



Fish Passage Center

Weekly Report #11 - 25

September 2, 2011

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 4% and 64% of average at individual sub-basins over August. Precipitation above The Dalles has been 29% of average over August. Over the 2011 water year, precipitation has ranged between 104% and 122% of average.

Table 1. Summary of August 1-29 precipitation and cumulative October through August 29 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2011 August 1-29, 2011		Water Year 2011 October 1, 2010 to August 29, 2011	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.48	30	26.35	110
Snake River Above Ice Harbor	0.36	45	20.37	121
Columbia Above The Dalles	0.32	29	25.54	116
Kootenai	0.50	31	25.84	105
Clark Fork	0.26	22	19.02	114
Flathead	0.22	14	25.72	117
Pend Oreille/ Spokane	0.09	8	19.61	104
Central Washington	0.02	6	9.33	107
Snake River Plain	0.35	64	12.79	119
Salmon/Boise/ Payette	0.16	24	20.65	108
Clearwater	0.15	13	35.92	122
SW Washington Cascades/Cowlitz	0.19	13	72.72	106
Willamette Valley	0.04	4	62.28	108

Table 2 displays the June Final and July Final runoff volume forecasts for multiple reservoirs. The July Final forecast at The Dalles between January and July is 142000 Kaf (132% 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)	131	141000	132	142000
Grand Coulee (Jan-July)	124	78300	126	79500
Libby Res. Inflow, MT (Apr-Aug)	127	7930 8099*	129	8090
Hungry Horse Res. Inflow, MT (Jan-July)	153	3410	154	3430
Lower Granite Res. Inflow (Apr- July)	156	33700	159	34200
Brownlee Res. Inflow (Apr-July)	177	11200	173	10900
Dworshak Res. Inflow (Apr-July)	143	3770 3813*	149	3940

* Denotes COE Forecast

The flow objective at Lower Granite over the summer period (June 21st to August 31st) was 55 Kcfs; over the entire summer period flows at Lower Granite have averaged 81.2 Kcfs and 36.4 Kcfs over the last week.

The summer flow objective period began at McNary Dam on July 1st and ended on August 31st with a flow objective of 200 Kcfs. Over the entire summer flow period, flows at McNary have averaged 261.2 Kcfs and 181.1 Kcfs last week.

Grand Coulee Reservoir was at 1279.9 feet on August 31st, 2011 slightly less than the August 31st draft elevation at Grand Coulee of 1280 feet. Grand Coulee has drafted 2.3 feet over the last week and outflows have ranged between 106.7 and 138.3 Kcfs.

The Libby Reservoir is currently at elevation 2447.7 feet (8-31-11) and has drafted 1.5 feet last week. Outflows at Libby Dam have been reduced to 9.0 Kcfs and are expected to be further reduced to 6.0 Kcfs by the end of the weekend.

Hungry Horse is at an elevation of 3555.5 feet (8-31-11) and has drafted 1.0 foot last week. Outflows at Hungry Horse have been 3.5 Kcfs last week. The BOR plans to target elevation 3550 feet by the end of September.

Dworshak was at an elevation of 1541.4 feet on August 31st, 2011 and drafted 10.0 feet over the last week. Outflows from Dworshak have been 13.2-14.2 Kcfs last week. The COE plans to maintain the current outflow at Dworshak until elevation 1535 feet is reached, then reduce outflows from Dworshak to full powerhouse (approximately 10 Kcfs) until September 9th, 2011. Dworshak is expected to be minimum outflows (approximately 1.5 Kcfs) by September 21st, 2011.

The Brownlee Reservoir was at an elevation of 2055.8 feet on August 31st, 2011 drafting 0.5 feet last week. Over the last week, outflows at Brownlee have ranged between 12.1-16.7 Kcfs.

Spill:

Summer spill for fish passage in the Snake River ended at midnight on August 31, 2011.

Spill occurred at Dworshak Dam this past week, as the project drafts to the end of September target elevation of 1520 feet. For August 25th to 31st, daily average flows at Lower Granite Dam ranged from 32.6 to 39.2 Kcfs, and daily average spill from 18.5 to 18.7 Kcfs. At Little Goose Dam, spill met the 30% of instantaneous flow Court Order through the week. At Lower Monumental Dam spill met the Court ordered

17 Kcfs over the past week.

Beginning July 13, spill levels at Ice Harbor were changed to the 45 Kcfs/gas cap levels, which will continue through the rest of the summer period. Over the past week spill levels have met the Court Order, except when flows were too low to maintain the spill levels and powerhouse minimum flows. Daily average spill over the past week has ranged from 23.3 to 34.5 Kcfs.

Project	Day/Night Spill
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	July 13 – August 31: 45 Kcfs / gas cap

Planned summer spill for fish passage ended in the lower Columbia River on August 31st at midnight. Spill at McNary Dam has met the Court Ordered 50% of daily average flow. Spill levels at John Day met the post-test conditions of 30% of total river flow. At The Dalles Dam, spill met the 40% of instantaneous flow Court Order over the past week. Finally, at Bonneville Dam spill met the Court ordered summer operations.

Project	Day/Night Spill
McNary	50%/50%
John Day	Post-test: 30%/30%
The Dalles	40%/40%
Bonneville	July 20th - August 31: 75 Kcfs day/GasCap night.

All projects were in compliance with the 115/120% total dissolved gas criteria, with the exception of one day when the Camas/Washougal gauge below Bonneville Dam was above the 115% TDG criterion. No fish were observed with any signs of gas bubble trauma this past week.

Smolt Monitoring:

This was the last week of sampling at Rock Island Dam, where sampling ended August 31. GBT monitoring also ended August 31 with the end of summer spill. Sampling at John Day and Bonneville dams was altered due to river temperatures

exceeding 70 degrees Fahrenheit. The transport sites have transitioned to truck transport with the last barges leaving on August 15. Subyearling Chinook predominated in the collections at all dams over the past week. Subyearling Chinook passage indices were similar to last week with relatively low numbers at the Snake River and at Rock Island dams and the highest numbers at McNary Dam.

Subyearling Chinook juvenile salmon numbers declined over the past week at Lower Granite Dam where the passage index averaged nearly 170 per day over the past week compared 300 per day the previous week. Small numbers of all spring migrants continue to be collected sporadically. Little Goose and Lower Monumental dams also had subyearling Chinook predominating in the indices, followed by small but steady numbers of juvenile coho salmon.

Sampling at Rock Island Dam ended August 31. Subyearling Chinook salmon predominated in the samples over the past week. Subyearling Chinook collections decreased this week with the index averaging 30 per day this week compared to 70 per day last week. All spring migrant indices averaged 10 or fewer fish per day last week.

McNary Dam moved to every day sampling with the beginning of collections for transportation on July 20. Subyearling Chinook continue to predominate in passage at the project, with the average passage index at 16,000 per day this week compared to 17,000 last week. McNary has switched to every-other-day trucking beginning on August 17. Small numbers of juvenile shad have been sampled at the site this season. The highest number this year was the sample of 33 shad on September 1.

