	21	104.0	104.2	104.3	24
9/1	102.2	102.4	102.8	24	103.3	104.0	104.5	24	102.0	102.3	102.5	24	103.1	103.7	104.2	24	104.0	104.3	104.8	24
9/2	101.6	101.8	102.2	24	102.4	103.1	103.7	24	101.3	101.7	102.2	24	102.2	102.8	103.2	24	104.0	104.6	105.6	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>#</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>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>				
8/20	108.0	109.0	110.2	24	108.1	108.9	109.6	24	109.3	110.2	111.0	24	109.7	110.1	110.5	24	110.8	111.7	112.3	24
8/21	108.9	109.9	111.5	24	107.0	107.4	107.9	24	107.9	108.5	108.9	24	108.8	109.0	109.7	24	107.8	108.4	109.9	24
8/22	107.6	108.8	110.0	24	106.1	106.8	107.8	23	106.8	107.5	108.3	23	106.6	107.0	107.7	24	104.8	105.5	106.5	24
8/23	105.9	106.5	107.6	24	104.9	105.6	106.2	24	106.0	106.8	107.3	24	105.1	105.3	105.8	24	104.2	104.4	104.5	24
8/24	106.2	106.8	108.3	24	105.8	107.2	107.7	24	106.9	108.6	109.6	24	104.7	105.4	106.1	24	103.7	104.3	104.9	24
8/25	109.0	109.7	110.9	24	107.1	108.0	108.5	23	108.9	110.4	111.0	23	106.7	107.6	108.0	24	105.4	106.3	106.7	24
8/26	108.6	109.2	110.2	24	107.5	108.2	108.9	24	109.6	110.2	110.6	24	107.7	107.9	108.0	24	106.0	106.6	107.1	24
8/27	107.1	107.8	108.8	24	106.9	107.5	108.6	24	108.5	109.1	110.9	24	107.0	107.3	107.6	24	105.5	106.1	106.6	24
8/28	107.2	107.8	109.0	24	106.5	107.1	107.8	24	108.0	108.6	109.3	24	107.0	107.2	107.8	24	105.4	105.8	106.1	24
8/29	106.5	107.7	110.9	24	106.4	107.1	107.8	24	107.8	108.7	109.5	24	106.8	107.2	107.6	24	104.9	105.3	105.7	24
8/30	105.3	105.9	107.6	24	104.8	105.1	105.6	24	105.5	106.1	106.6	24	106.6	106.7	106.9	24	105.1	105.7	106.1	24
8/31	105.1	105.5	105.8	24	104.1	104.3	104.5	24	104.5	104.9	105.4	24	105.6	105.8	105.8	24	105.0	105.4	106.7	24
9/1	106.0	107.0	108.2	24	103.8	104.2	104.7	24	103.7	104.2	104.6	24	105.0	105.3	105.7	24	103.8	104.2	104.9	24
9/2	104.5	106.0	107.5	24	103.6	104.4	105.1	23	103.6	104.4	104.7	23	103.6	104.2	104.7	24	102.2	102.6	103.0	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>#</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>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>				
8/20	109.5	110.0	110.3	24	114.5	115.6	118.6	24	106.7	108.8	110.0	24	111.6	113.0	114.2	24	107.3	108.9	109.5	24
8/21	108.8	109.3	109.9	24	109.5	110.3	113.9	24	106.9	108.4	109.1	24	112.9	113.9	115.0	24	108.8	109.4	109.8	23
8/22	105.7	106.3	107.1	24	106.1	106.6	107.5	24	103.5	104.7	107.0	24	112.6	113.2	113.9	24	103.5	106.4	106.9	22
8/23	104.4	105.0	105.6	24	104.6	105.2	105.8	24	103.3	104.4	106.2	24	107.8	110.7	113.2	24	104.2	105.2	107.3	24
8/24	104.5	105.0	105.2	24	105.2	105.5	107.2	24	106.5	108.3	110.0	24	106.3	107.2	107.5	24	107.3	107.8	108.4	24
8/25	105.4	106.4	107.3	24	105.7	106.5	107.4	24	107.4	109.8	111.4	24	107.0	107.4	107.8	24	107.1	108.2	108.5	24
8/26	106.6	106.9	107.2	24	106.9	107.3	107.4	24	105.9	107.3	108.5	24	106.1	106.9	107.3	24	106.8	107.4	107.7	24
