



Fish Passage Center

Weekly Report #12 - 22

August 10, 2012

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 52% and 148% of average at individual sub-basins over July. Precipitation above The Dalles has been 112% of average over July. Over the 2012 water year, precipitation has ranged between 90% and 122% of average.

Table 1. Summary of July precipitation and cumulative October through July 31, 2012 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2012 July 1-31, 2012		Water Year 2012 October 1, 2011 to July 31, 2012	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	2.01	113	26.64	119
Snake River Above Ice Harbor	0.76	83	15.93	99
Columbia Above The Dalles	1.39	112	23.36	112
Kootenai	2.33	122	27.88	122
Clark Fork	1.05	88	16.90	110
Flathead	1.43	90	24.31	119
Pend Oreille/ Spokane	1.41	103	34.36	120
Central Washington	0.55	148	7.94	95
Snake River Plain	0.52	86	9.16	90
Salmon/Boise/ Payette	0.42	52	17.91	97
Clearwater	1.04	71	31.77	112
SW Washington Cascades/Cowlitz	1.11	80	70.09	105
Willamette Valley	0.46	56	62.74	111

Grand Coulee Reservoir is at 1284.8 feet (8-9-12) and drafted 3.0 feet over the last week. The end of August draft elevation will be approximately 1279.7 feet at Grand Coulee. Outflows at Grand Coulee have ranged between 162.2 and 180.9 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2456.2 feet (8-9-12) and has drafted 1.2 feet over the last week. Operators plan to draft Libby to approximately 2452.5 feet by the end of August while gradually reducing outflows to 8.0 Kcfs by early September. Outflows at Libby Dam have ranged between 18.0-20.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3556.8 feet (8-9-12) and has drafted 0.7 feet over the last week. Outflows at Hungry Horse have been 2.9-3.0 Kcfs last week.

Dworshak is currently at an elevation of 1562.2 feet (8-9-12) and has drafted 8.2 feet over the last week for temperature and flow augmentation. Operators plan to draft Dworshak to 1535 feet by the end of August. Outflows from Dworshak have ranged between 11.7-12.9 Kcfs the past week.

The Brownlee Reservoir was at an elevation of 2055.7 feet on August 7th, 2012 drafting 1.4 feet last week. Over the last week, outflows at Brownlee have ranged between 9.6 and 11.4 Kcfs.

The Biological Opinion summer flow objective at Lower Granite (June 21st to August 31st) is 52 Kcfs; over the summer period flows at Lower Granite have 50.0 Kcfs and 30.1 Kcfs over the last week.

The Summer Biological Opinion Flow Objective is 200 Kcfs at McNary Dam (began July 1st and will end August 31st). Over the summer period, flows at McNary have averaged 304.1 Kcfs and 230.7 Kcfs over the last week.

Spill:

The summer spill program began on June 21 in the Snake River and July 1 at the lower Columbia River projects, at projects where dates were not modified for research purposes.

Snake River flows have been decreasing over

the past week. At Lower Granite Dam spill did not always meet the Court Ordered summer spill level of 18 Kcfs due to low flows and the allowed operation of one turbine unit as a powerhouse minimum flow. At Little Goose Dam spill met the 30% of instantaneous flow level as specified in the Court Order until August 7, when low flows caused the project to implement the agreed upon low flow spill level of an instantaneous 11.2 Kcfs. At Lower Monumental Dam the summer spill level of 17 Kcfs was always met due to low flows and powerhouse minimums. At Ice Harbor Dam the Court Order “test-like” conditions were completed as of July 13th and spill reverted back to the 45 Kcfs during the day and gas cap spill during the night. However, due to low flows, spill is presently occurring as all flow in excess of that needed to operate one turbine unit at this project.

Project	Day/Night Spill
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	45 Kcfs/gas cap

Summer spill for fish passage at the Lower Columbia projects began on July 1. Flows declined steadily in the lower Columbia River over the past week. Spill at McNary Dam changed to the summer level of 50% early to accommodate research studies and met the Court Order over the past week. Spill at John Day Dam met the 30% instantaneous spill level. At The Dalles Dam, spill met the 40% daily spill level over the past week. Spill at Bonneville Dam completed the summer test levels comparing 95 Kcfs for 24 hours versus 85 Kcfs during daytime hours and gas cap spill at night on July 20th. Spill from July 21st to the end of August will be 75 Kcfs during the day and gas cap spill at night. Spill met these levels.

Project	Day/Night Spill
McNary	50%/50%
John Day	30%/30%
The Dalles	40%/40%
Bonneville	75 Kcfs/gas cap

Gas bubble trauma samples were taken this past week at Little Goose, Lower Monumental, McNary, Rock Island and Bonneville dams. There were no signs of GBT detected in the samples this past week.