At John Day Dam sampling was modified due to temperatures exceeding 70 degrees Fahrenheit on August 26. During high temperature periods sampling at John Day consists of condition sampling every third day.

At Bonneville Dam sampling was also altered due to high temperatures. Sampling during high temperature at Bonneville consists of every-other-day condition monitoring.

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 scheduled releases to this zone this week. In addition, there are no new releases of juvenile salmonids scheduled for the next two

weeks.

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

Adult Passage:

Fall Chinook began to pass Bonneville Dam on August 1st. Daily counts of fall Chinook at Bonneville Dam ranged from 391 to 1,015. The 2011 adult fall Chinook count of 62,602 is about 58.9% of the 2010 count and 63.6% of the 10 year average count. The 2011 Bonneville Dam fall Chinook jack count of 11,871 is about 96.6% of the 2010 count and 1.03 times greater than the 10 year average. The 2011 McNary Dam adult fall Chinook count of 13,807 is about 85% of the 2010 count and about 1.05 times greater than the 10 year average. The 2011 fall Chinook jack McNary Dam jack count of 2,939 is about 1.38 times greater than the 2010 count and about 1.13 times greater than the 10 year average.

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 2011 B-run adult steelhead count at Bonneville of 20,727 is about 69.3% of the 2010 count of 29,911 and 64.4% of the 10 year average count of 32,189.

The Bonneville Dam 2011 steelhead count of 283,169 is about 85.6% of the 2010 count of 330,990 and about 93.8% of the 10 year average count of

301,794. In the Snake River, this year's Lower Granite steelhead count of 42,395 is about 1.11 times greater than the 2010 count and about 1.92 times greater than the 10 year average count. The 2011 LGR wild steelhead count as of September 1st was 16,447. The 2011 Rock Island Dam adult steelhead count of 9,076 is about 69% of the 2010 count, while being 1.13 times greater than the 10 year average. At Willamette Falls Dam, the 2011 count for steelhead was 27,407, as of August 28th. This year's steelhead count is about 86% of the 2010 count and about 96.9% of the 10 year average.

The 2011 adult sockeye count at Bonneville Dam of 185,796 is about 48.1% of the 2010 count, while being about 1.5 times greater than the 10 year average. The 2011 adult sockeye count at McNary Dam of 113,937 is about 40.9% of the 2010 count, while being 1.24 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 2011 adult sockeye count of 1,140 is about 87.5% of the 2010 count of 1,302, while being about 4.07 times greater than the 10 year average count of 280. The Lower Granite Dam 2011 adult sockeye count of 1,500 is about 69% of the 2010 count of 2,174 and about 3.5 times greater than the 10 year average of 427.

The 2011 Bonneville Dam adult coho salmon count of 15,270 is about 1.82 times greater than the 2010 count of 8,360 and 1.01 times greater than the 10 year average count of 15,061. The 2011 Bonneville Dam coho jack count of 721 is about 1.10 times greater than the 2010 count, while being 76.6% of the 10 year average count.

Hatchery Releases Last Two Weeks

No releases to report.

Hatchery Releases Next Two Weeks

No releases to report.

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
08/19/2011	139.9	0.1	140.4	0.0	143.6	10.9	146.3	1.4	150.2	29.6	160.2	22.7	158.8	30.1
08/20/2011	134.6	0.1	131.5	0.0	132.3	9.3	131.2	0.0	135.3	24.1	149.2	19.6	147.8	28.2
08/21/2011	134.2	0.1	132.5	0.0	137.2	9.5	138.7	0.0	143.9	24.1	146.1	19.6	144.4	28.0
08/22/2011	135.8	0.1	140.5	0.0	141.6	12.3	139.0	0.9	141.2	27.7	140.1	30.1	137.7	28.4
08/23/2011	143.0	0.1	140.6	0.0	145.5	10.9	148.1	8.5	152.6	28.1	167.4	62.1	166.7	40.3
08/24/2011	132.3	0.1	133.1	0.0	143.3	9.2	145.1	0.4	149.9	25.5	149.0	46.2	152.8	31.2
08/25/2011	126.6	0.1	123.0	0.0	128.0	8.8	128.7	0.0	132.4	2.5	145.8	24.4	144.3	22.9
08/26/2011	138.3	0.1	144.6	0.0	141.5	9.7	136.5	0.0	136.9	0.0	137.9	15.1	131.4	24.0
08/27/2011	122.2	0.1	118.6	0.0	123.9	0.0	126.8	0.0	132.8	0.0	149.3	2.8	146.5	14.5
08/28/2011	116.7	0.1	113.7	0.0	112.6	0.0	113.7	0.0	116.1	0.0	117.9	1.7	115.4	1.1
08/29/2011	106.7	0.1	108.8	0.0	108.2	0.0	112.9	0.0	116.4	0.0	132.8	2.1	130.5	8.6
08/30/2011	118.9	0.1	111.6	0.0	111.7	0.0	112.1	0.0	113.2	0.0	111.5	1.7	109.7	1.4
08/31/2011	109.9	0.1	124.0	0.0	121.9	0.1	123.1	0.0	124.8	8.8	126.1	8.8	112.7	8.1
09/01/2011	82.3	0.1	80.5	0.0	89.6	0.5	100.0	0.6	104.6	2.8	135.6	3.3	134.2	9.3