8/27	106.0	106.5	106.9	24	106.3	106.7	106.9	24	103.7	104.3	105.3	24	104.1	104.4	104.8	24	104.2	104.9	105.2	24
8/28	106.2	106.5	106.9	24	106.5	106.8	107.2	24	102.8	104.0	105.6	24	104.1	104.6	105.0	24	103.5	104.0	104.2	24
8/29	106.0	106.3	106.6	24	106.3	106.7	106.9	24	102.0	103.3	104.0	24	104.0	104.6	105.4	24	102.8	103.1	103.8	24
8/30	105.4	105.8	106.2	24	105.5	106.0	106.3	24	102.6	103.6	104.6	24	103.1	103.4	104.0	24	101.8	102.0	102.3	24
8/31	104.9	105.4	105.9	24	105.5	105.8	106.2	24	101.0	102.7	103.2	24	103.0	103.5	104.0	24	101.3	101.7	101.9	24
9/1	103.7	104.7	105.1	24	104.8	105.1	105.5	24	102.4	102.6	102.7	24	103.7	104.5	109.4	24	101.3	101.7	101.8	24
9/2	102.5	103.5	103.7	24	103.7	104.0	104.3	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			Clrwtr-Peck			Anatone							
	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					
8/20	110.4	111.3	111.7	24	107.0	107.8	108.2	24	98.2	98.5	98.8	24	100.4	101.7	102.7	23	98.6	99.5	100.5	24
8/21	110.6	111.1	111.4	24	106.0	106.6	107.2	24	98.3	98.5	98.9	24	100.4	101.5	102.8	23	98.2	99.0	100.0	24
8/22	108.8	109.2	109.6	23	104.4	104.9	105.8	24	97.4	97.6	97.9	24	99.3	99.9	101.2	23	97.5	98.1	99.0	24
8/23	108.1	108.6	109.0	24	102.6	103.2	103.6	24	96.5	96.7	97.0	24	98.7	99.8	100.8	23	97.5	98.6	99.4	24
8/24	108.7	109.6	110.0	24	104.4	106.0	106.7	24	97.1	97.4	97.7	24	99.3	100.6	101.5	24	98.5	99.6	100.5	24
8/25	107.0	108.0	108.7	24	106.5	107.3	107.8	24	97.2	97.2	97.6	10	99.9	101.2	102.3	23	98.8	99.8	101.2	24
8/26	107.3	107.8	108.1	24	104.7	105.5	106.9	24	---	---	---	0	100.7	102.2	103.8	24	98.2	99.0	100.4	24
8/27	104.8	105.2	105.5	24	102.5	103.5	104.0	24	97.9	98.3	98.5	23	100.1	101.5	102.7	23	97.6	98.8	100.0	24
8/28	104.3	104.7	105.2	24	103.0	103.3	103.7	24	98.6	98.8	99.1	24	99.8	100.4	101.1	23	97.7	98.2	98.7	24
8/29	104.1	104.5	104.8	24	102.2	102.7	103.2	24	98.5	98.7	99.0	24	100.1	101.3	102.4	24	98.1	99.2	100.1	24
8/30	103.1	103.3	103.5	24	101.2	101.6	102.0	24	98.2	98.5	99.0	24	99.9	101.1	102.5	24	98.0	98.7	99.3	24
8/31	102.7	102.9	103.1	24	100.6	101.1	101.3	24	97.8	98.0	98.3	24	99.5	100.6	101.9	23	98.2	99.0	99.7	24
9/1	102.9	103.1	103.5	24	100.8	101.6	102.1	24	97.8	98.0	98.3	24	99.5	100.3	101.9	23	98.0	98.2	99.6	16
9/2	---	---	---	0	101.2	101.9	102.2	24	97.6	98.0	98.2	24	98.0	98.0	98.9	10	---	---	---	0

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

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/20	102.4	104.3	105.6	24	102.1	102.4	103.0	24	114.9	115.3	115.5	24	108.8	109.0	109.5	24	107.5	108.1	108.8	24
8/21	102.2	103.9	105.3	24	101.9	102.0	102.4	24	115.0	115.3	115.5	24	108.3	108.6	108.9	24	107.5	108.0	108.4	24
8/22	100.8	101.8	102.8	24	100.2	100.7	101.5	24	113.3	113.6	114.1	24	108.0	108.2	108.4	24	105.7	106.1	106.6	24
8/23	101.5	103.4	104.8	23	99.1	99.3	99.5	24	113.5	113.9	114.3	24	105.7	106.1	107.4	24	106.6	107.2	107.7	24
8/24	102.1	104.1	105.6	23	99.9	100.2	100.5	24	113.7	114.1	114.6	24	105.5	105.8	106.0	24	106.8	107.4	107.9	24