Smolt Monitoring:

Smolt monitoring activities are ongoing at all seven SMP dams (BON, JDA, MCN, LGR, LGS, LMN, and RIS). The Imnaha River Trap is the only SMP trap that is still collecting juvenile salmonids for the 2012 season.

Subyearling Chinook were the dominant species of salmonid at all SMP dams over the past week. When compared to last week, subyearling Chinook passage decreased at all SMP sites this week. Although subyearling Chinook dominate the collections, the SMP sites continue to collect a few spring migrants.

Subyearling Chinook numbers at BON decreased this week, with a daily average passage index of about 9,500 per day, compared to last week’s daily average passage index of over 20,000. As with previous weeks, sockeye and yearling Chinook were the only spring migrants collected at BON this week. Both pacific lamprey ammocoetes and macrophthalmia were collected at BON this week. The daily collections for pacific lamprey ammocoetes ranged from 0 to 33 per day while that for macrophthalmia ranged from 0 to 43 per day. Due to anticipated repairs to the Gantry crane at BON, all but three screens have been pulled from the juvenile bypass system at the second powerhouse. These screens are expected to remain out for the remainder of the 2012 SMP season. The three screens that remain are in units 11, 12, and 18. Having screens out at BON may result in bias collection estimates, as not as many fish will be guided into the juvenile bypass system in the second powerhouse.

Passage of subyearling Chinook at JDA continued to decrease this week. The daily average passage index for subyearling Chinook at JDA this week was about 16,000 per day, compared to 48,000 per day last week. Some yearling Chinook and sockeye were collected at JDA this week but in very small numbers. Collections of pacific lamprey macrophthalmia decreased this week. The daily average collection for pacific lamprey macrophthalmia at JDA this week was about 240 per day, compared to about 1,400 per day last week. No pacific lamprey ammocoetes were collected at JDA this week.

Passage of subyearling Chinook at MCN decreased this week, when compared to last week. The

daily average passage index for subyearling Chinook at MCN this week was nearly 30,000 per day, compared to over 90,000 per day last week. Passage of pacific lamprey macrophthalmia also decreased this week. This week's daily average collection for pacific lamprey macrophthalmia at MCN was about 180 per day, compared to about 570 per day last week. No pacific lamprey ammocoetes were collected at MCN this week.

Subyearling Chinook passage at LGR decreased this week, when compared to last week. The daily average passage index for subyearling Chinook at LGR this week was about 740 per day. Last week's daily average passage index for subyearling Chinook was nearly 1,500 per day. Some coho, sockeye, and steelhead were also collected at LGR this week, but in very small numbers. Given that Dworshak Dam has been spilling up to 3 Kcfs since July 10th, the sockeye juveniles collected at LGR may be kokanee from Dworshak reservoir.

When compared to last week, passage of subyearling Chinook at LGS and LMN decreased this week. The daily average passage index for subyearling Chinook at LGS this week was about 1,600 per day, compared to nearly 2,200 per day last week. This week's daily average passage index for subyearling Chinook at LMN was about 510 per day, compared to about 720 per day last week. Both pacific lamprey ammocoetes and macrophthalmia were collected at LGS and LMN this week. However, the collection numbers for lamprey juveniles were low, particularly at LMN.

Passage of subyearling Chinook at RIS decreased this week. This week's daily average passage index for subyearling Chinook at RIS was 226 per day, compared to 416 per day last week. Coho, sockeye, and steelhead juveniles were also collected at RIS this week, but in very small numbers. Finally, only one pacific lamprey macrophthalmia was collected at RIS this week.

No new data from the Imnaha River Trap are available this week.

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 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:

Fall Chinook began to pass Bonneville Dam on August 1st. Daily counts of fall Chinook at Bonneville Dam ranged from 146 to 178. The adult fall Chinook count of 4,940 is about 1.11 times greater than the 2011 count of 4,457 and about 1.25 times greater than the 10 year average count of 3,947. The 2012 Bonneville Dam fall Chinook jack count of 1,419 is about 94% of the 2011 count of 1,509, while being 2.1 times greater than the 10 year average count of 674. The 2012 adult summer Chinook count at Lower Granite Dam in the Snake River of 12,765 is about 35.3% of the 2011 count and 75.6% of the 10 year average count. The 2012 Lower Granite summer Chinook jack count of 1,643 is about 10% of the 2011 count and 29.3% of the 10 year average count.