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
08/19/2011	13.9	3.9	15.2	11.6	35.5	22.5	36.2	10.9	36.0	16.9	37.1	27.1		
08/20/2011	14.0	4.0	13.5	14.5	33.8	18.4	36.1	10.9	35.6	17.1	36.9	27.1		
08/21/2011	14.0	3.9	14.3	14.5	36.7	18.4	37.1	11.1	35.3	17.0	36.9	26.8		
08/22/2011	14.0	4.0	14.7	16.8	35.5	18.5	36.3	10.8	36.6	17.0	37.0	27.1		
08/23/2011	14.0	4.0	15.1	---	39.3	18.5	39.0	11.6	38.4	16.9	36.0	26.0		
08/24/2011	14.2	4.1	13.5	16.3	38.2	18.5	38.7	11.5	37.4	16.9	38.1	28.1		
08/25/2011	14.2	4.0	14.7	16.7	39.2	18.5	41.0	12.2	41.2	17.0	45.0	34.5		
08/26/2011	13.7	3.7	14.3	16.2	37.6	18.7	36.7	10.9	35.0	17.0	33.9	24.0		
08/27/2011	13.5	3.3	13.9	11.8	36.1	18.6	37.5	11.2	36.3	17.0	38.2	28.6		
08/28/2011	13.2	3.0	14.2	15.0	32.6	18.5	32.7	9.8	31.4	17.0	32.7	22.5		
08/29/2011	13.2	3.0	15.1	16.7	35.1	18.5	36.0	10.9	34.3	17.0	33.6	23.3		
08/30/2011	13.4	3.1	14.6	16.5	36.9	18.5	38.0	11.3	37.4	17.0	38.8	28.6		
08/31/2011	13.5	3.2	14.2	16.0	37.4	18.5	37.9	11.3	38.7	17.0	38.8	28.5		
09/01/2011	13.8	3.5	---	---	36.9	0.0	31.4	3.1	29.5	0.1	29.2	0.2		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
08/19/2011	208.6	105.0	203.3	60.9	195.4	78.1	217.3	95.6	39.6	69.7
08/20/2011	199.0	99.9	185.8	55.8	175.5	70.1	180.7	96.0	9.1	63.3
08/21/2011	182.6	91.5	168.9	50.6	157.4	62.8	176.6	96.1	9.7	58.3
08/22/2011	191.5	96.0	168.5	50.3	161.7	64.7	178.6	95.9	13.8	56.5
08/23/2011	193.5	97.2	185.4	55.4	173.3	69.1	183.4	96.4	9.5	65.1
08/24/2011	211.1	105.7	198.3	59.4	186.9	74.4	196.3	96.4	12.0	75.5
08/25/2011	202.0	101.4	203.6	60.9	195.8	78.2	199.8	95.3	13.4	78.7
08/26/2011	200.7	100.5	179.9	53.8	167.1	66.8	182.9	94.3	8.5	67.6
08/27/2011	185.0	92.6	176.1	53.1	169.4	68.1	174.8	94.3	1.1	67.0
08/28/2011	167.3	84.0	157.7	47.2	148.4	59.4	176.1	94.1	0.7	68.9
08/29/2011	164.5	82.7	151.8	45.7	146.4	58.5	160.1	94.3	0.0	53.5
08/30/2011	166.5	83.9	150.2	45.0	140.4	56.2	163.7	94.8	0.0	56.4
08/31/2011	181.8	91.4	175.9	52.7	165.0	66.1	168.9	96.3	0.0	60.2
09/01/2011	139.0	2.2	139.7	0.9	143.8	0.0	156.1	4.7	52.9	89.6