8/25	102.4	104.4	105.8	23	100.4	100.6	101.2	24	113.4	113.7	114.1	24	106.2	106.6	107.2	24	106.7	107.2	107.8	24
8/26	102.3	104.0	105.7	23	99.9	100.3	100.4	24	113.4	114.0	114.4	24	106.9	107.2	107.7	24	106.7	107.1	107.6	24
8/27	102.0	104.0	105.4	23	99.2	99.9	100.2	24	112.1	112.4	113.2	24	106.3	106.4	106.7	24	106.4	106.7	107.0	24
8/28	100.9	101.8	102.4	23	100.5	101.1	102.1	24	111.4	111.7	112.1	24	106.4	106.5	106.8	24	106.5	106.9	107.3	24
8/29	101.8	103.6	104.8	24	102.1	102.3	102.6	24	111.7	112.0	112.4	24	106.2	106.4	106.6	24	106.4	106.8	107.1	24
8/30	101.5	103.1	104.4	24	100.9	101.4	101.7	24	111.5	111.8	112.1	24	106.1	106.5	106.9	24	106.5	106.8	107.0	24
8/31	101.1	102.6	103.8	24	99.8	100.0	100.3	24	111.8	112.0	112.2	24	105.3	105.5	106.1	24	105.8	106.0	106.1	24
9/1	101.0	102.1	103.3	23	99.0	99.0	99.8	12	100.4	101.7	111.1	24	104.8	105.1	105.4	24	104.3	104.8	105.9	24
9/2	99.7	99.7	102.6	12	---	---	---	0	98.8	99.5	99.9	24	104.1	104.6	105.0	24	103.1	103.6	104.0	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	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/20	105.3	105.6	106.0	24	114.9	116.3	116.7	24	109.3	109.7	110.0	24	112.0	112.9	113.5	24	---	---	---	0
8/21	105.3	105.7	106.1	24	115.7	115.9	116.2	24	109.3	109.4	109.6	24	113.4	114.0	114.7	24	---	---	---	0
8/22	104.0	104.1	104.3	24	112.3	113.5	115.4	24	107.9	108.4	109.0	24	112.9	112.9	113.0	3	---	---	---	0
8/23	102.5	102.8	103.6	24	113.6	114.8	115.2	24	105.6	105.9	106.3	24	111.6	111.9	112.7	15	---	---	---	0
8/24	102.9	103.1	103.3	24	112.9	113.5	114.2	24	106.1	106.6	107.0	24	110.5	111.1	111.6	24	---	---	---	0
8/25	103.4	103.6	103.8	24	112.7	113.0	113.5	24	107.5	107.9	108.6	24	110.2	110.8	111.2	24	---	---	---	0
8/26	103.6	104.0	104.5	24	113.1	113.5	113.8	24	108.4	108.8	108.9	24	109.8	110.2	110.9	24	---	---	---	0
8/27	103.3	103.7	104.0	24	112.6	113.1	113.5	24	106.7	106.9	107.1	24	110.2	110.9	111.6	24	---	---	---	0
8/28	105.0	105.5	105.8	24	112.2	112.5	112.7	24	107.6	108.4	109.2	24	110.1	110.6	111.2	24	---	---	---	0
8/29	104.2	104.4	104.9	24	112.1	112.3	112.7	24	108.6	109.0	109.5	24	110.0	110.7	111.5	24	---	---	---	0
8/30	103.3	103.5	103.8	24	111.9	112.3	112.4	24	107.4	107.8	108.3	24	109.3	109.7	109.9	24	---	---	---	0
8/31	102.6	102.8	103.2	24	111.9	112.3	112.6	24	105.8	106.0	106.5	24	109.1	109.3	109.8	24	---	---	---	0
9/1	102.1	102.6	103.0	24	102.9	103.9	109.7	24	104.7	105.0	105.4	24	105.5	106.3	109.6	24	---	---	---	0
9/2	101.3	101.5	101.9	24	101.7	102.3	102.6	24	103.7	103.9	104.1	24	104.2	104.7	105.3	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	
8/20	106.8	106.9	107.1	24	114.8	115.4	116.3	24	103.6	104.0	104.3	24	113.9	114.6	114.8	24	104.0	104.2	104.5	24
8/21	105.9	106.4	106.7	24	114.4	115.0	116.3	24	103.7	103.9	104.1	24	113.3	113.9	114.5	24	104.1	104.5	104.8	24
8/22	103.5	103.7	104.3	24	112.9	113.3	114.2	24	101.9	102.3	102.8	24	112.8	113.3	113.8	24	102.4	102.7	103.3	24
8/23	102.6	102.8	103.2	24	113.1	113.3	113.6	24	100.9	101.3	102.4	24	113.2	113.8	114.2	24	101.8	102.4	103.3	24
