



Fish Passage Center

Weekly Report #13 - 23

August 23, 2013

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Summary of Events:

Water Supply

Precipitation throughout the Columbia Basin has varied over August, ranging between 19% and 95% of average at individual sub-basins. Precipitation above The Dalles has been 67% of average over August. Over the 2013 water year, precipitation has ranged between 66% and 103% 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 2013 August 1–21, 2013		Water Year 2013 October 1, 2012 to August 21, 2013	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	1.30	82	34.0	95
Snake River above Ice Harbor	0.21	34	15.1	70
Columbia above The Dalles	0.62	67	21.6	82
Kootenai	1.63	93	38.0	103
Clark Fork	0.67	60	19.3	73
Flathead	1.21	95	32.7	95
Pend Oreille Basin	0.96	81	26.7	85
Snake Basin above Hells Canyon	0.09	19	11.9	68
Salmon River Basin	0.27	30	18.1	66
Clearwater	0.70	68	32.4	82
Willamette River above Portland	0.21	27	55.3	89

Grand Coulee Reservoir is at 1280.2 feet (8-21-13) and has drafted 1.6 feet over the last week. Outflows at Grand Coulee have ranged between 96.1

and 132.3 Kcfs over the last week. The end of August draft elevation at Grand Coulee is 1278 feet, with an additional 0.3 ft draft as part of the Lake Roosevelt Incremental Storage Release Program.

The Libby Reservoir is currently at elevation 2450.6 feet (8-21-13) and has drafted 1.5 feet last week. Outflows at Libby Dam have been 14.0 Kcfs last week. At the 8-20-13 Technical Management Team (TMT) meeting, the COE stated they planned to reduce out-flows to 8 Kcfs early next week until reaching elevation 2449 ft, after which flows will be reduced to 6 Kcfs through September. The end of September target elevation at Libby is 2449 feet.

Hungry Horse is currently at an elevation of 3554.8 feet (8-21-13) and has drafted 0.8 feet over the last week. Outflows at Hungry Horse have been 2.2–2.5 Kcfs last week. The end of September draft limit is 3550 feet at Hungry Horse.

Dworshak is currently at an elevation of 1544.5 feet (8-21-13) and has drafted 6.1 feet last week. Outflows from Dworshak have been 8.1 Kcfs over most of the last week and were reduced to 7.4 Kcfs on August 22, 2013. The August 31st, 2013, draft target at Dworshak is 1535 feet.

The flow objective at Lower Granite over the summer period (June 21st to August 31st) is 50 Kcfs; over the summer period flows at Lower Granite have averaged 31.4 Kcfs and 20.4 Kcfs over the last week.

The flow objective at McNary over the summer period (July 1st to August 31st) is 200 Kcfs; over the summer period flows at McNary have averaged 192.7 Kcfs and over the last week have averaged 155.9 Kcfs.

Spill

Summer Spill began on June 20th at the lower Snake River projects and will extend through August 31st.

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

Flow in the Snake River has ranged from 18.1 to 22.4 Kcfs over the past week. This means that at times spill levels are likely going to be below the Court-ordered amounts due to low flows and required powerhouse minimum flows at the Snake River projects.

Overall, spill at Lower Granite Dam was greater than the Court-ordered spill levels for most of the week due to repairs being made to the powerhouse roof. During these repairs, daytime spill is all flow in excess of the 5 Kcfs needed to provide station service while nighttime spill is all flow in excess of powerhouse minimum. Unusual low river flows at Snake River projects have caused changes to spill operations at Little Goose, Lower Monumental, and Ice Harbor Dams over the last several days. At Ice Harbor and Lower Monumental Dams, the COE could not maintain RSW spill along with minimum generation flows without causing the projects to draft below Minimum Operating Pool. At these projects, the COE has coordinated modified spill patterns through the TMT process (8-21-13 TMT Meeting) that do not utilize the RSWs, but instead primarily attempt to focus limited spill to provide attraction for adult fish passage. At Little Goose, Lower Monumental, and Ice Harbor dams spill levels will be the difference between project inflows and the amount of water needed to provide minimum generation through the powerhouses.

Summer spill for fish passage at the Lower Columbia projects began on July 1st, except at McNary Dam where summer spill began on June 20th and Bonneville Dam where summer spill began on June 16th. Spill will continue through August 31st.

Project	Summer Spill Level Day/Night
McNary	50%/50%
John Day	July 20–August 31: 30%/30%
The Dalles	40%/40%
Bonneville	July 21–August 31: 75 Kcfs/Gas Cap

All the middle Columbia River dams met the Court-ordered summer spill levels described in the table.

Excess spill for roof repairs at Lower Granite Dam led to TDG exceedences in both the tailrace and Little Goose forebay over the past week. Due to low fish numbers, gas bubble trauma monitoring at Snake River sites has been suspended for the 2013 season. However, based on historic data collected since 1995 from the gas bubble trauma (GBT) monitoring program, we would not expect to see fish exhibit signs of GBT at the present TDG levels. Finally, GBT monitoring at McNary, Bonneville, and Rock Island dams continued this week. No fish were detected with signs of GBT at these sites this week.

Smolt Monitoring

Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, and LGR). There are currently no SMP traps under operation.

Subyearling Chinook continued to be the dominant species of salmonid at all SMP dams over the past week. Passage of subyearlings decreased this week at all SMP sites. Although subyearling Chinook dominated the collections, most of the SMP sites continue to collect a few spring migrants.

High temperature sampling protocols were in effect this week at BON. Under these high temperature sampling protocols, daily index sampling occurred every other day. All fish were bypassed on non-sample days. Passage of subyearling Chinook decreased this week, when compared to last week. This week’s daily average passage index for subyearling Chinook was about 2,150 per day. Last week’s daily average passage index for subyearling Chinook was just about 3,500 per day. Sockeye were the only spring migrants that were collected this week. In addition, no pacific lamprey

juveniles were collected at BON this week. The high temperature sampling protocols will remain in effect until temperatures decrease to safer levels.

High temperature sampling protocols were in effect this week at JDA. Under these high temperature sampling protocols, the SMP crew at JDA samples only twice a week, for condition only. It is important to note that sampling under the higher temperature protocols at JDA results in bias collection estimates, as sampling is not for the full 24-hours. Therefore, it is not appropriate to compare passage index estimates during this period to those from previous weeks. Subyearling Chinook dominated the bypass samples at JDA this week. The only other species of salmonid that was collected in this week's samples was sockeye. Finally, only Pacific lamprey macrophthalmia were collected in this week's samples. The high temperature sampling protocols will continue until temperatures decrease to safer levels.

Sampling at MCN for the 2013 season is every-other-day. Subyearling Chinook continued to dominate the bypass sample at MCN this week. This week's daily average passage index for subyearling Chinook at MCN was nearly 7,300 per day. This represents a decrease over last week's daily average passage index, which was nearly 11,000 per day. The only spring migrants that were collected at MCN this week were sockeye. This week's daily average passage index for sockeye was 27 per day, which is a decrease from last week's daily average passage index of about 67 per day. Pacific lamprey macrophthalmia continue to be the only species and life-stage of lamprey collected at MCN this season. There was a large increase in Pacific lamprey macrophthalmia collections this week, when compared to the previous week. This week's daily average collection for Pacific lamprey macrophthalmia was about 3,240 per day. Last week's daily average collection was only about 40 per day.