The Bonneville Dam 2012 steelhead count of 119,601 is about 71.7% of the 2011 count of 166,900 and about 74.3% of the 10 year average count of 161,050. The 2012 Bonneville wild adult steelhead count of 50,148 is about 68.1% of the 2011 count of 73,639 and about 78.8% of the 10 year average count of 63,595. In the Snake River, this year's Lower Granite steelhead count of 10,491 is about 55.6% of the 2011 count of 18,862 and 67% of the 10 year average of 15,661. The 2012 Lower Granite wild adult steelhead count of 4,657 is about 54.3% of the 2011 count of 8,570 and 87.7% of the 10 year average count of 5,311. At Willamette Falls Dam, the 2012 count for steelhead was 28,814, as of August 3rd. This year's steelhead count is about 1.06 times greater than the 2011 count of 27,090 and 1.08 times greater than the 10 year average count of 26,755.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 4 and 23 last week. The 2012 accumulated total adult sockeye count at Bonneville Dam of 515,628, as of 8/9/2012, is about 2.77 times greater than the 2011 count of 185,758 and about 3.94 times greater than the 10 year average count

of 130,956. The 2012 McNary Dam adult sockeye count of 364,088 is about 3.2 times greater than the 2011 count of 113,845 and 3.9 times greater than the 10 year average count of 93,260. 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 at Ice Harbor Dam, the 2012 adult sockeye count of 452 is 40% of the 2011 count of 1,129, while being 1.16 times greater than the 10 year average count of 390. The Lower Granite Dam 2012 adult sockeye count of 441 is about 29.8% of the 2011 count of 1,479 and about 77.4% of the 10 year average count of 570.

The coho salmon run at Bonneville Dam is just beginning with 73 adults and 19 jacks counted to date. As of August 9th at Bonneville Dam, the adult shad count was 2,431,314. This year's shad count is about 2.6 times greater than the 2011 count of 947,187, while being 82.8% of the 10 year average count of 2,935,779.

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
07/27/2012	212.0	5.1	207.8	84.1	223.3	44.1	224.0	69.2	218.8	47.3	233.7	118.4	229.6	99.1
07/28/2012	201.6	0.6	198.4	50.4	215.1	44.5	215.1	71.4	213.7	42.2	240.3	118.4	237.8	99.7
07/29/2012	197.0	0.1	193.9	26.3	203.6	33.9	200.4	62.2	196.4	41.0	204.6	72.5	212.3	92.1
07/30/2012	197.3	0.1	198.3	42.0	214.0	34.0	210.3	72.6	205.2	39.7	223.2	88.9	223.0	87.6
07/31/2012	189.3	0.2	191.0	29.6	202.0	25.3	199.5	44.3	199.4	40.9	213.3	81.3	213.6	87.5
08/01/2012	186.7	0.1	189.4	27.1	199.9	21.0	199.0	32.6	197.7	38.8	212.9	79.7	214.5	95.4
08/02/2012	181.2	0.2	177.2	10.7	191.3	16.3	190.2	27.5	189.3	40.1	202.7	67.2	187.4	79.8
08/03/2012	175.4	0.1	173.1	0.0	183.2	10.0	178.8	18.9	179.6	38.4	189.8	49.4	186.1	51.7
08/04/2012	180.9	0.1	180.9	0.0	190.2	13.3	184.3	16.5	186.8	38.3	194.5	65.6	192.5	74.1
08/05/2012	170.6	0.1	174.1	0.0	184.5	13.8	184.3	16.3	187.8	37.5	199.8	69.6	201.3	77.9
08/06/2012	179.8	0.1	174.8	0.0	182.1	10.0	179.4	16.8	180.6	38.0	189.4	56.1	187.9	72.1
08/07/2012	172.8	0.1	174.1	0.0	180.5	10.5	179.2	16.9	181.4	37.9	192.6	66.3	220.4	104.9
08/08/2012	162.2	0.1	160.6	0.0	174.4	10.6	179.3	16.4	182.2	37.0	194.3	63.3	195.1	69.1
08/09/2012	178.1	0.1	172.4	0.0	174.3	14.5	166.9	22.3	166.9	34.9	172.6	37.4	167.5	40.5