8/24	103.8	104.2	104.4	24	113.3	113.7	114.3	24	101.7	102.3	103.4	24	113.9	114.1	114.5	24	106.1	107.5	107.8	24
8/25	104.2	104.5	105.3	24	114.4	115.7	116.4	24	102.3	102.7	103.2	24	114.2	114.5	114.8	24	107.8	108.4	108.8	24
8/26	104.7	105.3	105.5	24	113.2	113.9	114.3	24	101.6	102.1	102.7	24	113.0	113.4	113.9	24	106.9	107.8	108.4	24
8/27	103.5	103.9	104.2	24	113.0	113.3	113.7	24	101.0	101.6	101.9	24	113.4	114.0	114.3	24	103.5	103.7	104.2	24
8/28	105.0	105.3	105.5	24	113.5	113.9	114.0	24	101.7	102.0	102.1	24	112.9	113.3	113.6	24	104.6	105.5	105.7	24
8/29	104.1	104.6	105.3	24	111.8	112.1	112.3	24	101.4	101.5	101.7	24	112.1	112.5	113.0	24	104.7	105.0	105.7	24
8/30	102.4	102.7	103.0	24	110.7	111.0	111.3	24	100.9	101.1	101.2	24	112.4	112.9	113.3	24	103.0	103.3	103.7	24
8/31	101.6	101.8	102.0	24	111.3	111.7	111.9	24	100.4	100.7	100.9	24	111.7	112.1	112.4	24	103.2	103.5	103.8	24
9/1	101.5	101.7	102.0	24	102.8	104.6	111.8	24	100.6	100.7	100.9	24	102.7	103.3	105.6	24	103.5	103.7	103.7	24
9/2	100.6	100.8	102.3	24	100.5	101.0	101.3	24	100.9	101.8	102.1	24	102.0	102.8	105.7	24	103.4	103.8	104.2	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	
8/20	111.6	112.2	112.4	24	103.1	103.3	103.6	24	114.2	114.6	115.2	24	110.3	111.8	112.6	24	113.2	113.3	113.4	24
8/21	110.8	111.4	112.0	24	102.6	102.8	103.3	24	113.9	114.2	114.8	24	110.5	111.2	111.7	24	113.2	113.3	113.5	24
8/22	109.5	109.8	110.2	24	101.0	101.3	102.0	24	113.4	113.8	114.2	24	109.4	110.2	110.5	24	113.0	113.1	113.1	24
8/23	110.1	110.9	111.8	24	101.6	102.5	102.9	24	114.5	115.3	115.9	24	111.1	113.2	114.4	24	113.0	113.2	113.4	24
8/24	112.3	113.3	113.7	24	102.9	103.4	103.8	24	114.0	114.8	115.3	24	109.7	111.6	114.5	24	112.9	113.1	113.3	24
8/25	113.8	114.3	114.9	24	105.6	106.7	107.4	24	115.8	116.8	117.3	24	110.7	113.0	114.3	24	112.8	113.0	113.4	24
8/26	112.4	113.4	114.6	24	106.9	107.5	107.8	23	114.7	115.2	116.2	24	112.2	113.1	114.5	24	112.8	113.1	113.4	24
8/27	111.6	111.9	112.2	24	105.1	105.3	105.4	24	114.4	114.9	115.7	24	112.4	114.4	115.3	24	112.6	112.7	112.9	24
8/28	111.7	112.0	112.6	24	105.3	105.4	105.4	24	115.3	115.9	116.3	24	113.6	114.4	114.9	24	112.6	112.8	113.0	24
8/29	111.6	111.9	112.2	24	103.7	103.9	104.6	24	114.2	114.8	115.8	24	111.8	112.7	113.1	24	112.2	112.3	112.5	24
8/30	110.7	111.3	111.5	24	103.8	103.9	104.1	24	114.2	115.1	116.1	24	112.8	113.6	114.2	24	112.6	112.9	113.8	24
8/31	109.2	109.7	109.9	24	102.9	103.0	103.3	24	112.4	113.6	115.2	24	111.8	112.4	113.5	24	114.0	115.1	115.2	24
9/1	105.7	107.0	110.0	24	102.0	102.2	102.5	24	104.5	107.7	111.2	24	109.8	110.8	111.9	24	111.3	112.8	116.1	24
9/2	104.6	105.2	105.5	24	102.7	103.2	103.4	24	103.6	104.3	105.1	24	104.1	104.9	107.6	24	112.1	113.9	117.1	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)
08/20/2010 *	---	---	---	---	3	3	0	0	0	0	0
08/21/2010 *	---	---	---	---	0	2	0	0	0	---	---
08/22/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/23/2010 *	---	---	---	---	0	0	2	0	0	---	---