Subyearling Chinook passage at LGR for this week was very similar to last week. This week's daily average passage index for subyearling Chinook was about 660 per day. Last week's daily average passage index was about 640 per day. Very few spring migrants were collected at LGR this week. Finally, one Pacific lamprey ammocoete and two Pacific lamprey

macrophthalmia were collected at LGR this week. Due to the possible resampling of PIT-tagged research fish that were released into the gatewells, the estimated year-to-date collection and passage index totals for yearling Chinook, steelhead, subyearling Chinook, and Pacific lamprey macrophthalmia are likely inflated. The FPC is aware of this possible bias and is investigating ways to correct these inflated estimates after the season has ended. However, the magnitude of this bias is relatively low and is unlikely to skew estimates of timing for this species.

Subyearling Chinook passage at LGS decreased this week, when compared to last week. This week's daily average passage index for subyearling Chinook at LGS was about 630 per day. Last week's daily average passage index was about 760 per day. Sockeye and steelhead were the only spring migrants that were collected in this week's samples. However, sockeye and steelhead collections were extremely low this week. Finally, both Pacific lamprey ammocoetes and macrophthalmia were collected at LGS this week. One ammocoete was collected on August 21st while macrophthalmia were collected every day this week. The daily average collection for Pacific macrophthalmia this week was six per day.

Due to high levels of Columnaris and elevated mortalities, Lower Monumental Dam went to primary bypass on the afternoon of August 14th. From this time to the morning of August 21st, sampling at LMN was limited to about four hours, every third day, for condition only. All fish collected during these limited samples were bypassed instead of transported. In addition, primary bypass was used during non-sample periods. Due to lower levels of Columnaris over the past few condition samples, normal sampling was resumed at 0945 on August 21st and every-other-day trucking was implemented. Normal operations and every-other-day trucking are expected to continue until the 2013 season is completed. Over the past week, subyearling Chinook have dominated the sample at LMN. In fact, no other species of salmonids, or lamprey juveniles, were collected in this week's samples. Given the limited sampling this week, it is not possible to compare this week's passage numbers to previous weeks.

Passage of subyearling Chinook at RIS decreased this week, when compared to the previous week. The daily average passage index for subyearling Chinook at RIS this week was about 46 per day. For the previous week, the daily average passage index for subyearling Chinook was about 108 per day. Passage of sockeye and steelhead continued to be extremely low this week. Finally, only one pacific lamprey macropthalmia was collected this week (August 19th).

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 new releases of juvenile salmonids scheduled for this zone this week. In addition, there are no new releases 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. No new releases of juvenile salmonids were scheduled to begin in this zone this week. There are also no releases of juvenile salmonids in this zone over the next two weeks.

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

Adult Fish Passage

Daily adult fall Chinook passage numbers at Bonneville Dam ranged between 1,326 and 7,650 last week. The adult fall Chinook count of 48,817 is about 2.9 times greater than the 2012 count of 17,011 and about 2.7 times greater than the 10-year average count of 17,803. The 2013 Bonneville Dam fall Chinook jack count of 7,514 is about 1.7 times greater than the 2012 count of 4,394 and about 2.2 times greater than the 10-year average count of 3,376. The 2013 McNary Dam adult fall Chinook count of 8,477 is about 1.8

times greater than the 2012 count and 2.4 times larger than the 10-year average. The 2013 McNary Dam jack count of 1,594 is about 1.8 times greater than the 2012 count and 2.1 times greater than the 10-year average count.

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 resume 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 2013 A-run adult steelhead count at Bonneville of 158,283 is about 1.05 times greater than the 2012 count of 149,581, while being 70.7% of the 10-year average count of 223,900.

The 2013 Bonneville Dam adult steelhead count of 161,677 has 6,192 more fish than the 2012 count of 155,485 and is about 70.5% of the 10-year average count of 229,836. The 2013 Bonneville Dam adult wild steelhead count of 76,756 is about 1.2 times greater than the 2012 count of 61,832, while having 4,133 fewer fish than the 10-year average count of 80,889. In the Snake River, this year's Lower Granite steelhead count of 11,167 has 220 fewer fish than the 2012 count and is about 61.7% of the 10-year average count of 18,088. The 2013 Lower Granite Dam adult wild steelhead count of 5,307 has 165 more fish than the 2012 count, while being 83.5% of the 10-year average count of 6,353. At Willamette Falls, the 2013 count for steelhead was 17,271 as of August 6th. This year's steelhead count is about 55.5% of the 2012 count of 31,107 and about 68.2% of the 10-year average count of 25,329.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 1 and 6 last week. The 2013 adult sockeye count at Bonneville Dam of 185,494 is about 36% of the 2012 count of 515,666, while being 1.04 times greater than the 10-year average

count of 177,590. Two of the major spawning sites for sockeye in the Upper Columbia River zone are Lake Wenatchee and Lake Osoyoos (Okanogan basin). The 2013 McNary Dam adult sockeye count of 134,169 is about 36.8% of the 2012 count of 364,133, while being 1.07 times greater than the 10-year average count of 125,774. The Lower Granite Dam 2013 adult sockeye count of 735 is about 1.6 times greater than the 2012 count of 453 and about 1.2 times greater than the 10-year average count of 613.

The 2013 Bonneville Dam adult coho count of 529 is about 70.3% of the 2012 count of 752 and about 32.6% of the 10-year average count of 1,621. The 2013 Bonneville Dam coho jack count of 80 is about 45.7% of the 2012 count of 175 and about 37% of the 10-year average count of 216. As of August 22nd at Bonneville Dam, the adult shad count was 3,751,256. This year's shad count is about 1.5 times greater than the 2012 count of 2,432,201 and about 1.3 times greater than the 10-year average count of 2,863,492.

Hatchery Releases Last Two Weeks

Hatchery Release Summary
From: 8/9/2013 to 08/22/13

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
No Releases Scheduled									

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 8/23/2013 to 9/5/2013

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
No Releases Scheduled									

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
08/09/2013	111.3	0.2	118.6	0.0	117.2	8.9	118.9	11.1	123.0	24.3	136.0	26.3	131.7	26.5
08/10/2013	103.2	0.2	101.3	0.0	103.7	7.7	101.6	9.3	102.3	20.9	110.8	19.8	108.9	27.6
08/11/2013	100.5	0.2	103.1	0.0	103.9	8.5	103.0	8.9	107.0	20.3	107.1	20.0	102.9	28.2
08/12/2013	105.1	0.2	104.6	0.0	114.5	8.2	118.3	11.7	122.3	25.6	132.5	27.1	132.9	26.6
08/13/2013	120.8	0.1	122.7	0.0	120.4	9.2	119.2	11.2	118.9	25.5	124.7	19.4	124.6	26.4
08/14/2013	118.8	0.1	121.5	0.0	118.8	9.5	119.6	11.4	121.9	25.6	130.0	25.0	124.0	27.5
08/15/2013	124.3	0.1	127.0	0.0	132.0	9.8	135.7	11.2	134.7	25.5	138.5	46.3	138.0	27.0
08/16/2013	132.3	0.1	130.9	0.0	134.1	9.0	129.9	15.6	131.7	25.9	141.1	39.5	141.5	26.3
08/17/2013	96.1	0.1	103.7	0.0	107.1	7.7	109.4	9.4	112.2	21.2	130.3	19.7	127.4	26.5
08/18/2013	96.1	0.1	99.9	0.0	103.5	7.7	101.6	9.0	104.2	20.2	116.4	19.2	112.9	26.2
08/19/2013	109.6	0.1	107.1	0.0	107.9	9.1	104.1	11.2	106.3	0.0	115.8	18.6	114.5	26.4
08/20/2013	119.1	0.1	118.2	0.0	123.7	0.0	128.2	10.8	130.6	0.0	123.2	19.1	121.5	26.1
08/21/2013	109.8	0.1	114.6	0.0	119.7	0.0	124.5	10.6	126.4	0.0	130.3	19.7	128.8	25.3
08/22/2013	110.8	0.1	110.7	0.0	111.6	0.0	112.2	0.0	116.6	0.0	125.7	8.0	123.3	23.9