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
Little Goose Dam											
	08/22/11	Chinook + Steelhead	20	0	0	0.00%	0.00%	0	0	0	0
	08/29/11	Chinook + Steelhead	3	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	08/24/11	Chinook + Steelhead	13	0	0	0.00%	0.00%	0	0	0	0
	08/31/11	Chinook + Steelhead	9	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	08/20/11	Chinook + Steelhead	20	0	0	0.00%	0.00%	0	0	0	0
	08/21/11	Chinook + Steelhead	25	0	0	0.00%	0.00%	0	0	0	0
	08/23/11	Chinook + Steelhead	70	0	0	0.00%	0.00%	0	0	0	0
	08/24/11	Chinook + Steelhead	30	0	0	0.00%	0.00%	0	0	0	0
	08/27/11	Chinook + Steelhead	73	0	0	0.00%	0.00%	0	0	0	0
	08/31/11	Chinook + Steelhead	83	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	08/22/11	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	08/25/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/29/11	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	<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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/19	105.2	105.9	106.3	24	110.1	110.5	110.7	22	113.0	113.2	113.5	24	111.9	112.6	113.0	22	110.2	110.4	110.6	24
8/20	105.5	105.9	106.3	22	110.4	110.9	111.8	20	112.2	112.7	113.0	24	112.1	112.8	113.5	20	110.9	111.2	111.4	24
8/21	105.8	106.3	106.6	24	110.6	110.9	111.2	24	111.6	112.7	113.1	24	112.1	113.0	113.2	24	111.2	111.4	111.7	24
8/22	105.5	105.7	105.9	24	110.9	111.2	111.4	23	111.0	111.4	112.0	24	112.1	112.8	114.1	23	110.6	111.0	111.3	24
8/23	105.4	105.7	106.0	23	110.3	110.7	111.2	20	110.5	111.1	111.8	23	111.1	112.3	124.2	20	109.6	110.0	110.9	24
8/24	105.1	105.5	105.7	24	110.3	110.6	111.1	22	110.8	111.3	111.7	24	108.7	110.0	110.5	22	109.3	109.6	109.7	24
8/25	105.3	105.6	105.7	23	110.5	110.8	111.3	21	110.3	110.8	111.3	24	109.6	110.2	112.0	21	109.7	110.1	110.3	24
8/26	105.2	105.5	106.0	22	110.5	110.7	111.5	19	109.7	109.9	110.2	21	107.2	107.2	107.6	3	109.2	109.6	109.8	23
8/27	105.5	106.0	106.3	24	110.3	110.7	111.0	23	109.1	109.3	109.6	24	---	---	---	0	109.3	109.7	109.9	24
8/28	105.7	106.2	106.6	23	110.8	111.2	111.8	21	109.5	110.1	110.8	24	---	---	---	0	109.2	109.8	110.2	24
8/29	105.8	106.0	106.3	24	111.1	111.4	111.8	20	109.8	110.2	110.4	24	109.4	109.4	109.9	10	109.4	110.0	110.5	24
8/30	105.9	106.1	106.2	23	110.6	110.9	111.2	22	109.4	109.8	110.1	24	108.9	109.5	110.1	22	109.2	109.7	110.1	24
8/31	105.8	106.0	106.2	23	109.0	109.5	110.1	21	109.1	109.3	109.8	24	108.1	108.9	111.8	21	108.2	108.6	108.8	24
9/1	105.4	105.4	105.6	24	107.8	108.2	108.6	23	108.3	108.5	108.7	24	107.6	108.3	109.9	23	107.0	107.3	107.6	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/19	109.7	110.1	110.4	24	110.2	110.7	111.5	23	112.4	113.0	113.5	23	110.6	111.5	112.0	24	108.8	109.4	110.2	24
8/20	110.6	111.4	112.6	24	110.3	111.1	111.5	24	112.1	112.9	113.6	24	111.7	112.2	112.5	24	108.9	109.8	110.2	24
8/21	110.9	111.6	113.7	24	111.2	111.8	112.5	24	112.8	113.5	114.2	24	111.2	111.6	111.8	24	109.1	109.5	109.9	24
8/22	110.2	111.0	111.9	24	110.4	111.0	111.6	22	112.2	112.8	113.3	22	111.0	111.1	111.4	24	108.6	108.9	109.1	24
8/23	109.2	109.8	110.3	24	108.9	109.1	109.1	24	112.0	113.3	119.0	24	110.1	110.4	110.8	24	109.0	109.7	111.5	24
8/24	109.4	109.9	110.6	24	109.4	110.0	110.7	23	111.2	112.1	112.8	23	110.4	111.1	111.8	24	108.0	108.6	109.2	24
8/25	109.9	110.5	111.0	24	109.4	110.0	110.7	24	111.0	111.7	112.8	24	110.0	110.4	110.7	24	106.7	107.4	107.7	24
8/26	109.3	109.6	109.8	23	109.6	110.1	110.7	22	111.1	111.9	112.7	22	110.0	110.3	110.6	24	106.9	107.4	107.6	24
8/27	109.5	110.1	110.4	24	109.1	109.7	110.3	24	109.3	110.0	110.5	24	109.7	110.2	110.6	24	106.5	106.9	107.4	24
8/28	109.8	110.5	111.9	24	109.4	110.4	111.0	24	109.2	110.3	111.0	24	109.8	110.0	110.4	24	106.2	106.8	107.1	24
8/29	110.2	110.8	112.3	24	109.9	110.6	111.6	22	109.6	110.4	111.3	22	109.0	109.2	109.6	24	106.1	106.5	106.8	24
8/30	109.6	109.9	110.2	24	108.9	109.7	110.2	24	108.9	109.6	110.2	24	108.2	108.3	108.4	24	105.0	105.3	105.4	24
8/31	108.4	109.0	109.6	24	108.4	108.9	110.2	23	108.1	108.7	109.6	23	107.3	107.6	107.9	23	104.3	104.5	104.9	23
9/1	107.5	108.1	108.9	24	106.8	107.2	107.6	24	107.0	107.4	107.7	24	106.0	106.2	106.5	24	103.1	103.4	103.6	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/19	130.8	152.4	571.3	24	137.2	160.2	601.4	24	110.0	110.6	110.9	24	111.9	112.4	112.7	24	110.7	111.7	112.7	24
8/20	110.5	111.2	111.9	24	115.0	115.9	116.3	24	110.9	111.5	112.0	24	112.8	113.1	113.2	24	112.1	112.7	113.4	24
8/21	110.5	110.9	111.2	24	114.8	115.6	115.8	24	111.8	112.0	112.3	24	113.2	113.5	113.6	24	112.9	113.5	113.9	24
8/22	109.8	110.0	110.4	24	114.7	115.1	115.9	24	111.4	111.7	111.9	24	113.3	113.5	113.7	24	111.7	112.3	112.8	24
8/23	110.1	111.0	112.8	24	114.5	115.4	116.5	24	111.5	112.4	113.4	24	116.1	118.7	123.7	24	112.4	113.9	115.4	24
8/24	109.2	110.5	111.5	24	112.8	115.1	115.8	24	112.0	112.8	113.6	24	114.6	115.9	119.2	24	116.4	117.9	118.9	24
8/25	109.1	109.5	110.1	24	109.9	110.6	115.0	24	112.1	112.9	113.4	24	113.4	113.7	114.0	24	112.2	112.7	114.3	24
8/26	109.2	110.0	116.5	24	109.3	110.0	116.7	24	112.0	112.9	113.6	24	112.7	113.0	113.6	24	111.6	112.1	112.6	24
8/27	109.2	109.3	109.4	24	109.2	109.3	109.4	24	110.6	111.3	112.2	24	110.2	110.7	111.8	24	110.9	111.3	112.1	24
8/28	109.4	109.7	109.9	24	109.4	109.7	109.9	24	109.9	111.1	112.5	24	109.3	109.6	109.8	24	109.4	109.7	110.0	24
8/29	109.1	109.7	109.9	24	109.2	109.7	109.9	24	107.7	108.1	109.0	24	108.6	108.8	109.2	24	108.0	108.3	108.7	24
8/30	106.9	107.5	107.8	24	107.2	107.8	108.1	24	105.8	106.2	106.6	24	106.3	106.7	107.1	24	105.7	106.1	106.5	24
8/31	106.3	106.6	107.0	23	107.7	109.0	111.9	23	104.7	105.0	105.7	24	105.8	106.2	106.5	24	103.5	103.7	104.1	24
9/1	105.4	106.1	106.4	24	106.3	107.6	112.2	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	<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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
8/19	113.0	113.4	113.5	24	109.3	110.2	110.8	24	108.5	108.7	109.0	24	106.6	107.5	108.3	24	102.0	103.6	105.3	24
8/20	114.0	114.5	114.7	24	109.6	110.5	111.0	24	109.0	109.3	110.0	24	106.9	108.0	108.8	24	102.1	103.8	105.5	24
8/21	114.7	115.1	115.3	24	110.0	110.8	111.5	24	108.8	109.0	109.4	24	107.0	107.9	108.8	24	102.1	103.7	105.4	24
8/22	114.0	114.3	114.6	24	109.9	110.4	111.1	24	108.7	109.0	109.3	24	107.0	108.1	109.0	24	102.0	103.4	105.0	24
8/23	114.7	115.5	117.1	24	109.0	110.4	110.9	24	108.6	108.9	109.2	24	106.7	107.6	108.4	24	102.0	103.5	105.2	24
8/24	116.7	117.4	117.8	24	111.0	112.3	113.1	24	109.3	109.6	109.9	24	107.2	108.1	109.1	24	102.3	103.8	105.5	24
8/25	113.7	114.1	115.0	24	112.2	112.8	113.5	24	109.3	109.6	110.8	24	107.6	108.3	109.0	24	102.2	103.5	105.0	24
8/26	113.6	113.9	114.2	24	110.2	110.7	111.3	24	109.5	109.9	110.3	24	107.7	108.8	109.6	24	102.2	103.5	105.1	24
8/27	112.4	113.5	114.6	24	109.7	110.5	111.0	24	108.9	109.3	110.0	24	107.5	108.2	108.9	24	102.1	103.5	105.1	24
8/28	109.5	109.8	110.2	24	109.2	109.8	110.0	24	108.5	108.9	109.4	24	107.1	108.1	108.9	24	101.8	103.2	105.2	24
8/29	108.6	109.2	110.2	24	106.7	107.4	107.8	24	108.5	108.8	109.2	24	107.0	107.8	108.6	24	102.1	103.5	105.1	24
8/30	106.3	106.9	109.0	24	105.6	106.4	107.2	24	108.9	109.3	109.8	24	107.0	107.8	108.7	24	101.7	102.8	104.3	24
8/31	105.0	105.7	106.5	24	104.0	104.7	105.4	24	108.6	109.0	109.4	24	106.8	107.5	108.4	24	101.4	102.5	103.8	24
9/1	---	---	---	0	102.6	104.0	104.7	24	109.5	109.9	110.3	24	107.0	108.1	109.1	24	101.4	103.0	104.6	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
8/19	104.5	106.6	108.2	24	102.2	102.7	103.1	24	117.7	119.1	120.3	24	110.9	111.2	111.4	24	111.9	112.2	112.6	24
8/20	104.5	106.6	108.4	24	102.8	103.1	103.3	24	116.3	116.6	117.2	24	110.7	110.8	111.1	24	112.6	112.9	113.2	24
8/21	104.5	106.6	108.2	24	102.6	102.9	103.9	24	116.1	116.3	116.6	24	111.5	112.4	113.6	24	113.3	113.8	114.3	24
8/22	104.5	106.5	107.9	24	102.4	102.7	103.1	24	115.9	116.1	116.3	24	113.7	114.2	114.8	24	112.7	113.1	113.5	24
8/23	104.5	106.4	107.9	24	101.9	102.2	102.4	24	115.9	116.1	116.5	24	113.3	113.6	114.0	24	113.2	114.1	117.9	24
8/24	104.6	106.5	108.1	24	102.6	103.0	103.3	24	116.0	116.4	117.1	24	112.2	112.5	113.2	24	112.9	113.2	113.7	24
8/25	104.8	106.5	107.9	24	103.0	103.4	103.7	24	116.1	116.4	116.8	24	111.4	111.8	112.3	24	112.8	113.6	114.7	24
8/26	104.8	106.7	108.0	24	102.0	102.3	102.6	24	116.3	116.6	117.3	24	111.9	112.0	112.1	24	112.2	112.7	113.5	24
8/27	104.7	106.5	107.9	24	101.8	102.1	102.6	24	116.4	116.6	117.4	24	111.3	111.4	111.6	24	112.0	112.4	113.2	24
8/28	104.6	106.3	107.8	24	102.1	102.6	103.4	24	116.4	116.6	116.9	24	111.9	112.4	113.8	24	112.2	112.7	113.1	24
8/29	104.6	106.2	107.6	24	102.5	102.8	103.3	24	116.4	116.6	117.1	24	113.1	113.3	113.6	24	112.4	112.6	113.0	24
8/30	104.0	105.4	106.6	24	102.7	102.9	103.2	24	116.2	116.4	116.9	24	112.7	113.0	113.5	24	112.2	112.6	113.0	24
8/31	103.9	105.4	106.6	24	103.0	103.1	103.4	24	116.5	117.0	117.5	24	110.3	110.9	112.4	24	110.9	111.3	111.6	24
9/1	103.8	105.6	106.7	24	102.0	102.2	102.5	24	102.3	103.0	110.3	24	107.8	108.0	108.4	24	107.6	109.0	109.8	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
8/19	110.0	110.2	110.6	24	116.2	116.5	116.8	24	111.2	111.9	112.6	24	113.7	114.3	114.9	24	---	---	---	0
8/20	110.5	110.9	111.2	24	116.1	116.4	116.7	24	111.8	112.2	112.5	24	113.6	114.1	114.6	24	---	---	---	0
8/21	110.4	110.6	110.8	24	116.4	116.7	117.0	24	112.9	113.1	113.3	24	114.1	114.7	115.8	24	---	---	---	0
8/22	110.4	110.5	110.6	24	116.2	116.5	116.6	24	113.1	113.3	113.5	24	114.0	114.5	115.3	24	---	---	---	0
8/23	110.6	110.9	111.2	24	116.4	116.8	117.4	24	112.6	112.7	112.9	24	113.3	113.5	113.7	24	---	---	---	0
8/24	110.9	111.2	111.4	24	116.7	117.0	117.4	24	112.3	112.6	112.9	24	114.2	114.8	115.4	24	---	---	---	0
8/25	111.0	111.2	111.7	24	116.7	117.0	117.4	24	112.4	112.5	112.8	24	113.4	113.7	114.1	24	---	---	---	0
8/26	110.9	111.3	111.9	24	116.7	116.8	117.2	24	112.3	112.6	113.2	24	112.6	113.8	114.7	24	---	---	---	0
8/27	111.6	111.9	112.1	24	116.7	116.9	117.3	24	113.1	113.6	114.1	24	113.4	113.7	114.1	24	---	---	---	0
8/28	112.0	112.3	112.7	24	116.7	116.9	117.1	24	114.0	114.4	114.7	24	113.3	113.6	114.0	24	---	---	---	0
8/29	111.6	111.8	111.9	24	116.6	116.8	117.1	24	114.0	114.2	114.4	24	113.3	113.6	113.9	24	---	---	---	0
8/30	111.1	111.4	111.9	24	116.5	116.8	117.0	24	113.6	114.0	114.2	24	113.7	114.4	115.1	24	---	---	---	0
8/31	109.3	110.0	110.5	24	116.0	116.3	116.6	24	110.9	111.8	113.0	24	113.8	114.1	114.3	24	---	---	---	0
9/1	107.2	107.6	108.0	24	107.3	108.0	113.5	24	108.2	108.5	109.4	24	108.7	109.4	113.0	24	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/19	109.4	109.9	110.6	24	116.6	117.0	117.2	24	104.3	104.9	105.6	24	113.0	113.4	113.7	24	107.1	107.6	108.2	24
8/20	110.1	110.8	111.4	24	116.6	116.9	117.2	24	106.3	107.0	108.0	24	112.8	113.3	113.9	24	108.2	108.4	108.5	24
8/21	110.0	110.3	111.0	24	116.5	116.8	117.2	24	108.2	108.5	109.0	24	113.7	114.2	114.9	24	109.2	109.4	109.7	24
8/22	109.8	110.3	110.8	24	116.5	116.7	116.9	24	107.3	107.6	108.1	24	113.6	114.0	114.5	24	108.1	108.8	109.3	24
8/23	108.1	108.3	108.5	24	116.4	116.9	117.6	24	106.7	107.2	107.6	24	113.6	114.1	114.5	24	107.4	107.8	108.7	24
8/24	107.9	108.0	108.2	24	116.9	117.4	118.8	24	107.7	108.2	108.7	24	114.0	114.5	115.0	24	109.2	109.7	110.5	24
8/25	108.4	109.2	110.0	24	116.9	117.3	117.8	24	107.5	107.8	108.1	24	114.3	114.7	115.2	24	109.4	109.7	110.2	24
8/26	110.8	111.3	112.4	24	117.4	118.2	119.3	24	107.3	107.5	108.1	23	113.7	114.1	115.0	23	109.2	109.3	109.7	23
8/27	112.2	112.6	113.0	24	117.0	117.3	117.6	24	107.1	107.3	107.6	24	113.8	114.5	115.2	24	109.0	109.3	109.7	24
8/28	111.8	112.4	113.6	24	116.9	117.4	117.7	24	107.3	108.0	108.5	24	114.1	114.6	115.2	24	108.7	109.0	109.2	24
8/29	110.1	110.3	110.7	24	115.9	116.6	117.0	24	107.6	107.8	108.1	24	114.0	114.2	114.5	24	107.3	108.2	108.5	24
8/30	109.2	109.6	109.9	24	115.9	116.4	116.7	24	106.5	106.8	107.3	24	113.7	114.1	114.6	24	105.2	105.4	105.6	24
8/31	105.4	106.4	107.8	24	115.7	116.0	116.3	24	104.6	105.0	105.6	24	114.1	115.1	115.1	24	104.1	104.2	104.4	24
9/1	103.0	103.3	103.7	24	104.1	105.3	114.6	24	103.0	103.4	103.6	24	103.6	104.0	106.2	24	104.4	105.2	105.8	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>Camas\Washougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/19	114.9	115.7	116.0	24	108.1	108.8	109.1	24	113.8	115.8	117.3	24	111.6	113.4	115.1	24	---	---	---	0
8/20	115.4	115.8	116.6	24	110.6	111.4	112.2	24	116.8	117.9	119.2	24	112.2	115.0	116.8	24	---	---	---	0
8/21	115.7	116.4	117.2	24	113.0	113.5	113.8	24	117.3	118.3	119.5	24	114.1	116.3	118.4	24	---	---	---	0
8/22	114.4	114.9	115.3	24	109.8	110.6	112.0	24	116.0	117.9	119.3	24	113.7	115.6	117.3	24	---	---	---	0
8/23	114.3	115.0	115.3	24	108.0	108.5	108.8	24	116.1	117.8	119.1	24	113.5	116.0	118.3	24	---	---	---	0
8/24	115.8	116.5	116.9	24	109.6	110.3	110.8	24	116.1	117.8	119.3	24	113.6	116.0	118.2	24	---	---	---	0
8/25	116.0	116.4	117.1	24	110.9	111.0	111.2	24	115.9	117.3	118.4	24	112.6	114.4	116.2	24	---	---	---	0
8/26	115.5	116.4	117.1	23	110.6	110.7	110.8	23	116.4	117.5	118.4	23	112.7	114.7	116.9	23	---	---	---	0
8/27	115.3	115.9	116.3	24	110.3	110.6	110.9	24	116.6	117.6	118.8	24	113.2	115.3	117.1	24	---	---	---	0
8/28	115.0	115.5	116.1	24	109.1	109.4	109.6	24	115.6	116.6	117.9	24	112.5	113.7	114.6	24	---	---	---	0
8/29	113.8	114.3	114.7	24	106.5	107.0	107.7	24	115.4	116.7	117.8	24	111.1	112.7	114.5	24	---	---	---	0
8/30	112.7	113.0	113.4	24	104.5	104.8	105.5	24	114.9	116.5	117.6	24	110.5	111.8	112.7	24	---	---	---	0
8/31	112.1	112.3	112.7	24	103.3	103.5	103.8	24	114.4	116.1	117.9	24	109.9	112.0	113.9	24	---	---	---	0
9/1	105.7	106.6	112.1	24	103.7	104.5	104.9	24	107.4	109.3	117.1	24	108.6	110.1	111.5	24	---	---	---	0