08/24/2010 *	---	---	---	---	0	3	0	0	0	0	0
08/25/2010 *	---	---	---	---	0	0	0	0	0	---	0
08/26/2010 *	---	---	---	---	0	2	0	0	0	---	0
08/27/2010 *	---	---	---	---	0	0	0	0	0	0	0
08/28/2010 *	---	---	---	---	0	2	2	0	0	---	0
08/29/2010	---	---	---	---	0	2	0	0	0	0	0
08/30/2010	---	---	---	---	0	0	0	0	0	0	0
08/31/2010	---	---	---	---	0	0	0	0	0	0	0
09/01/2010 *	---	---	---	---	0	0	0	---	0	0	0
09/02/2010	---	---	---	---	---	0	---	---	0	0	0
09/03/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>14</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>12</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</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>2,452,571</b>	<b>1,260,528</b>	<b>452,093</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)
08/20/2010 *	---	---	---	---	1,394	1,248	246	64	5,317	890	2,535
08/21/2010 *	---	---	---	---	737	194	69	81	8,803	---	---
08/22/2010 *	---	---	---	---	469	213	159	54	8,661	---	1,165
08/23/2010 *	---	---	---	---	319	425	142	17	4,953	---	---
08/24/2010 *	---	---	---	---	320	112	75	69	8,502	1,052	586
08/25/2010 *	---	---	---	---	376	116	137	63	30,788	---	1,039
08/26/2010 *	---	---	---	---	380	213	89	32	6,615	---	2,240
08/27/2010 *	---	---	---	---	418	210	89	24	9,506	1,559	2,714
08/28/2010 *	---	---	---	---	232	131	37	27	12,626	---	726
08/29/2010	---	---	---	---	182	64	26	16	7,822	3,795	589
08/30/2010	---	---	---	---	157	156	9	28	7,617	2,184	629
08/31/2010	---	---	---	---	172	133	8	67	22,676	3,321	403
09/01/2010 *	---	---	---	---	248	54	24	---	7,726	3,507	886
09/02/2010	---	---	---	---	---	23	---	---	4,755	3,597	1,109
09/03/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,404</b>	<b>3,292</b>	<b>1,110</b>	<b>542</b>	<b>146,367</b>	<b>19,905</b>	<b>14,621</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>12</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>416</b>	<b>235</b>	<b>85</b>	<b>45</b>	<b>10,455</b>	<b>2,488</b>	<b>1,218</b>
<b>YTD</b>	<b>0</b>	<b>42</b>	<b>28</b>	<b>1,275</b>	<b>1,024,244</b>	<b>1,307,964</b>	<b>770,532</b>	<b>23,361</b>	<b>3,877,955</b>	<b>2,223,185</b>	<b>5,096,044</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)	
08/20/2010	*	---	---	---	---	3	3	0	0	0	0	
08/21/2010	*	---	---	---	---	0	0	0	0	0	---	
08/22/2010	*	---	---	---	---	0	2	0	0	0	---	
08/23/2010	*	---	---	---	---	0	0	0	0	0	---	
08/24/2010	*	---	---	---	---	0	0	0	0	0	0	
08/25/2010	*	---	---	---	---	0	0	0	0	0	---	
08/26/2010	*	---	---	---	---	2	0	0	0	0	---	
08/27/2010	*	---	---	---	---	0	2	0	0	0	0	
08/28/2010	*	---	---	---	---	0	0	0	0	0	---	
08/29/2010		---	---	---	---	0	2	0	0	0	0	
08/30/2010		---	---	---	---	4	0	0	0	0	0	
08/31/2010		---	---	---	---	0	1	0	0	0	0	
09/01/2010	*	---	---	---	---	0	0	0	---	0	0	
09/02/2010		---	---	---	---	---	0	---	---	0	0	
09/03/2010		---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>12</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>0</b>	<b>0</b>	<b>1</b>	