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/09/2013	10.0	0.0	---	---	24.1	12.6	25.3	7.5	25.4	13.0	27.2	17.1
08/10/2013	10.0	0.0	---	---	23.8	15.9	25.0	7.5	25.3	12.8	24.3	14.0
08/11/2013	10.1	0.0	---	---	21.6	12.4	22.5	7.5	22.4	9.9	23.3	13.3
08/12/2013	10.1	0.0	---	---	22.0	14.7	24.2	7.5	24.1	11.7	24.0	14.1
08/13/2013	8.0	0.0	---	---	21.7	16.0	24.9	7.5	26.7	14.2	28.1	17.6
08/14/2013	8.1	0.0	---	---	21.4	16.1	22.6	7.4	22.6	10.0	21.7	11.1
08/15/2013	8.1	0.0	---	---	21.3	16.0	23.1	7.5	22.5	10.1	22.2	11.7
08/16/2013	8.1	0.0	---	---	21.4	15.8	22.3	7.5	22.5	10.1	22.2	11.7
08/17/2013	8.1	0.0	---	---	22.4	14.0	24.2	7.5	22.5	10.1	22.2	11.7
08/18/2013	8.2	0.0	---	---	19.4	7.1	20.4	7.5	23.0	10.7	24.6	14.0
08/19/2013	8.1	0.0	---	---	19.6	10.6	21.6	7.5	20.1	9.7	19.0	8.6
08/20/2013	8.1	0.0	---	---	18.8	10.1	21.0	6.1	21.8	10.8	22.2	12.1
08/21/2013	8.1	0.0	---	---	19.7	11.1	18.9	5.6	19.2	8.2	19.4	9.2
08/22/2013	7.4	0.0	---	---	18.1	9.8	20.3	8.1	19.9	9.4	18.2	7.6

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
08/09/2013	175.9	88.1	160.0	47.8	142.7	56.9	147.8	88.9	0.0	46.5
08/10/2013	154.0	77.0	147.2	44.1	136.0	54.4	152.8	89.2	0.0	51.2
08/11/2013	129.6	64.8	113.3	34.0	101.2	40.8	134.7	88.5	0.0	33.7
08/12/2013	159.8	80.1	152.5	45.8	139.9	55.8	141.1	88.8	0.0	40.0
08/13/2013	174.5	87.4	167.0	50.0	156.4	62.4	165.8	88.9	#VALUE!	---
08/14/2013	161.7	81.1	165.3	49.7	153.8	61.5	172.4	89.1	2.1	68.8
08/15/2013	156.2	78.3	141.3	42.3	130.7	52.4	149.6	89.9	0.0	47.3
08/16/2013	170.2	85.1	163.2	48.6	147.1	59.0	153.5	91.3	0.0	49.7
08/17/2013	159.8	80.2	151.7	45.3	141.6	56.8	152.5	91.8	0.0	48.3
08/18/2013	155.6	77.8	133.8	40.1	124.5	49.5	140.6	91.8	0.0	36.4
08/19/2013	146.2	73.1	142.3	42.6	128.5	51.1	145.5	91.6	0.0	41.6
08/20/2013	147.0	73.6	145.2	43.5	136.0	54.4	151.3	91.7	0.0	47.2
08/21/2013	156.0	78.3	146.4	43.7	132.2	52.8	147.5	91.8	0.0	43.2
08/22/2013	158.7	79.4	148.7	44.4	128.3	51.1	152.4	91.2	0.0	48.8

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
Lower Granite Dam											
Little Goose Dam											
Lower Monumental Dam											
McNary Dam											
	08/12/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/14/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/18/13	Chinook + Steelhead	87	0	0	0.00%	0.00%	0	0	0	0
	08/22/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	08/10/13	Chinook + Steelhead	41	0	0	0.00%	0.00%	0	0	0	0
	08/14/13	Chinook + Steelhead	71	0	0	0.00%	0.00%	0	0	0	0
	08/18/13	Chinook + Steelhead	97	0	0	0.00%	0.00%	0	0	0	0
	08/20/13	Chinook + Steelhead	31	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	08/18/13	Chinook + Steelhead	44	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>				
8/9	105.9	106.4	106.9	24	---	---	---	0	110.3	110.6	111.0	24	109.0	109.3	109.6	24	110.1	110.6	110.9	24
8/10	105.8	106.2	106.8	24	---	---	---	0	109.3	109.8	110.4	24	108.7	109.0	109.3	24	109.7	110.1	110.4	24
8/11	106.0	106.3	106.8	24	---	---	---	0	109.0	109.2	109.5	24	108.6	109.2	109.4	24	109.0	109.3	109.6	24
8/12	106.0	106.3	106.7	24	---	---	---	0	108.3	108.5	109.0	24	108.4	108.9	109.2	24	109.1	109.4	109.7	24
8/13	106.3	106.8	107.0	24	---	---	---	0	108.3	108.7	114.0	24	108.1	108.7	110.1	24	109.0	109.3	109.6	24
8/14	106.5	106.8	107.3	24	---	---	---	0	107.7	107.9	108.3	24	107.7	108.2	108.6	24	108.9	109.2	109.5	24
8/15	106.7	107.1	107.6	24	---	---	---	0	107.3	107.5	108.0	24	107.3	107.6	107.8	24	108.5	108.7	108.9	24
8/16	106.7	106.9	107.0	24	---	---	---	0	106.8	107.0	107.3	24	106.7	106.9	107.0	24	107.6	107.8	108.0	24
8/17	105.9	106.2	106.5	24	---	---	---	0	106.4	106.6	106.9	24	106.3	106.7	107.2	24	107.2	107.6	107.9	24
8/18	105.8	106.3	106.7	24	---	---	---	0	106.1	106.4	106.8	24	106.0	106.3	106.7	24	106.8	107.1	107.3	24
8/19	106.0	106.3	106.8	24	---	---	---	0	105.9	106.2	106.3	24	106.0	106.4	106.7	24	107.0	107.4	107.6	24
8/20	106.4	106.7	107.0	24	---	---	---	0	105.5	105.6	106.1	24	105.5	105.9	106.3	24	107.0	107.4	107.7	24
8/21	106.0	106.3	107.0	24	---	---	---	0	105.4	105.7	105.9	24	105.3	105.7	106.0	24	106.9	107.2	107.4	24
8/22	105.9	106.2	106.6	23	---	---	---	0	106.0	106.1	106.2	23	105.3	105.9	106.3	23	106.6	107.1	107.3	23