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)	
08/19/2011	---	---	---	---	0	0	4	0	0	0	0	16
08/20/2011	---	---	---	---	0	0	10	0	0	0	0	0
08/21/2011	---	---	---	---	0	0	6	0	0	0	0	0
08/22/2011	---	---	---	---	0	0	0	0	0	0	0	12
08/23/2011	---	---	---	---	0	0	2	0	0	0	0	0
08/24/2011	*	---	---	---	0	0	0	0	0	0	0	0
08/25/2011	---	---	---	---	0	0	2	0	0	0	0	0
08/26/2011	---	---	---	---	0	0	0	0	0	0	0	0
08/27/2011	*	---	---	---	0	3	2	0	0	0	---	---
08/28/2011	*	---	---	---	0	0	4	0	0	0	---	0
08/29/2011	*	---	---	---	0	0	5	0	0	0	---	---
08/30/2011	*	---	---	---	0	1	2	0	0	0	0	0
08/31/2011	*	---	---	---	0	0	0	0	0	0	---	---
09/01/2011	*	---	---	---	---	0	---	---	0	---	---	0
09/02/2011	*	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	0	4	37	0	0	0	0	28
# Days:	0	0	0	0	13	14	13	13	14	9	11	11
Average:	0	0	0	0	0	0	3	0	0	0	0	3
YTD	31,090	30,210	12,492	18,836	3,831,084	2,528,597	1,236,912	26,463	1,979,496	2,936,420	1,322,304	