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/27/2012	13.0	3.3	9.5	15.5	40.6	19.3	41.5	16.5	40.5	18.0	43.0	32.8		
07/28/2012	11.1	1.4	9.6	13.3	37.7	20.1	36.2	15.9	35.7	19.0	37.5	27.2		
07/29/2012	10.9	1.2	8.7	14.3	33.7	18.3	33.0	13.7	32.0	16.6	33.3	23.3		
07/30/2012	13.0	3.3	8.1	15.2	36.2	18.4	34.4	12.0	33.6	22.5	34.3	24.3		
07/31/2012	13.0	3.2	7.9	15.1	38.5	18.3	39.3	12.9	41.5	17.0	44.5	34.3		
08/01/2012	13.0	3.2	8.3	13.5	35.6	18.3	34.6	10.5	32.6	17.0	33.1	23.2		
08/02/2012	13.1	3.2	8.0	11.5	34.7	18.3	35.1	10.5	35.0	16.6	36.6	26.1		
08/03/2012	12.9	3.1	8.0	11.3	32.5	18.2	31.8	9.5	33.2	17.4	36.3	26.0		
08/04/2012	12.1	3.1	7.6	9.8	32.2	18.3	32.3	9.7	33.0	16.5	35.5	25.0		
08/05/2012	11.9	3.1	8.4	11.8	29.0	15.9	29.1	8.7	27.5	14.7	27.5	17.3		
08/06/2012	11.7	2.8	8.3	11.4	29.9	16.7	28.9	10.0	29.7	16.7	31.2	21.0		
08/07/2012	12.1	3.1	8.2	9.7	31.2	18.3	34.5	11.2	32.4	17.0	34.6	24.4		
08/08/2012	12.5	3.5	8.6	9.2	28.6	15.8	28.7	11.2	29.1	15.6	30.0	19.7		
08/09/2012	12.8	3.4	---	---	27.4	14.6	29.6	11.2	27.3	13.0	27.3	17.1		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
07/27/2012	286.4	153.2	280.1	97.0	265.1	105.0	291.9	96.7	83.8	99.0
07/28/2012	257.3	138.5	251.0	93.0	236.9	103.0	258.1	88.3	76.0	81.4
07/29/2012	273.0	141.9	260.9	105.6	241.1	104.3	264.6	90.1	73.0	89.1
07/30/2012	264.2	145.0	253.0	109.3	237.2	101.8	242.4	119.9	76.1	34.0
07/31/2012	266.9	141.3	269.5	116.8	256.1	110.3	263.2	138.4	83.6	28.8
08/01/2012	252.5	126.4	245.1	74.1	230.1	92.1	259.2	95.6	78.7	72.5
08/02/2012	238.5	119.8	239.9	72.0	226.4	90.2	232.2	89.6	61.2	68.9
08/03/2012	255.7	128.5	237.4	71.1	222.1	89.1	240.0	89.7	69.2	68.7
08/04/2012	225.7	113.2	227.9	68.1	211.5	85.1	241.0	89.5	65.8	73.3
08/05/2012	238.4	119.4	224.1	67.0	206.4	82.3	221.2	89.2	55.6	63.9
08/06/2012	228.5	114.2	225.4	67.8	213.1	85.1	219.4	88.9	72.3	45.8
08/07/2012	227.4	113.7	217.3	65.1	203.1	80.8	230.3	88.8	78.1	51.0
08/08/2012	222.2	111.5	212.4	63.5	196.8	78.5	207.0	89.6	60.4	44.6
08/09/2012	217.3	108.8	206.4	61.8	195.8	78.1	211.8	90.1	67.3	42.0

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>		
7/27	106.6	106.7	107.1	17	119.5	119.6	120.5	13	120.5	120.6	120.9	15	118.0	118.0	118.5	13	118.2	118.7	119.3	24
7/28	106.2	106.4	106.9	24	118.8	119.4	120.0	21	119.7	119.8	120.0	24	117.0	117.5	118.1	21	117.6	117.9	118.4	24
7/29	105.8	106.1	106.4	24	119.0	119.3	120.1	22	119.3	119.4	119.7	24	116.8	117.3	117.6	22	117.7	118.3	118.7	24
7/30	106.0	106.4	106.6	24	118.8	119.5	120.7	22	119.1	119.2	119.4	24	116.8	117.1	117.6	22	117.8	118.2	118.7	24
7/31	106.1	106.5	106.7	24	117.4	117.9	118.5	20	118.6	118.8	119.1	24	116.3	116.6	117.3	20	117.1	117.4	117.8	24
8/1	106.1	106.6	106.9	24	115.9	116.5	117.8	23	118.5	118.8	119.0	24	114.7	115.8	116.6	23	116.6	116.9	117.3	24
8/2	106.3	106.5	106.8	24	114.7	115.2	116.4	23	118.2	118.4	118.6	24	115.0	115.6	115.9	23	116.2	116.5	116.9	24
8/3	105.9	106.1	106.3	23	116.1	116.3	116.8	23	117.8	117.9	118.1	24	113.9	114.7	116.0	23	115.4	115.6	115.8	24
8/4	117.7	120.5	120.8	24	115.5	115.8	116.0	23	117.8	118.1	118.5	24	113.9	115.1	115.8	23	115.8	116.3	116.7	24
8/5	120.3	120.5	120.8	24	115.3	115.4	115.6	23	117.8	118.0	118.2	24	114.0	114.9	116.0	23	116.2	116.5	117.0	24
8/6	115.4	120.2	120.3	24	115.2	115.6	115.8	24	117.3	117.5	117.6	24	113.9	114.5	115.1	24	115.2	115.5	115.9	24
8/7	106.0	106.4	106.9	24	115.1	115.6	116.3	22	117.2	117.7	117.9	24	113.8	114.7	115.6	22	115.0	115.4	115.8	24
8/8	106.0	106.3	106.6	24	116.1	116.5	117.0	23	117.4	117.6	117.9	24	113.6	114.3	115.1	23	114.7	114.8	115.2	24
8/9	105.9	106.3	106.6	24	115.5	115.9	116.4	23	116.8	117.0	117.1	24	113.5	114.0	114.6	23	114.3	114.4	114.7	24