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>				
8/9	110.3	110.7	111.6	24	110.3	110.7	111.1	21	112.0	112.6	113.3	21	111.5	111.9	112.1	24	113.7	115.0	115.9	24
8/10	109.9	110.3	111.6	24	110.1	110.7	111.4	24	111.5	112.3	113.0	24	111.0	111.3	111.8	24	112.8	113.6	114.3	24
8/11	109.0	109.2	109.7	24	109.2	109.2	110.4	11	111.0	111.0	111.6	10	110.5	110.8	111.4	24	112.3	113.0	113.5	24
8/12	109.2	109.6	110.3	24	108.4	108.4	109.7	11	111.0	111.0	111.9	11	109.8	110.2	110.4	24	112.8	114.0	115.2	24
8/13	108.9	109.3	109.7	24	109.0	109.0	110.0	8	110.9	110.9	111.1	4	109.9	110.1	110.3	24	113.0	114.0	115.1	24
8/14	108.8	109.3	110.0	24	109.2	109.1	110.3	8	---	---	---	0	109.9	110.2	110.5	24	113.2	114.2	115.2	24
8/15	108.4	108.7	109.7	24	108.5	108.7	109.0	16	110.4	110.5	111.0	13	110.0	110.2	110.4	22	113.2	114.1	115.3	22
8/16	107.5	107.8	108.4	24	107.6	107.9	108.3	21	109.7	110.3	110.9	21	109.3	109.4	109.7	24	113.2	114.7	117.7	24
8/17	107.5	107.9	108.9	24	107.1	107.4	108.0	16	109.0	109.3	110.2	16	108.6	108.8	109.1	24	111.5	112.4	113.4	24
8/18	107.0	107.4	108.0	24	106.5	106.9	107.6	17	108.3	108.7	109.8	17	108.1	108.3	108.5	24	110.9	111.9	113.2	24
8/19	106.7	107.0	107.3	24	106.1	106.7	107.1	24	108.0	108.7	109.3	24	107.4	107.6	108.0	24	111.1	112.0	112.8	24
8/20	106.9	107.5	108.3	24	106.0	106.5	107.4	20	106.6	107.1	107.9	20	106.6	106.7	106.9	24	111.2	112.0	113.0	24
8/21	106.7	107.0	107.3	24	106.7	107.4	108.5	21	106.8	107.7	109.0	21	106.5	106.8	106.9	24	111.1	112.0	113.0	24
8/22	106.8	107.1	107.8	23	107.5	107.8	108.9	16	107.7	108.1	109.2	16	106.5	106.7	106.8	23	106.3	106.8	110.0	23

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>				
8/9	110.8	111.4	112.0	24	115.9	117.0	118.9	24	113.2	114.7	115.8	24	---	---	---	0	112.6	113.8	114.9	24
8/10	110.8	111.2	111.9	24	115.4	116.2	118.8	24	111.9	113.0	114.0	24	---	---	---	0	111.2	112.3	113.6	24
8/11	109.8	110.2	110.6	24	114.5	115.0	116.4	24	110.5	112.2	113.0	24	---	---	---	0	111.1	112.0	112.8	24
8/12	109.5	110.2	110.6	24	114.7	115.8	116.5	24	111.4	112.4	113.2	24	---	---	---	0	111.6	112.3	112.7	24
8/13	109.4	110.4	110.8	24	115.0	116.1	117.6	24	110.0	110.7	111.0	24	112.3	112.4	113.3	16	111.3	111.9	112.6	24
8/14	109.5	110.3	110.5	24	114.9	115.8	117.7	24	110.7	111.7	113.2	24	112.5	112.8	113.3	24	110.9	111.3	112.6	24
8/15	109.6	109.9	110.1	22	114.5	115.0	115.5	22	109.7	110.2	111.0	24	114.8	116.9	119.0	24	110.6	111.6	113.5	24
8/16	109.6	110.3	111.7	24	114.7	115.7	117.3	24	109.7	110.0	110.5	24	113.3	113.9	116.3	24	112.7	113.8	114.4	24
8/17	108.6	109.3	110.7	24	113.5	114.2	116.5	24	109.5	109.8	110.0	24	112.2	112.4	112.7	24	110.5	111.2	112.1	24
8/18	108.1	108.6	108.9	24	113.0	113.9	116.4	24	108.3	108.8	109.1	24	111.8	112.2	114.3	24	109.2	109.6	110.2	24
8/19	107.6	108.1	108.7	24	108.1	108.8	113.0	24	108.2	108.6	108.8	24	111.7	111.9	112.3	24	108.0	108.4	109.5	24
8/20	107.1	107.7	108.0	24	107.5	108.1	108.6	24	108.1	108.7	109.4	24	111.1	111.7	112.8	24	108.5	108.9	109.9	24
8/21	106.8	107.5	107.9	24	107.1	107.9	108.7	24	108.4	108.9	109.6	24	110.9	111.1	111.3	24	108.7	109.3	110.1	24
8/22	106.7	107.0	107.9	23	106.8	107.1	108.3	23	---	---	---	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>Clrwr-Peck</u>			#	<u>Anatone</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/9	115.0	115.8	116.7	24	---	---	---	0	100.6	101.0	101.4	24	102.3	103.2	104.4	22	101.4	102.4	103.8	24
8/10	113.6	114.3	114.9	24	---	---	---	0	100.7	101.0	101.3	24	102.3	103.4	104.2	24	101.6	102.8	103.9	24
8/11	113.4	114.2	114.6	24	---	---	---	0	100.4	100.7	101.1	24	102.0	102.9	104.0	24	101.2	102.2	103.6	24
8/12	113.9	114.3	114.6	24	---	---	---	0	100.4	100.7	101.1	24	102.1	103.2	104.3	24	101.5	102.8	104.3	24
8/13	113.8	114.2	114.5	24	---	---	---	0	100.9	101.3	101.7	24	102.6	103.8	104.9	24	101.8	103.1	104.4	23
8/14	113.6	114.0	114.5	24	---	---	---	0	101.2	101.7	102.0	24	102.9	104.2	105.3	24	102.1	103.4	104.8	24
8/15	113.1	113.4	113.7	24	---	---	---	0	101.2	101.5	101.8	24	102.9	104.0	105.2	23	101.9	103.3	104.7	24
8/16	114.6	115.1	115.6	24	---	---	---	0	100.9	101.3	101.6	24	102.7	104.0	105.2	24	101.6	102.9	104.3	24
8/17	113.7	114.2	114.6	24	---	---	---	0	100.8	101.2	101.7	24	102.6	103.8	105.1	24	101.7	103.1	104.4	24
8/18	112.6	112.9	113.5	24	---	---	---	0	100.6	100.8	101.3	24	102.4	103.5	104.8	24	101.6	103.1	104.5	24
8/19	112.2	112.5	112.9	24	---	---	---	0	100.7	101.1	101.6	24	102.4	103.7	104.8	24	101.7	103.1	104.5	24
8/20	112.0	112.4	112.9	24	---	---	---	0	100.6	100.9	101.3	24	102.2	103.4	104.5	24	101.5	102.9	104.2	24
8/21	112.6	113.0	113.3	24	---	---	---	0	100.4	100.8	101.2	24	102.0	103.2	104.3	24	101.5	102.9	104.3	24
8/22	---	---	---	0	---	---	---	0	100.5	100.9	101.2	23	101.7	102.6	103.2	23	101.1	102.0	103.5	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwr-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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/9	103.1	105.0	106.9	24	101.2	101.4	101.6	24	115.6	118.4	119.2	24	109.3	109.8	110.0	24	109.1	109.5	110.0	24
8/10	103.2	105.3	106.8	24	101.1	101.3	101.5	24	117.6	119.3	119.9	24	109.1	109.6	110.0	24	109.0	109.5	110.0	24
8/11	102.7	104.4	106.3	24	101.0	101.2	101.3	24	116.9	120.9	122.1	24	110.4	110.8	111.3	24	109.0	109.3	109.7	24
8/12	102.8	104.7	106.6	24	100.9	101.1	101.4	24	118.8	121.2	122.1	24	110.3	110.7	111.6	24	109.3	109.8	110.2	24
8/13	103.1	105.3	107.0	24	100.9	101.0	101.1	24	120.2	120.5	121.2	24	109.8	110.0	110.3	24	109.1	109.4	109.8	24
8/14	103.6	105.7	107.4	24	101.1	101.4	101.7	24	119.8	120.1	120.7	24	111.3	111.8	112.1	24	109.2	109.7	110.1	24
8/15	102.3	102.3	104.8	8	100.8	101.0	101.1	24	119.9	120.3	121.1	24	112.0	112.1	112.3	24	109.3	109.7	110.2	24
8/16	103.1	103.1	104.3	12	100.6	100.7	100.8	24	119.8	120.2	120.7	24	111.3	111.4	111.6	24	109.1	109.4	110.0	24
8/17	102.6	103.4	103.9	24	100.2	100.3	100.5	24	116.8	119.3	120.8	24	111.2	111.5	111.7	24	109.1	109.7	110.1	24
8/18	102.5	103.8	104.7	24	99.7	99.9	100.2	24	111.8	112.4	113.1	24	113.5	114.9	116.4	24	109.4	109.8	110.3	24
8/19	102.8	104.2	104.9	24	100.0	100.2	100.4	24	115.7	119.8	121.2	24	115.0	115.5	116.0	24	109.9	110.5	110.8	24
8/20	102.9	104.0	104.4	24	100.2	100.4	100.7	24	116.0	119.4	120.5	24	115.7	116.0	116.3	24	110.2	110.5	110.9	24
8/21	102.2	103.3	103.7	24	99.9	100.1	100.4	24	116.4	119.8	120.8	24	115.3	115.6	116.1	24	109.7	110.5	112.1	24
8/22	101.1	102.0	103.1	23	99.9	100.2	100.7	23	115.9	119.0	119.9	23	114.9	115.0	115.3	23	109.6	111.0	111.7	23