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)	
08/19/2011	---	---	---	---	297	304	214	111	17,910	7,156	3,943	
08/20/2011	---	---	---	---	582	357	305	117	20,484	7,838	1,764	
08/21/2011	---	---	---	---	348	772	438	89	11,652	5,980	1,682	
08/22/2011	---	---	---	---	292	486	438	60	10,500	6,484	2,341	
08/23/2011	---	---	---	---	230	474	521	70	12,598	5,007	1,640	
08/24/2011	*	---	---	---	196	411	235	24	24,270	6,547	2,478	
08/25/2011	---	---	---	---	134	252	162	23	20,845	8,730	3,452	
08/26/2011	---	---	---	---	181	280	120	37	33,238	14,286	3,196	
08/27/2011	*	---	---	---	171	264	68	52	25,288	---	---	
08/28/2011	*	---	---	---	153	171	76	38	15,136	---	1,968	
08/29/2011	*	---	---	---	160	196	125	24	7,795	---	---	
08/30/2011	*	---	---	---	180	203	59	10	8,558	1,329	1,652	
08/31/2011	*	---	---	---	168	114	67	28	7,579	---	---	
09/01/2011	*	---	---	---	---	86	---	---	14,537	---	2,399	
09/02/2011	*	---	---	---	---	---	---	---	---	---	---	
Total:	0	0	0	0	3,092	4,370	2,828	683	230,390	63,357	26,515	
# Days:	0	0	0	0	13	14	13	13	14	9	11	
Average:	0	0	0	0	238	312	218	53	16,456	7,040	2,410	
YTD	9	38	12	163	1,157,441	1,359,572	369,191	31,133	5,682,972	3,289,127	5,187,544	

Two-Week Summary of Passage Indices

Date	COMBINED COHO										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/19/2011	---	---	---	---	4	17	12	0	0	0	0
08/20/2011	---	---	---	---	20	13	4	0	0	72	0
08/21/2011	---	---	---	---	11	16	2	0	0	0	0
08/22/2011	---	---	---	---	10	26	4	0	0	24	0
08/23/2011	---	---	---	---	6	13	4	0	0	0	25
08/24/2011 *	---	---	---	---	4	20	7	0	0	0	0
08/25/2011	---	---	---	---	10	19	5	0	0	0	0
08/26/2011	---	---	---	---	6	13	13	0	0	0	0
08/27/2011 *	---	---	---	---	10	6	0	0	0	---	---
08/28/2011 *	---	---	---	---	6	4	2	0	0	---	0
08/29/2011 *	---	---	---	---	5	9	9	0	0	---	---
08/30/2011 *	---	---	---	---	4	14	6	0	0	0	0
08/31/2011 *	---	---	---	---	4	6	0	0	0	---	---
09/01/2011 *	---	---	---	---	---	6	---	---	0	---	0
09/02/2011 *	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	100	182	68	0	0	96	25
# Days:	0	0	0	0	13	14	13	13	14	9	11
Average:	0	0	0	0	8	13	5	0	0	11	2
YTD	0	0	0	218	83,853	81,768	19,938	46,400	188,189	477,004	439,931