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>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>		
7/27	118.3	118.9	119.3	24	117.5	117.9	118.1	24	120.9	121.7	122.7	24	120.2	120.9	121.5	24	117.1	117.6	118.2	24
7/28	116.4	117.3	118.0	24	117.5	117.8	118.1	24	120.7	121.1	121.6	24	118.0	118.3	118.6	24	116.3	116.7	117.0	24
7/29	115.0	115.7	115.8	24	116.6	116.8	117.0	23	119.1	119.8	120.3	23	118.5	118.9	119.1	24	115.8	116.4	117.6	24
7/30	115.9	117.1	120.2	24	116.4	116.7	116.9	23	118.6	119.0	119.5	23	117.7	118.3	118.8	24	117.3	118.1	118.8	24
7/31	113.6	114.5	116.3	24	116.0	116.4	116.9	24	117.5	117.8	118.0	24	116.4	116.7	117.0	24	114.8	115.4	116.7	24
8/1	113.0	113.5	113.8	24	115.3	115.5	115.8	24	116.8	117.5	118.3	24	115.7	115.9	116.2	24	113.6	114.2	114.9	24
8/2	114.2	115.3	115.7	24	115.0	115.4	115.6	24	116.0	116.6	117.5	24	115.2	115.8	116.1	24	113.0	113.6	114.0	24
8/3	114.4	114.6	114.7	24	114.8	115.1	115.2	24	115.3	115.7	115.9	24	114.4	114.9	115.2	24	111.2	111.6	112.0	24
8/4	114.8	115.3	115.5	24	115.3	115.7	116.0	24	116.0	116.5	116.8	24	114.4	114.8	115.0	24	111.0	111.5	111.8	24
8/5	115.3	115.6	116.5	24	116.0	116.3	116.6	24	116.8	117.1	117.6	24	114.9	115.4	115.7	24	110.4	111.3	111.5	24
8/6	114.4	114.7	115.2	24	115.2	115.6	116.0	24	115.8	116.1	116.5	24	115.5	115.7	115.8	24	111.3	111.8	112.1	24
8/7	114.3	114.7	115.3	24	114.8	115.3	115.5	24	115.3	115.9	116.1	24	114.4	114.7	114.9	24	111.3	112.0	112.3	24
8/8	114.0	114.3	114.6	24	114.5	115.1	115.5	24	115.1	115.7	116.0	24	114.0	114.2	114.4	24	111.4	111.9	112.5	24
8/9	113.5	113.7	114.2	24	113.3	113.7	113.9	24	113.9	114.7	115.3	24	113.1	113.3	113.5	24	110.8	112.2	113.2	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>		
7/27	120.4	121.1	121.4	24	122.4	123.3	123.7	24	122.6	123.2	123.5	24	124.0	124.8	125.5	24	120.4	121.6	122.3	24
7/28	119.0	119.9	120.5	24	121.2	122.3	122.8	24	118.9	119.7	120.4	24	122.5	123.3	124.5	24	120.8	122.2	123.6	24
7/29	118.6	119.3	119.7	24	120.5	121.8	122.4	24	118.9	119.9	120.8	24	117.8	118.8	119.9	24	118.5	119.0	120.8	24
7/30	119.4	120.3	121.1	24	121.8	122.4	122.7	24	117.9	118.2	119.0	24	118.9	119.6	122.0	24	116.4	118.1	120.5	24
7/31	117.1	117.7	118.4	24	120.2	120.8	121.0	24	117.8	118.9	120.3	24	118.5	119.2	119.7	24	116.5	118.0	119.5	24
8/1	116.1	116.7	117.0	24	119.1	119.9	120.3	24	117.5	118.2	119.5	24	118.0	119.2	119.8	24	116.0	117.5	118.4	24
8/2	115.4	116.4	117.3	24	118.7	120.1	120.7	24	115.2	115.6	116.3	24	116.2	117.0	117.6	24	114.1	115.5	116.4	24
8/3	113.9	115.0	115.8	24	117.5	119.2	119.6	24	115.6	116.3	117.0	24	115.3	115.7	116.1	24	114.2	115.5	115.8	24
8/4	114.1	114.8	115.3	24	118.2	119.4	119.8	24	116.6	117.4	118.1	24	116.2	116.8	119.3	24	114.5	115.3	115.8	24
8/5	114.4	115.2	115.6	24	118.2	119.3	119.7	24	117.4	118.3	119.3	24	117.6	119.3	120.7	24	117.6	119.7	120.7	24