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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/9	107.3	107.5	107.7	24	113.0	113.4	113.7	24	110.6	110.9	111.1	24	112.2	113.1	113.8	24	---	---	---	0
8/10	106.5	106.8	107.2	24	112.7	113.1	113.4	24	110.9	111.1	111.4	24	110.0	110.8	111.6	24	---	---	---	0
8/11	105.3	105.6	105.9	24	111.9	112.3	112.6	24	111.1	111.2	111.4	24	110.3	111.2	112.2	24	---	---	---	0
8/12	105.7	106.1	106.5	24	112.6	113.3	114.3	24	110.3	110.4	110.6	24	110.2	111.0	111.6	24	---	---	---	0
8/13	105.9	106.3	107.2	24	113.4	114.2	114.6	24	110.5	110.6	110.7	24	112.1	113.7	114.4	24	---	---	---	0
8/14	106.4	106.6	106.8	24	112.6	112.9	113.3	24	110.2	110.4	110.6	24	110.9	111.9	112.4	24	---	---	---	0
8/15	106.0	106.4	106.8	24	112.8	113.1	113.5	24	109.7	109.9	110.1	24	110.3	111.0	111.6	24	---	---	---	0
8/16	106.8	107.2	107.4	24	113.0	113.3	113.6	24	109.3	109.5	109.7	24	110.4	110.9	111.6	24	---	---	---	0
8/17	106.8	107.1	107.3	24	113.1	113.5	114.1	24	109.3	109.5	109.7	24	110.4	111.1	111.8	24	---	---	---	0
8/18	106.9	107.0	107.1	24	112.9	113.5	113.7	24	109.5	109.7	109.9	24	110.6	111.3	111.6	24	---	---	---	0
8/19	107.0	107.1	107.2	24	114.3	116.9	118.4	24	109.4	109.5	109.7	24	110.5	111.2	111.8	24	---	---	---	0
8/20	107.2	107.4	107.5	24	115.1	118.4	121.0	24	108.9	109.1	109.2	24	110.8	112.3	113.9	24	---	---	---	0
8/21	107.3	107.4	107.5	24	113.7	117.2	118.3	24	108.9	109.1	109.2	24	109.6	110.7	111.7	24	---	---	---	0
8/22	107.4	107.7	107.8	23	112.1	116.2	118.5	23	109.0	109.2	109.4	23	109.0	110.7	112.4	23	---	---	---	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	High		24 h	12 h	High		24h	12h	High		24h	12h	High		24h	12h	High	24h	12h	High	#
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	Avg	AVG	High	hr
8/9	110.3	110.6	111.3	24	116.1	116.5	116.8	24	107.7	108.4	108.8	24	112.9	113.3	113.8	24	108.3	108.7	109.1	24			
8/10	108.8	109.1	109.4	24	115.0	115.3	115.9	24	108.0	108.2	108.4	24	113.0	113.4	113.9	24	108.6	109.1	109.3	24			
8/11	108.0	108.2	108.4	24	113.7	114.4	115.0	24	107.2	107.5	108.0	24	112.5	112.8	113.1	24	107.7	108.0	108.2	24			
8/12	107.6	107.8	108.2	24	115.0	116.3	116.7	24	107.0	107.4	107.7	24	113.4	114.6	115.6	24	107.4	108.0	108.5	24			
8/13	107.5	107.8	108.0	24	115.4	116.4	116.6	24	106.9	107.3	107.6	24	113.8	114.2	114.8	24	108.3	108.5	108.8	24			
8/14	108.1	108.4	108.8	24	115.3	116.3	116.6	24	107.0	107.4	107.8	24	113.7	114.1	114.6	24	109.1	109.4	109.5	24			
8/15	108.5	109.0	109.9	24	115.5	116.3	116.8	24	106.0	106.2	106.5	24	113.2	113.7	114.5	24	108.2	108.5	108.6	24			
8/16	109.2	109.4	109.8	24	115.8	116.7	117.0	24	105.5	105.6	105.7	24	113.3	113.9	114.7	24	107.7	108.0	108.2	24			
8/17	108.3	108.7	109.4	24	115.4	116.1	116.5	24	105.1	105.3	105.7	24	112.4	112.9	113.4	24	107.6	108.1	108.3	24			
8/18	106.8	107.0	107.4	24	113.8	114.6	115.7	24	105.1	105.5	105.9	24	110.6	111.1	111.5	24	107.2	107.5	107.7	24			
8/19	106.3	106.7	107.2	24	114.3	114.7	115.1	24	105.4	105.8	106.0	24	111.3	114.1	114.9	24	106.6	107.1	107.3	24			
8/20	107.0	107.3	107.7	24	114.3	115.1	115.8	24	105.5	106.1	106.5	24	113.6	114.1	115.1	24	106.6	106.8	106.9	24			
8/21	107.8	108.4	109.2	24	115.2	115.4	115.6	24	107.1	107.7	108.5	24	113.6	114.1	114.5	24	108.6	109.3	109.8	24			
8/22	107.9	108.2	108.7	23	115.3	115.8	116.2	23	107.5	107.7	108.0	23	113.8	114.0	114.7	23	109.2	109.6	109.8	23			