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>	<b>40,179</b>	<b>53,911</b>	<b>13,604</b>	<b>41,441</b>	<b>85,780</b>	<b>111,156</b>	<b>524,778</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)	
08/20/2010	*	---	---	---	---	0	0	0	0	0	22	0
08/21/2010	*	---	---	---	---	0	0	0	0	0	---	---
08/22/2010	*	---	---	---	---	2	0	0	2	0	---	0
08/23/2010	*	---	---	---	---	0	2	2	1	0	---	---
08/24/2010	*	---	---	---	---	0	0	0	0	0	0	0
08/25/2010	*	---	---	---	---	0	2	0	1	0	---	0
08/26/2010	*	---	---	---	---	0	0	0	1	0	---	0
08/27/2010	*	---	---	---	---	0	2	0	0	0	0	0
08/28/2010	*	---	---	---	---	0	0	0	0	0	---	0
08/29/2010		---	---	---	---	0	0	0	0	0	0	0
08/30/2010		---	---	---	---	0	0	0	1	0	0	0
08/31/2010		---	---	---	---	0	0	0	1	0	0	0
09/01/2010	*	---	---	---	---	0	0	0	---	0	0	0
09/02/2010		---	---	---	---	---	0	---	---	0	0	0
09/03/2010		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>7</b>	<b>0</b>	<b>22</b>	<b>0</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>12</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>
<b>YTD</b>		<b>4,385</b>	<b>27,688</b>	<b>4,051</b>	<b>11,795</b>	<b>2,045,799</b>	<b>1,594,181</b>	<b>427,856</b>	<b>17,309</b>	<b>448,224</b>	<b>594,822</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)	
08/20/2010	*	---	---	---	0	0	0	0	0	0	0	
08/21/2010	*	---	---	---	3	0	0	0	0	---	---	
08/22/2010	*	---	---	---	0	0	2	0	10	---	0	
08/23/2010	*	---	---	---	0	0	0	0	0	---	---	
08/24/2010	*	---	---	---	0	0	0	1	10	0	0	
08/25/2010	*	---	---	---	0	0	0	1	21	---	0	
08/26/2010	*	---	---	---	2	0	0	0	0	---	0	
08/27/2010	*	---	---	---	0	0	0	0	10	0	0	
08/28/2010	*	---	---	---	2	0	0	0	0	---	0	
08/29/2010		---	---	---	0	0	0	0	0	29	0	
08/30/2010		---	---	---	0	0	0	0	0	0	0	
08/31/2010		---	---	---	0	3	0	0	0	0	0	
09/01/2010	*	---	---	---	0	0	0	---	0	0	0	
09/02/2010		---	---	---	---	0	---	---	0	0	0	
09/03/2010		---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>51</b>	<b>29</b>	<b>0</b>	
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>12</b>	
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	
<b>YTD</b>		<b>80</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>8,770</b>	<b>12,824</b>	<b>2,204</b>	<b>36,508</b>	<b>1,469,150</b>	<b>656,084</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:

9/3/10 9:25 AM

08/20/10 TO 09/03/10

Site	Data	Species					Grand Total
		CH0	CH1	CO	ST	SO	
<b>LGR</b>	Sum of NumberCollected	2,302	1	4	1	3	2,311
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	2,684	1	5	3	4	2,697
	Sum of SampleMorts	32	0	0	0	0	32
	Sum of FacilityMorts	4	0	0	0	0	4
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	36	0	0	0	0	36
<b>LGS</b>	Sum of NumberCollected	2,178	8	6	3	2	2,197
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	2,610	8	6	6	2	2,632
	Sum of SampleMorts	28	1	0	0	0	29
	Sum of FacilityMorts	10	0	0	0	0	10
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	38	1	0	0	0	39
<b>LMN</b>	Sum of NumberCollected	519	2		1		522