8/6	114.7	115.4	116.0	24	118.6	119.6	120.0	24	115.6	116.0	116.3	24	115.6	115.9	118.7	24	114.2	114.8	116.4	24
8/7	114.3	115.1	115.8	24	118.3	119.5	119.8	24	116.9	117.8	118.8	24	117.3	118.7	120.7	24	115.8	117.5	118.9	24
8/8	113.6	114.1	114.4	24	117.9	118.9	119.5	24	---	---	---	0	---	---	---	0	---	---	---	0
8/9	112.7	113.5	114.0	24	117.4	118.8	119.2	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>Clrwrtr-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	
7/27	121.7	122.2	122.9	24	116.9	117.6	118.2	24	109.1	109.3	109.5	18	107.6	108.6	109.6	24	102.3	103.0	104.0	19
7/28	121.4	122.5	123.0	24	114.7	115.6	116.2	24	103.6	104.1	107.4	24	104.0	105.1	106.1	24	101.6	102.7	103.7	24
7/29	120.2	120.6	122.1	24	115.7	117.1	117.8	24	102.8	103.1	103.4	24	102.9	104.0	105.1	24	101.8	103.1	104.2	24
7/30	119.6	120.1	120.6	24	114.5	115.4	116.2	24	108.0	108.6	109.0	24	106.5	107.9	109.0	24	101.9	103.0	104.2	24
7/31	119.3	119.8	120.3	24	113.9	115.2	115.8	24	108.2	108.7	108.9	24	106.9	108.0	109.1	24	101.8	103.0	104.1	24
8/1	119.2	119.9	120.3	24	114.0	115.2	115.8	24	108.2	108.6	108.9	24	106.9	107.9	108.7	24	101.9	103.1	104.4	24
8/2	117.7	118.6	119.8	24	113.6	114.5	115.1	24	108.5	108.9	109.2	24	106.7	107.7	108.7	24	101.7	102.8	103.9	24
8/3	116.5	117.7	118.8	24	113.0	114.1	114.5	24	107.8	108.3	108.7	24	106.2	107.2	108.1	24	101.5	102.7	103.9	24
8/4	117.9	118.3	118.9	24	112.6	113.4	113.9	24	108.3	108.9	109.4	24	106.3	107.4	108.4	24	101.7	103.2	104.5	24
8/5	119.7	120.1	120.5	24	113.5	114.6	115.2	24	108.5	108.9	109.0	24	106.4	107.3	108.2	24	101.8	103.2	104.5	24
8/6	117.6	118.2	118.5	24	114.3	115.0	115.7	24	107.4	108.3	108.9	24	105.3	105.7	106.1	24	101.6	102.9	104.1	24
8/7	118.4	119.0	119.6	24	113.5	114.4	115.0	24	108.1	108.5	108.9	24	105.7	107.0	107.6	24	102.0	103.5	104.9	24
8/8	---	---	---	0	111.7	112.5	114.2	24	108.6	108.8	109.1	24	106.6	107.3	107.8	24	101.1	102.0	103.1	24
8/9	---	---	---	0	111.0	111.9	112.4	24	108.3	108.5	108.8	24	107.5	108.9	109.8	24	101.3	102.9	104.3	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwrtr-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	
7/27	105.3	107.4	109.1	24	102.0	102.2	102.5	24	115.9	116.7	118.2	24	109.4	109.5	109.5	24	112.6	113.1	113.8	24
7/28	104.4	106.3	107.7	24	101.9	102.2	102.4	24	116.3	116.9	118.7	24	110.5	110.8	111.0	24	112.7	113.2	114.4	24
7/29	103.5	105.9	107.5	24	102.4	102.8	103.0	24	116.1	116.5	117.2	24	111.7	112.2	112.5	24	113.0	113.5	113.9	24
7/30	104.4	107.0	108.8	23	103.0	103.2	103.3	24	115.8	116.3	116.6	24	111.1	111.3	111.8	24	112.8	113.1	113.4	24
7/31	104.8	107.0	108.6	24	102.4	102.6	102.9	24	115.3	115.7	116.0	24	111.1	111.3	111.6	24	112.6	113.1	113.3	24
8/1	104.7	107.0	108.6	24	101.9	102.0	102.1	24	115.5	115.8	116.7	24	111.4	111.9	112.7	24	112.7	113.4	113.9	24
8/2	104.5	106.6	108.0	24	101.7	101.9	102.1	24	115.6	115.9	116.4	24	113.1	113.3	113.6	24	113.4	113.9	114.3	24