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island						
	24 h	12 h	High		24 h	12 h	High		24h	12h	High		24h	12h	High		24h	12h	High	24h	12h	High	#
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	Avg	Avg	High	hr
8/9	114.2	115.4	116.8	24	106.4	106.7	107.2	20	115.9	116.9	117.9	20	111.8	113.1	114.4	20	116.2	117.4	118.9	20			
8/10	114.2	114.7	115.2	24	106.9	107.5	109.7	24	116.0	116.8	118.0	24	112.4	113.9	115.0	24	116.1	117.5	118.8	24			
8/11	112.6	112.9	113.3	24	107.1	107.4	107.8	24	116.2	116.9	118.0	24	112.3	113.6	114.6	24	115.8	117.3	119.4	24			
8/12	113.3	114.5	115.2	24	107.1	107.3	107.5	24	116.0	117.0	118.1	24	113.1	114.4	115.2	24	115.8	117.4	119.2	24			
8/13	114.2	115.2	115.9	24	107.2	107.7	108.2	24	115.6	116.5	117.4	24	113.2	114.8	115.9	24	116.2	117.4	118.6	24			
8/14	114.7	115.2	115.6	24	108.8	109.6	110.0	24	115.9	116.9	117.6	24	112.4	114.3	115.2	24	116.8	118.0	120.0	24			
8/15	113.6	114.2	114.6	24	109.6	109.8	110.0	24	116.6	117.3	118.2	24	112.8	114.3	115.3	24	116.7	118.4	120.4	24			
8/16	113.7	114.6	115.7	24	109.0	109.5	109.8	24	116.7	117.7	118.8	24	114.1	115.7	117.2	24	116.8	118.9	120.5	24			
8/17	113.0	113.8	114.1	24	108.3	108.5	108.9	24	116.4	117.4	118.5	24	113.4	115.0	116.4	24	116.8	118.6	120.1	24			
8/18	112.5	112.8	113.2	24	107.5	107.8	107.9	24	116.6	117.4	118.3	24	112.8	114.8	116.3	24	116.5	118.5	120.1	24			
8/19	111.8	112.4	113.2	24	106.5	106.8	107.2	24	116.3	117.3	118.2	24	113.3	114.7	116.0	24	116.5	118.6	120.3	24			
8/20	112.1	112.6	113.1	24	106.0	106.3	106.6	24	115.8	116.6	117.5	24	112.0	113.7	115.0	24	116.7	118.8	120.3	24			
8/21	112.9	113.9	114.7	24	106.5	107.1	107.7	24	116.5	117.2	118.3	24	112.9	114.9	116.4	24	116.7	118.8	120.2	24			
8/22	114.3	116.1	117.4	23	109.0	109.9	110.6	23	116.7	117.6	118.3	23	113.4	115.0	116.2	23	116.8	118.4	120.5	23			

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 8/23/2013 7:11

Two-Week Summary of Passage Indices

* One or more of the sites on this date had an incomplete or biased sample.

See Sampling Comments: <http://www.fpc.org/currentDaily/smpcomments.htm>

For clip information see: <http://www.fpc.org/CurrentDaily/catch.htm>

For sockeye and yearling chinook (Snake only) race information see: <http://www.fpc.org/smoltqueries/currentsmppsubmitdata.asp>

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)
08/09/2013	*	---	---	---	0	0	0	0	0	0	0
08/10/2013	*	---	---	---	0	0	0	0	---	---	---
08/11/2013	*	---	---	---	0	0	0	0	0	---	0
08/12/2013	*	---	---	---	0	0	0	0	---	---	---
08/13/2013	*	---	---	---	0	0	0	0	0	0	0
08/14/2013	*	---	---	---	0	0	0	0	---	---	---
08/15/2013	*	---	---	---	0	0	---	0	0	---	0
08/16/2013	*	---	---	---	8	0	---	0	---	0	---
08/17/2013	*	---	---	---	0	0	0	0	0	---	0
08/18/2013	*	---	---	---	0	0	---	0	---	---	---
08/19/2013	*	---	---	---	0	0	---	0	0	---	0
08/20/2013	*	---	---	---	0	0	0	0	---	0	---
08/21/2013	*	---	---	---	0	0	---	0	0	---	0
08/22/2013	*	---	---	---	0	0	0	0	---	---	---
08/23/2013	*	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	8	0	0	0	0	0	0
# Days:	0	0	0	0	14	14	9	14	7	4	7
Average:	0	0	0	0	1	0	0	0	0	0	0
YTD	50,632	55,648	26,301	2,797	2,607,089	1,498,294	614,254	28,315	2,123,325	2,056,882	1,881,678

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)
08/09/2013	*	---	---	---	241	986	114	105	5,744	1,079	5,017
08/10/2013	*	---	---	---	375	1,129	63	95	---	---	---
08/11/2013	*	---	---	---	1,089	969	44	125	14,622	---	2,678
08/12/2013	*	---	---	---	1,441	579	7	172	---	---	---
08/13/2013	*	---	---	---	873	402	116	122	8,172	1,014	3,279
08/14/2013	*	---	---	---	286	644	127	93	---	---	---
08/15/2013	*	---	---	---	194	627	---	44	11,859	---	3,125
08/16/2013	*	---	---	---	227	500	---	41	---	391	---
08/17/2013	*	---	---	---	971	519	67	47	10,754	---	2,089
08/18/2013	*	---	---	---	1,284	1,093	---	73	---	---	---
08/19/2013	*	---	---	---	547	716	---	40	5,869	---	3,077
08/20/2013	*	---	---	---	684	667	29	38	---	953	---
08/21/2013	*	---	---	---	532	532	---	35	5,209	---	1,286
08/22/2013	*	---	---	---	405	371	132	51	---	---	---
08/23/2013	*	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	9,149	9,734	699	1,081	62,229	3,437	20,551
# Days:	0	0	0	0	14	14	9	14	7	4	7
Average:	0	0	0	0	654	695	78	77	8,890	859	2,936
YTD	2	61	195	2,668	703,484	619,652	267,961	18,639	3,686,874	2,426,674	4,855,090

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)
08/09/2013 *	---	---	---	---	0	0	0	2	0	0	0
08/10/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/11/2013 *	---	---	---	---	0	0	0	0	0	---	12
08/12/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/13/2013 *	---	---	---	---	0	0	0	0	0	0	0
08/14/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/15/2013 *	---	---	---	---	0	0	---	0	0	---	0
08/16/2013 *	---	---	---	---	8	0	---	0	---	0	---
08/17/2013 *	---	---	---	---	0	0	0	0	0	---	0
08/18/2013 *	---	---	---	---	0	0	---	0	---	---	---
08/19/2013 *	---	---	---	---	0	0	---	0	0	---	0
08/20/2013 *	---	---	---	---	0	0	0	0	---	0	---
08/21/2013 *	---	---	---	---	0	0	---	0	0	---	0
08/22/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/23/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	8	0	0	2	0	0	12
# Days:	0	0	0	0	14	14	9	14	7	4	7
Average:	0	0	0	0	1	0	0	0	0	0	2
YTD	0	0	0	107	61,824	54,077	10,584	49,973	85,380	188,509	770,840