Date	COMBINED STEELHEAD										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/19/2011	---	---	---	---	0	0	4	0	0	0	0
08/20/2011	---	---	---	---	3	0	0	0	0	0	0
08/21/2011	---	---	---	---	2	0	0	1	0	0	0
08/22/2011	---	---	---	---	2	0	0	1	0	0	0
08/23/2011	---	---	---	---	0	3	0	0	0	0	0
08/24/2011 *	---	---	---	---	0	0	0	0	0	0	0
08/25/2011	---	---	---	---	0	0	0	1	0	0	0
08/26/2011	---	---	---	---	0	0	0	0	0	0	0
08/27/2011 *	---	---	---	---	0	3	0	0	0	---	---
08/28/2011 *	---	---	---	---	0	0	0	2	0	---	0
08/29/2011 *	---	---	---	---	0	7	0	0	0	---	---
08/30/2011 *	---	---	---	---	0	0	0	0	0	0	0
08/31/2011 *	---	---	---	---	0	0	0	0	0	---	---
09/01/2011 *	---	---	---	---	---	0	---	---	0	---	0
09/02/2011 *	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	7	13	4	5	0	0	0
# Days:	0	0	0	0	13	14	13	13	14	9	11
Average:	0	0	0	0	1	1	0	0	0	0	0
YTD	1,080	13,882	4,071	2,934	4,118,584	2,033,096	838,177	28,473	608,082	2,620,215	246,497

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/19/2011	---	---	---	---	4	1	0	2	248	24	0
08/20/2011	---	---	---	---	3	4	0	3	123	24	25
08/21/2011	---	---	---	---	2	1	0	4	124	24	0
08/22/2011	---	---	---	---	0	3	0	0	82	47	12
08/23/2011	---	---	---	---	0	4	0	3	0	96	0
08/24/2011	*	---	---	---	0	4	0	0	82	0	43
08/25/2011	---	---	---	---	0	0	0	3	0	72	19
08/26/2011	---	---	---	---	0	0	0	6	41	86	33
08/27/2011	*	---	---	---	0	0	0	1	0	---	---
08/28/2011	*	---	---	---	0	0	0	1	82	---	0
08/29/2011	*	---	---	---	0	0	0	3	41	---	---
08/30/2011	*	---	---	---	0	0	0	1	0	0	37
08/31/2011	*	---	---	---	0	1	0	1	0	---	---
09/01/2011	*	---	---	---	---	0	---	---	0	---	35
09/02/2011	*	---	---	---	---	---	---	---	---	---	---
<hr/>											
Total:	0	0	0	0	9	18	0	28	823	373	204
# Days:	0	0	0	0	13	14	13	13	14	9	11
Average:	0	0	0	0	1	1	0	2	59	41	19
YTD	0	0	1	0	119,347	44,441	31,325	18,763	325,680	364,010	114,112

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR [†] (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
08/19/2011	---	---	---	---	0	4	0	0	120	100	4
08/20/2011	---	---	---	---	0	0	0	1	120	34	0
08/21/2011	---	---	---	---	0	1	0	0	100	116	0
08/22/2011	---	---	---	---	0	9	0	0	40	100	0
08/23/2011	---	---	---	---	1	0	0	0	40	67	0
08/24/2011	*	---	---	---	3	1	0	0	120	67	12
08/25/2011	---	---	---	---	5	1	0	1	120	67	4
08/26/2011	---	---	---	---	1	0	1	0	40	133	20
08/27/2011	*	---	---	---	0	1	0	1	40	---	---
08/28/2011	*	---	---	---	0	1	0	0	40	---	0
08/29/2011	*	---	---	---	0	2	0	0	40	---	---
08/30/2011	*	---	---	---	0	0	0	0	10	0	7
08/31/2011	*	---	---	---	1	1	0	0	60	---	---
09/01/2011	*	---	---	---	---	1	---	---	20	---	8
09/02/2011	*	---	---	---	---	---	---	---	---	---	---
<hr/>											
Total:	0	0	0	0	11	22	1	3	910	684	55
# Days:	0	0	0	0	13	14	13	13	14	9	11
Average:	0	0	0	0	1	2	0	0	65	76	5
YTD	0	0	0	0	10,550	17,627	747	327	164,112	494,471	26,077

Two-Week Summary of Passage Indices

* 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, sockeye, and lamprey juveniles. Two classes of fish counts are shown in these tables:
Two classes of fish counts are shown in these tables:

Collection counts (Coll), which account for sample rates but are not adjusted for flow;

Passage indices (INDEX), 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.

Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, and pacific lamprey macrophthalmia.

† Caution should be used with interpreting lamprey juvenile collection counts at LGR because of the possibility that lamprey may escape the sample tank before being sampled

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 = $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts

Passage Index = $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts

Passage Index = $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts

Passage Index = $\text{Collection Counts} / \{ \text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$

MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts

Passage Index = $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts

Passage Index = $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

Passage Index = $\text{Collection Counts} / \{ \text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$

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:

9/2/11 10:05 AM

08/19/11 TO 09/02/11

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
LGR	Sum of NumberCollected	1,411			46	3	4	1,464
	Sum of NumberBarged	0			0	0	0	0
	Sum of NumberBypassed	0			0	2	0	2
	Sum of Numbertrucked	1,446			48	1	3	1,498
	Sum of SampleMorts	35			0	0	1	36
	Sum of FacilityMorts	0			0	0	0	0
	Sum of ResearchMorts	15			0	0	0	15
	Sum of TotalProjectMorts	50			0	0	1	51
LGS	Sum of NumberCollected	3,041		3	126	9	14	3,193
	Sum of NumberBarged	0		0	0	0	0	0
	Sum of NumberBypassed	1		0	0	0	0	1
	Sum of Numbertrucked	3,225		3	126	9	13	3,376
	Sum of SampleMorts	77		0	0	0	2	79
	Sum of FacilityMorts	30		0	0	0	0	30
	Sum of ResearchMorts	0		0	0	0	0	0
	Sum of TotalProjectMorts	107		0	0	0	2	109
LMN	Sum of NumberCollected	1,464		18	35	2		1,519
	Sum of NumberBarged	0		0	0	0		0
	Sum of NumberBypassed	13		0	0	2		15
	Sum of Numbertrucked	1,505		19	35	0		1,559
	Sum of SampleMorts	32		0	3	0		35
	Sum of FacilityMorts	0		0	0	0		0
	Sum of ResearchMorts	0		0	0	0		0
	Sum of TotalProjectMorts	32		0	3	0		35
MCN	Sum of NumberCollected	113,600					400	114,000
	Sum of NumberBarged	0					0	0
	Sum of NumberBypassed	0					0	0
	Sum of Numbertrucked	115,126					409	115,535
	Sum of SampleMorts	29					0	29
	Sum of FacilityMorts	664					1	665
	Sum of ResearchMorts	0					0	0
	Sum of TotalProjectMorts	693					1	694
Total Sum of NumberCollected		119,516		21	207	14	418	120,176
Total Sum of NumberBarged		0		0	0	0	0	0
Total Sum of NumberBypassed		14		0	0	4	0	18
Total Sum of Numbertrucked		121,302		22	209	10	425	121,968
Total Sum of SampleMorts		173		0	3	0	3	179
Total Sum of FacilityMorts		694		0	0	0	1	695
Total Sum of ResearchMorts		15		0	0	0	0	15
Total Sum of TotalProjectMorts		882		0	3	0	4	889