8/3	104.6	106.7	108.2	24	101.2	101.4	101.8	24	115.7	116.1	116.6	24	112.0	112.4	112.8	24	112.8	113.3	113.8	24
8/4	104.7	107.0	108.6	24	101.1	101.2	101.4	24	116.0	116.3	116.9	24	111.1	111.4	111.9	24	112.7	113.1	113.4	24
8/5	104.8	107.0	108.5	24	101.2	101.3	101.5	24	115.5	116.1	117.1	24	112.3	112.8	113.4	24	112.8	113.3	114.0	24
8/6	104.3	106.5	108.3	24	101.3	101.5	101.7	24	115.7	116.2	116.9	24	112.3	112.4	112.6	24	111.1	112.1	112.6	24
8/7	104.8	107.3	109.0	24	101.7	101.9	102.1	24	116.0	116.4	117.5	24	112.0	112.1	112.4	24	110.0	110.5	110.9	24
8/8	104.2	105.9	107.1	24	102.0	102.2	102.7	24	115.0	115.5	116.0	24	111.3	111.6	112.0	24	108.9	109.3	109.6	24
8/9	105.2	107.7	109.3	24	102.6	103.1	103.4	24	115.5	115.9	116.2	24	111.2	111.6	112.2	24	109.2	109.9	110.6	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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
7/27	111.3	111.7	112.4	24	116.9	117.3	117.7	22	112.2	112.5	113.7	24	113.8	114.4	115.0	24	---	---	---	0
7/28	110.5	110.5	110.7	24	116.6	117.0	117.6	24	112.0	112.2	112.5	24	113.8	114.5	115.1	24	---	---	---	0
7/29	110.1	110.3	110.4	24	116.5	116.8	117.5	24	112.0	112.3	112.6	24	112.6	113.5	114.6	24	---	---	---	0
7/30	109.6	109.8	110.1	24	116.9	118.3	120.5	24	111.4	111.8	112.5	24	113.5	113.9	114.3	24	---	---	---	0
7/31	109.1	109.4	110.1	24	116.3	116.7	117.4	24	110.8	111.1	111.2	24	113.7	114.3	115.1	24	---	---	---	0
8/1	109.7	110.3	110.8	24	116.5	116.7	117.1	24	111.2	111.5	111.8	24	113.4	113.9	114.5	24	---	---	---	0
8/2	110.4	110.7	110.8	24	116.3	116.8	117.4	24	111.3	111.6	111.7	24	113.7	114.0	114.4	24	---	---	---	0
8/3	110.4	110.7	111.3	24	116.9	117.4	119.1	24	111.9	112.2	112.7	24	113.4	113.8	114.2	24	---	---	---	0
8/4	110.8	111.0	111.1	24	116.3	116.6	117.2	24	112.2	112.5	113.0	24	113.7	114.1	114.8	24	---	---	---	0
8/5	110.6	110.7	110.8	24	115.1	116.3	116.9	24	112.5	112.7	112.9	24	112.2	113.1	114.1	24	---	---	---	0
8/6	110.5	110.7	111.5	24	116.5	116.7	117.2	24	112.4	112.7	113.1	24	113.5	114.2	114.8	24	---	---	---	0
8/7	111.8	112.1	112.6	24	116.3	116.6	117.1	24	113.1	113.8	114.5	24	113.8	114.6	115.1	24	---	---	---	0
8/8	111.1	111.3	111.7	24	115.5	116.0	116.4	24	113.0	113.2	114.1	24	112.9	113.6	114.2	24	---	---	---	0
8/9	110.4	110.5	110.8	24	114.4	115.6	116.6	24	112.3	112.5	112.7	24	111.7	112.7	113.2	24	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</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>				
7/27	118.4	118.7	119.0	24	119.3	119.6	119.8	18	116.2	116.5	116.9	18	115.6	116.1	118.4	18	111.2	111.5	112.3	18
7/28	115.2	115.6	117.1	24	118.4	118.6	119.0	24	113.8	114.3	115.0	24	115.1	116.2	117.7	24	110.9	111.8	113.2	24
7/29	112.9	113.8	114.5	24	118.5	118.8	119.0	24	111.5	111.8	112.5	24	116.1	117.1	118.6	24	112.0	113.2	114.4	24
7/30	113.5	113.9	114.1	24	118.7	119.3	120.0	24	109.6	109.9	110.6	24	116.5	117.5	117.7	24	110.0	111.3	113.7	24