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)
08/09/2013 *	---	---	---	---	0	6	0	0	0	0	0
08/10/2013 *	---	---	---	---	0	3	0	0	---	---	---
08/11/2013 *	---	---	---	---	0	3	0	0	0	---	0
08/12/2013 *	---	---	---	---	0	0	0	2	---	---	---
08/13/2013 *	---	---	---	---	0	6	0	0	0	0	32
08/14/2013 *	---	---	---	---	0	3	0	2	---	---	---
08/15/2013 *	---	---	---	---	0	0	---	0	0	---	0
08/16/2013 *	---	---	---	---	0	0	---	2	---	0	---
08/17/2013 *	---	---	---	---	0	2	0	2	0	---	0
08/18/2013 *	---	---	---	---	0	0	---	2	---	---	---
08/19/2013 *	---	---	---	---	0	2	---	1	0	---	0
08/20/2013 *	---	---	---	---	0	0	0	0	---	0	---
08/21/2013 *	---	---	---	---	0	1	---	3	0	---	0
08/22/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/23/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	0	26	0	14	0	0	32
# Days:	0	0	0	0	14	14	9	14	7	4	7
Average:	0	0	0	0	0	2	0	1	0	0	5
YTD	3,789	40,840	3,547	9,925	2,037,011	1,713,518	610,901	14,982	471,593	732,388	470,306

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)
08/09/2013 *	---	---	---	---	0	0	0	10	41	14	71
08/10/2013 *	---	---	---	---	0	3	0	2	---	---	---
08/11/2013 *	---	---	---	---	0	0	0	6	104	---	0
08/12/2013 *	---	---	---	---	0	0	0	9	---	---	---
08/13/2013 *	---	---	---	---	0	0	0	0	83	10	0
08/14/2013 *	---	---	---	---	8	0	0	0	---	---	---
08/15/2013 *	---	---	---	---	0	0	---	2	41	---	10
08/16/2013 *	---	---	---	---	0	0	---	3	---	39	---
08/17/2013 *	---	---	---	---	3	2	0	2	82	---	0
08/18/2013 *	---	---	---	---	3	1	---	3	---	---	---
08/19/2013 *	---	---	---	---	5	0	---	3	0	---	30
08/20/2013 *	---	---	---	---	0	0	0	4	---	0	---
08/21/2013 *	---	---	---	---	0	1	---	0	0	---	12
08/22/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/23/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	19	7	0	44	351	63	123
# Days:	0	0	0	0	14	14	9	14	7	4	7
Average:	0	0	0	0	1	1	0	3	50	16	18
YTD	1	0	0	326	54,690	33,005	11,379	25,100	633,773	414,310	396,127

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)
08/09/2013 *	---	---	---	---	0	8	2	0	20	0	0
08/10/2013 *	---	---	---	---	0	4	0	1	---	---	---
08/11/2013 *	---	---	---	---	0	0	2	2	10	---	4
08/12/2013 *	---	---	---	---	0	8	2	3	---	---	---
08/13/2013 *	---	---	---	---	2	6	24	12	40	0	14
08/14/2013 *	---	---	---	---	0	0	2	7	---	---	---
08/15/2013 *	---	---	---	---	0	20	---	0	80	---	4
08/16/2013 *	---	---	---	---	0	8	---	0	---	0	---
08/17/2013 *	---	---	---	---	2	3	0	0	300	---	0
08/18/2013 *	---	---	---	---	0	8	---	0	---	---	---
08/19/2013 *	---	---	---	---	1	4	---	1	5,100	---	0
08/20/2013 *	---	---	---	---	0	14	0	0	---	5	---
08/21/2013 *	---	---	---	---	0	6	---	0	4,320	---	0
08/22/2013 *	---	---	---	---	0	3	0	0	---	---	---
08/23/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	5	92	32	26	9,870	5	22
# Days:	0	0	0	0	14	14	9	14	7	4	7
Average:	0	0	0	0	0	7	4	2	1,410	1	3
YTD	0	8	0	0	4,965	55,213	63,708	179	84,660	173,692	6,179

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, pacific lamprey macrophthalmia, and unidentified lamprey species.

†† Passage index for yearling Chinook, steelhead, and subyearling Chinook at LGR may be inflated in 2013 due to possible resampling of PIT-tagged research fish

† 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 = 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.

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.

Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)

WTB and LEW data collected for the FPC by Idaho Dept. of Fish and Game.

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

8/23/13 7:13 AM

08/09/13 TO 08/23/13

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
LGR	Sum of NumberCollected	3,492		2	2		7	3,503
	Sum of NumberBarged	1,622		2	2		2	1,628
	Sum of NumberBypassed	0		0	0		0	0
	Sum of Numbertrucked	1,843		0	0		4	1,847
	Sum of SampleMorts	23		0	0		1	24
	Sum of FacilityMorts	4		0	0		0	4
	Sum of ResearchMorts	0		0	0		0	0
	Sum of TotalProjectMorts	27		0	0		1	28
LGS	Sum of NumberCollected	6,595				17	5	6,617
	Sum of NumberBarged	3,969				14	0	3,983
	Sum of NumberBypassed	0				1	0	1
	Sum of Numbertrucked	2,579				2	3	2,584
	Sum of SampleMorts	28				0	1	29
	Sum of FacilityMorts	19				0	1	20
	Sum of ResearchMorts	0				0	0	0
	Sum of TotalProjectMorts	47				0	2	49
LMN	Sum of NumberCollected	357						357
	Sum of NumberBarged	211						211
	Sum of NumberBypassed	51						51
	Sum of Numbertrucked	78						78
	Sum of SampleMorts	6						6
	Sum of FacilityMorts	12						12
	Sum of ResearchMorts	0						0
	Sum of TotalProjectMorts	18						18
MCN	Sum of NumberCollected	30,129				170		30,299
	Sum of NumberBarged	0				0		0
	Sum of NumberBypassed	30,074				170		30,244
	Sum of Numbertrucked	0				0		0
	Sum of SampleMorts	31				0		31
	Sum of FacilityMorts	24				0		24
	Sum of ResearchMorts	0				0		0
	Sum of TotalProjectMorts	55				0		55
Total Sum of NumberCollected		40,573		2	2	17	182	40,776
Total Sum of NumberBarged		5,802		2	2	14	2	5,822
Total Sum of NumberBypassed		30,125		0	0	1	170	30,296
Total Sum of Numbertrucked		4,500		0	0	2	7	4,509
Total Sum of SampleMorts		88		0	0	0	2	90
Total Sum of FacilityMorts		59		0	0	0	1	60
Total Sum of ResearchMorts		0		0	0	0	0	0
Total Sum of TotalProjectMorts		147		0	0	0	3	150

YTD Transportation Summary

Source: Fish Passage Center

Updated:

8/23/13 7:13 AM

TO: 08/23/13

Site	Data	Species						Grand Total
		CH0	CH1	CO	SO	ST	LU	
LGR	Sum of NumberCollected	454,229	1,865,129	48,076	42,649	1,444,850		3,854,933
	Sum of NumberBarged	437,793	1,554,582	47,807	42,574	1,087,929		3,170,685
	Sum of NumberBypassed	13,693	308,258	210	52	356,574		678,787
	Sum of NumberTrucked	1,843	0	0	4	0		1,847
	Sum of SampleMorts	520	173	2	4	40		739
	Sum of FacilityMorts	342	2,066	57	15	259		2,739
	Sum of ResearchMorts	38	52	0	0	47		137
	Sum of TotalProjectMorts	900	2,291	59	19	346		3,615
LGS	Sum of NumberCollected	429,498	1,026,511	36,885	22,616	1,174,681		2,690,191
	Sum of NumberBarged	426,163	979,239	36,685	22,607	1,108,345		2,573,039
	Sum of NumberBypassed	251	46,698	200	1	66,202		113,352
	Sum of NumberTrucked	2,579	0	0	3	2		2,584
	Sum of SampleMorts	136	14	0	1	9		160
	Sum of FacilityMorts	369	560	0	4	123		1,056
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	505	574	0	5	132		1,216
LMN	Sum of NumberCollected	166,429	470,897	8,000	8,064	459,574	1	1,112,965
	Sum of NumberBarged	151,939	469,284	7,999	8,058	458,179	0	1,095,459
	Sum of NumberBypassed	13,423	1,079	0	2	1,142	129	15,775
	Sum of NumberTrucked	78	0	0	0	0	0	78
	Sum of SampleMorts	109	16	0	0	18	0	143
	Sum of FacilityMorts	361	518	1	4	235	0	1,119
	Sum of ResearchMorts	0	0	0	0	0	0	0
	Sum of TotalProjectMorts	470	534	1	4	253	0	1,262
MCN	Sum of NumberCollected	1,772,251	1,098,880	43,803	314,567	255,352		3,484,853
	Sum of NumberBarged	0	0	0	0	0		0
	Sum of NumberBypassed	1,771,704	1,098,057	43,799	314,318	255,297		3,483,175
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	375	62	1	34	8		480
	Sum of FacilityMorts	172	761	3	215	47		1,198
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	547	823	4	249	55		1,678
Total Sum of NumberCollected		2,822,407	4,461,417	136,764	387,896	3,334,457	1	11,142,942
Total Sum of NumberBarged		1,015,895	3,003,105	92,491	73,239	2,654,453	0	6,839,183
Total Sum of NumberBypassed		1,799,071	1,454,092	44,209	314,373	679,215	129	4,291,089
Total Sum of NumberTrucked		4,500	0	0	7	2	0	4,509
Total Sum of SampleMorts		1,140	265	3	39	75	0	1,522
Total Sum of FacilityMorts		1,244	3,905	61	238	664	0	6,112
Total Sum of ResearchMorts		38	52	0	0	47	0	137
Total Sum of TotalProjectMorts		2,422	4,222	64	277	786	0	7,771

Cumulative Adult Passage at Mainstem Dams Through: 08/23

DAM	ENDDA	Spring Chinook						Summer Chinook						Fall Chinook					
		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	08/22	83345	33820	158089	7592	141713	20323	93097	26186	81663	12235	87543	17586	48817	7514	17011	4394	17803	3376
TDA	08/22	69202	32311	117087	7175	107368	16911	85639	20750	69222	10392	74538	13909	22770	4184	10168	2837	9423	2020
JDA	08/22	56991	28957	107655	6755	92410	15875	74764	19636	60814	10415	67514	14608	11170	2163	5631	1606	5454	1616
MCN	08/22	52176	22279	102763	4787	83990	13854	75741	14808	64428	5104	63310	10848	8477	1594	5055	882	3511	749
IHR	08/22	38017	18611	71957	2905	58986	8558	11912	6321	14182	1481	17476	4251	2793	420	928	180	645	97
LMN	08/22	36470	19053	68608	2891	58025	7379	11765	7703	15150	1611	18803	4213	1847	282	729	199	433	111
LGS	08/22	35072	19443	68247	3449	53406	8429	10120	7632	14748	1613	17544	4904	1381	179	558	121	292	41
LGR	08/22	35031	19940	66366	3525	53382	9851	8423	7572	13163	1717	16010	5560	364	92	201	49	163	39
PRD	08/21	13725	1298	19495	1015	15225	1406	71083	3174	50667	1994	53926	2612	2777	2138	2047	849	1661	547
WAN	08/21	13715	1661	19804	973	15699	2278	69983	2189	50588	1515	47124	1979	2035	861	1998	752	1349	614
RIS	08/15	13345	3100	19881	800	14248	2237	67817	3803	51551	2933	50880	5321	0	0	0	0	0	0
RRH	08/15	6841	2101	6641	459	5306	853	58609	3577	44468	2394	38339	4092	0	0	0	0	0	0
WEL	08/19	7133	2980	5311	700	4618	880	43399	3467	36890	2868	27450	2459	0	0	0	0	0	0
WFA	08/06	27660	1631	35822	1308	46059	1105	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDA	Coho						Sockeye			Steelhead						Lamprey		
		2013		2012		10-Yr Avg.		2013	2012	10-Yr Avg.	2013	2012	10-Yr Avg.	2013	2012	10-Yr Avg.	2013	2012	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	08/22	529	80	752	175	1621	216	185494	515666	177590	161677	155485	229836	76756	61832	80889	21923	25854	31495
TDA	08/22	29	2	175	54	199	56	161879	410081	146264	65647	96244	94021	36115	41940	38488	7613	5014	7403
JDA	08/22	6	3	94	36	81	30	155363	394120	149043	36667	60466	74247	18805	27710	29012	4837	3560	6174
MCN	08/22	2	0	11	2	3	1	134169	364133	125774	33209	53672	52169	16673	21742	19412	1207	620	2459
IHR	08/22	0	0	0	0	0	0	895	453	425	23224	9735	28245	7308	3228	7983	230	316	318
LMN	08/22	0	0	0	0	0	0	1012	486	530	15996	10206	29328	6642	4167	9178	73	92	91
LGS	08/22	1	0	0	0	0	0	989	451	508	8329	7529	20731	4172	3916	6879	24	47	81
LGR	08/22	0	0	0	0	0	0	735	453	613	11167	11387	18088	5307	5142	6353	12	32	28
PRD	08/21	0	0	3	0	15	0	163066	408249	154766	4937	6936	6909	0	0	0	3778	1384	1723
WAN	08/21	0	0	1	1	2	0	155689	450183	196428	4130	6504	7535	0	0	0	1596	617	840
RIS	08/15	0	0	0	0	0	0	159069	410342	152318	2286	4348	4367	1474	2221	2439	373	74	432
RRH	08/15	0	0	0	0	0	0	131537	363009	129703	1487	3648	3229	925	1889	1693	261	35	154
WEL	08/19	0	0	0	0	0	0	132123	325821	123472	426	2340	1901	261	1131	948	11	0	8
WFA	08/06	2	0	0	0	0	0	0	0	0	17271	31107	25329	0	0	0	0	0	0

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.