	Sum of NumberBarged	0	0		0		0
	Sum of NumberBypassed	31	0		0		31
	Sum of Numbertrucked	638	2		1		641
	Sum of SampleMorts	6	0		0		6
	Sum of FacilityMorts	0	0		0		0
	Sum of ResearchMorts	0	0		0		0
	Sum of TotalProjectMorts	6	0		0		6
<b>MCN</b>	Sum of NumberCollected	76,610				25	76,635
	Sum of NumberBarged	0				0	0
	Sum of NumberBypassed	0				0	0
	Sum of Numbertrucked	74,352				25	74,377
	Sum of SampleMorts	90				0	90
	Sum of FacilityMorts	436				0	436
	Sum of ResearchMorts	0				0	0
	Sum of TotalProjectMorts	526				0	526
Total Sum of NumberCollected		81,609	11	10	5	30	81,665
Total Sum of NumberBarged		0	0	0	0	0	0
Total Sum of NumberBypassed		31	0	0	0	0	31
Total Sum of Numbertrucked		80,284	11	11	10	31	80,347
Total Sum of SampleMorts		156	1	0	0	0	157
Total Sum of FacilityMorts		450	0	0	0	0	450
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		606	1	0	0	0	607

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

9/3/10 9:25 AM

TO: 09/03/10

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	610,918	1,622,345	28,355	5,792	1,358,152	3,625,562
	Sum of NumberBarged	605,631	1,428,784	28,337	5,772	1,309,483	3,378,007
	Sum of NumberBypassed	700	191,860	0	10	48,344	240,914
	Sum of NumberTrucked	3,298	1	7	5	4	3,315
	Sum of SampleMorts	249	54	1	0	19	323
	Sum of FacilityMorts	1,040	1,231	10	5	285	2,571
	Sum of ResearchMorts	0	415	0	0	17	432
	Sum of TotalProjectMorts	1,289	1,700	11	5	321	3,326
<b>LGS</b>	Sum of NumberCollected	860,319	873,202	36,908	8,876	1,085,610	2,864,915
	Sum of NumberBarged	849,625	791,515	36,896	8,872	1,025,889	2,712,797
	Sum of NumberBypassed	68	81,373	0	0	59,473	140,914
	Sum of NumberTrucked	4,705	8	10	2	9	4,734
	Sum of SampleMorts	240	30	2	1	10	283
	Sum of FacilityMorts	5,659	276	0	1	229	6,165
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	5,899	306	2	2	239	6,448
<b>LMN</b>	Sum of NumberCollected	509,361	305,752	8,789	1,525	239,911	1,065,338
	Sum of NumberBarged	507,240	304,265	8,789	1,421	234,687	1,056,402
	Sum of NumberBypassed	565	1,473	0	0	5,000	7,038
	Sum of NumberTrucked	900	2	0	0	1	903
	Sum of SampleMorts	57	9	0	1	10	77
	Sum of FacilityMorts	618	201	0	3	314	1,136
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	675	210	0	4	324	1,213
<b>MCN</b>	Sum of NumberCollected	1,922,348	1,224,094	47,445	848,905	260,030	4,302,822
	Sum of NumberBarged	299,909	173	70	190	86	300,428
	Sum of NumberBypassed	1,490,588	1,222,563	47,275	847,904	259,728	3,868,058
	Sum of NumberTrucked	119,663	0	40	65	0	119,768
	Sum of SampleMorts	521	121	5	96	17	760
	Sum of FacilityMorts	6,880	1,237	55	650	199	9,021
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	7,401	1,358	60	746	216	9,781
Total Sum of NumberCollected		3,902,946	4,025,393	121,497	865,098	2,943,703	11,858,637
Total Sum of NumberBarged		2,262,405	2,524,737	74,092	16,255	2,570,145	7,447,634
Total Sum of NumberBypassed		1,491,921	1,497,269	47,275	847,914	372,545	4,256,924
Total Sum of NumberTrucked		128,566	11	57	72	14	128,720