YTD Transportation Summary

Source: Fish Passage Center

Updated:

9/2/11 10:05 AM

TO: 09/02/11

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	727,585	2,716,906	54,622	78,049	2,713,301	6,290,463
	Sum of NumberBarged	641,690	1,705,111	40,040	35,412	1,437,012	3,859,265
	Sum of NumberBypassed	81,889	1,009,672	14,509	42,055	1,275,911	2,424,036
	Sum of NumberTrucked	1,635	0	50	5	2	1,692
	Sum of SampleMorts	292	101	2	73	41	509
	Sum of FacilityMorts	2,049	1,781	21	504	272	4,627
	Sum of ResearchMorts	30	241	0	0	58	329
	Sum of TotalProjectMorts	2,371	2,123	23	577	371	5,465
LGS	Sum of NumberCollected	733,039	1,449,327	41,490	24,285	1,132,408	3,380,549
	Sum of NumberBarged	725,204	1,344,369	40,927	18,893	893,350	3,022,743
	Sum of NumberBypassed	93	103,168	401	5,227	238,633	347,522
	Sum of NumberTrucked	3,647	3	139	15	11	3,815
	Sum of SampleMorts	385	52	1	14	10	462
	Sum of FacilityMorts	3,324	1,735	2	133	403	5,597
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	3,709	1,787	3	147	413	6,059
LMN	Sum of NumberCollected	248,540	854,184	13,214	21,051	565,777	1,702,766
	Sum of NumberBarged	236,788	636,755	12,003	18,832	459,659	1,364,037
	Sum of NumberBypassed	8,569	215,901	1,254	1,964	103,439	331,127
	Sum of NumberTrucked	1,712	23	40	2	0	1,777
	Sum of SampleMorts	93	3	6	0	5	107
	Sum of FacilityMorts	1,378	1,499	13	253	872	4,015
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,471	1,502	19	253	877	4,122
MCN	Sum of NumberCollected	2,344,477	952,682	71,790	136,544	295,989	3,801,482
	Sum of NumberBarged	1,060,689	24	260	2,793	108	1,063,874
	Sum of NumberBypassed	975,593	949,771	71,277	132,464	295,663	2,424,768
	Sum of NumberTrucked	257,524	9	75	872	0	258,480
	Sum of SampleMorts	807	187	8	41	13	1,056
	Sum of FacilityMorts	41,132	2,691	170	374	205	44,572
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	41,939	2,878	178	415	218	45,628
Total Sum of NumberCollected		4,053,641	5,973,099	181,116	259,929	4,707,475	15,175,260
Total Sum of NumberBarged		2,664,371	3,686,259	93,230	75,930	2,790,129	9,309,919
Total Sum of NumberBypassed		1,066,144	2,278,512	87,441	181,710	1,913,646	5,527,453
Total Sum of NumberTrucked		264,518	35	304	894	13	265,764
Total Sum of SampleMorts		1,577	343	17	128	69	2,134
Total Sum of FacilityMorts		47,883	7,706	206	1,264	1,752	58,811
Total Sum of ResearchMorts		30	241	0	0	58	329
Total Sum of TotalProjectMorts		49,490	8,290	223	1,392	1,879	61,274

Cumulative Adult Passage at Mainstem Dams Through: 09/01

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	09/01	167097	50945	244384	12612	174444	16431	108279	51451	97604	15603	89217	13568	62602	11871	106211	12282	98479	11541
TDA	09/01	124164	40146	189839	11546	130174	13470	81127	39844	81292	12528	78252	10628	30968	7447	44286	6820	40657	6193
JDA	09/01	103401	39823	179446	11794	110572	12004	74073	34571	70955	12475	71151	11642	18576	5471	27656	5342	23470	4887
MCN	09/01	101245	31750	153500	9185	102003	11175	74621	28165	66526	8063	67398	9237	13807	2939	16245	2124	13071	2592
IHR	09/01	69306	18161	101188	6047	70295	6879	26758	12378	29583	3503	17776	3412	4445	825	5658	1087	2589	782
LMN	09/01	69832	18094	97334	5898	69566	5561	31176	13730	35097	4362	18759	3055	3261	610	3425	638	1797	678
LGS	09/01	67321	23492	92985	5461	64800	6145	42211	18214	32410	3968	15770	3504	3327	488	1498	249	1097	235
LGR	09/01	59342	22063	94203	6409	65342	7745	36764	16425	28778	5294	14778	4385	2338	376	1383	346	720	218
PRD	08/31	15246	6030	30539	932	20141	818	50865	4223	49265	1217	58614	2426	4503	1218	2196	538	3698	1087
RIS	08/31	13089	8394	29684	1513	17327	1572	44432	14299	47220	4018	55301	5331	2604	1707	1445	716	2082	669
RRH	08/31	6989	3491	8660	523	6536	525	38861	8131	34173	1724	42074	4056	2415	1102	1327	241	1722	428
WEL	08/31	4153	3969	7596	661	5414	510	29491	8443	27052	1898	31529	2157	203	139	160	239	403	122
WFA	08/28	43748	1399	65293	1758	51657	1104	-	-	-	-	-	-	96	19	74	5	104	9

DAM	Coho						Sockeye			Steelhead			Wild 2011
	2011		2010		10-Yr Avg.		2011	2010	10-Yr Avg.	2011	2010	10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	15270	721	8360	652	15061	941	185796	386519	123898	283169	330990	301794	106836
TDA	3007	686	1113	204	1654	323	138286	325129	105743	188511	175627	130549	76208
JDA	1876	416	385	66	821	224	143135	324116	110247	129613	121581	98438	53729
MCN	920	167	84	11	159	34	113937	278802	91599	117754	99159	66704	44099
IHR	35	9	1	0	3	0	1140	1302	280	71604	62870	37460	20692
LMN	7	3	0	0	0	0	1394	1654	349	60523	53321	31994	19594
LGS	7	4	0	0	0	0	1435	1655	335	45403	33288	20159	16443
LGR	0	0	0	0	0	0	1500	2174	427	42395	38264	22549	16447
PRD	77	36	0	0	36	2	145070	357056	115341	11171	16882	9774	0
RIS	8	0	0	1	1	1	146099	338291	111632	9076	13152	8051	4739
RRH	0	0	0	0	1	0	132089	295609	88137	6452	9981	5948	3234
WEL	0	0	0	0	0	0	111495	291721	88313	3643	5738	3629	1682
WFA	75	140	84	83	15	15	-	-	-	27407	31856	28272	-

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: 09/02/11

BON counts from January 1, 2011 to March 14, 2011 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2011	49	1	1,419	600
2010	39	0	2,318	657