Total Sum of SampleMorts		1,067	214	8	98	56	1,443
Total Sum of FacilityMorts		14,197	2,945	65	659	1,027	18,893
Total Sum of ResearchMorts		0	415	0	0	17	432
Total Sum of TotalProjectMorts		15,264	3,574	73	757	1,100	20,768

Cumulative Adult Passage at Mainstem Dams Through: 09/02

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	09/02	244384	12612	114525	66631	167834	17301	97604	15603	81936	37416	82525	13362
TDA	09/02	189839	11546	93908	53646	121486	13792	81292	12528	79916	27878	72634	10423
JDA	09/01	179446	11794	76806	49733	101283	12037	70955	12475	65989	33147	66361	11207
MCN	09/02	153246	9178	70413	43328	93119	11340	66526	8063	57137	21182	62804	9141
IHR	09/02	101188	6047	55435	28223	64058	7222	29583	3503	23856	9400	15236	3378
LMN	09/02	97334	5898	66931	20009	63381	6004	35097	4362	23353	11733	15714	2947
LGS	09/02	92985	5461	52642	24331	58937	6617	32410	3968	20340	11207	12950	3477
LGR	09/02	94203	6409	49667	31064	59309	8137	28778	5294	14482	16367	12293	4233
PRD	09/01	30539	932	13469	2910	19097	834	49265	1217	49417	2117	55919	2554
RIS	09/01	29684	1513	12634	6003	15841	1581	47220	4018	44295	7727	52600	6133
RRH	09/01	8660	523	6090	1086	6208	510	34173	1724	34961	5231	40122	4303
WEL	09/01	7555	661	6307	1867	4866	487	26538	1856	25725	3800	29472	2340
WFA	08/14	64275	1679	25753	2688	-	-	-	-	-	-	-	-

EndDate	DAM	Fall Chinook					
		2010 Adult	Jack	2009 Adult	Jack	10-Yr Avg. Adult	Jack
9/2	BON	121479	13840	137642	43127	110161	12747
9/2	TDA	51758	7971	63500	22190	47034	6747
9/1	JDA	27656	5342	42179	16809	24913	4877
9/2	MCN	18680	2426	24917	9774	15837	2876
9/2	IHR	6357	1244	7884	5466	2617	833
9/2	LMN	4593	847	4731	6612	1816	925
9/2	LGS	2586	446	3444	1657	1204	283
9/2	LGR	1589	393	1683	1243	771	241
9/1	PRD	2447	582	5745	786	5389	1180
9/1	RIS	1555	762	2544	1086	2310	720
9/1	RRH	1398	250	2034	603	1863	481
9/1	WEL	221	305	445	219	522	155
8/14	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
BON	10064	763	40330	2698	18209	1144	386519	177820	94584	333996	496741	293377	134336
TDA	1571	244	7524	2144	2160	396	325129	155582	80569	181072	239875	127606	78397
JDA	385	66	4417	1310	892	228	324116	157391	86662	120878	229077	93547	52579
MCN	150	13	1279	365	238	48	278802	121668	69739	101734	119673	63243	41165
IHR	1	0	29	4	4	0	1302	867	175	64118	75034	34859	20338
LMN	0	0	6	0	0	0	1654	1162	220	55125	54835	29824	20282
LGS	2	1	3	0	0	0	1655	1065	197	34794	27609	18619	13418
LGR	0	0	0	0	0	0	2174	1215	242	39296	25796	20450	15312
PRD	0	0	257	18	45	2	357056	153466	88588	17144	16992	8972	0
RIS	0	1	13	44	2	2	338291	162817	85458	13414	12733	7440	6720
RRH	0	0	4	11	1	0	295611	133083	64314	10059	9351	5406	4445
WEL	0	0	0	0	0	0	291272	134893	65136	5803	5812	3371	2584
WFA	32	36	0	0	-	-	0	0	-	28758	16887	-	-

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: 09/03/10

BON counts from January 1, 2010 to March 14, 2010 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2009	39	0	2,318	657
2008	19	-1	321	109