7/31	112.7	113.1	113.6	24	118.1	118.5	118.9	24	107.6	107.9	108.4	24	117.4	118.1	118.7	24	109.4	109.8	110.3	24
8/1	112.3	112.7	112.9	24	118.2	118.6	119.1	24	107.5	108.0	108.2	24	113.8	114.6	115.2	24	109.9	110.5	111.1	24
8/2	113.0	113.3	113.5	24	118.0	118.5	119.2	24	107.2	107.4	107.6	24	113.9	114.8	117.9	24	107.7	108.1	108.8	24
8/3	113.4	114.0	115.0	24	118.6	119.1	119.6	24	107.0	107.8	109.0	24	114.1	115.0	115.5	24	107.9	108.6	109.7	24
8/4	113.7	114.6	115.3	24	117.4	117.8	118.1	24	108.6	109.2	110.1	24	113.8	114.5	115.0	24	109.8	110.1	110.4	24
8/5	114.1	115.1	115.7	24	118.0	118.5	119.0	24	110.3	110.7	111.2	24	114.0	114.5	115.0	24	110.6	110.8	110.9	24
8/6	113.3	114.0	114.8	24	117.9	118.5	118.9	24	110.5	111.1	111.5	24	114.6	115.1	115.4	24	110.4	110.7	110.9	24
8/7	113.9	114.4	114.9	24	117.9	118.5	118.6	24	111.7	112.4	112.9	24	114.6	115.1	116.5	24	110.8	111.0	111.3	24
8/8	113.6	113.9	114.3	24	117.4	118.0	119.4	24	111.0	111.5	112.4	24	115.0	115.6	115.9	24	108.6	109.7	110.7	24
8/9	111.4	112.1	112.8	24	117.6	118.7	119.8	24	109.5	109.8	110.0	24	114.5	115.2	116.5	24	108.8	109.5	110.7	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>Camas\Washougal</u>			<u>Cascade Island</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</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>				
7/27	116.5	116.9	117.4	18	111.4	111.9	112.9	18	113.3	113.5	114.6	18	112.8	113.2	114.0	18	118.0	118.8	120.5	18
7/28	118.0	119.4	123.2	24	109.8	110.0	110.1	24	112.7	113.4	114.5	24	111.9	113.1	114.4	24	116.3	117.8	119.7	24
7/29	118.7	119.9	124.3	24	111.3	111.9	112.7	24	113.2	113.7	114.2	24	111.3	112.8	114.0	24	116.6	118.0	120.4	24
7/30	117.6	119.2	124.5	24	110.7	111.3	112.3	24	113.8	114.7	114.9	24	111.6	112.7	113.9	24	119.1	120.6	122.1	24
7/31	116.9	118.2	119.3	24	110.7	111.3	112.3	24	114.8	116.1	116.9	24	114.2	116.1	118.5	24	120.6	122.3	123.1	24
8/1	116.2	117.2	117.8	24	109.7	109.8	110.0	24	112.7	114.0	115.6	24	115.0	116.3	117.4	24	117.3	118.9	122.0	24
8/2	114.7	115.2	115.7	24	109.3	109.5	110.0	24	112.4	113.1	113.6	24	110.8	112.4	113.6	24	117.0	118.3	119.9	24
8/3	115.2	116.5	117.0	24	110.0	111.0	112.0	24	112.9	113.7	114.2	24	112.1	114.0	115.4	24	117.3	118.6	120.2	24
8/4	116.1	116.8	117.1	24	112.4	113.1	114.4	24	114.3	114.8	115.7	24	111.5	112.5	113.4	24	117.4	118.8	120.3	24
8/5	116.5	117.0	117.5	24	114.8	115.0	115.3	24	115.9	116.6	117.8	24	132.7	154.9	161.4	24	117.4	118.8	120.5	24
8/6	116.6	117.4	117.9	24	112.9	113.3	114.0	24	114.7	115.5	116.6	24	156.2	157.7	160.8	24	117.2	118.5	120.3	24
8/7	116.4	117.2	117.9	24	110.9	111.3	111.6	24	113.0	114.0	115.6	24	130.2	147.8	159.2	24	117.3	118.6	120.1	24
8/8	114.9	115.7	116.6	24	108.3	108.7	109.9	24	112.0	113.0	114.4	24	110.7	112.1	113.5	24	117.4	118.6	120.9	24
8/9	115.2	116.0	117.0	24	108.1	108.3	108.6	24	111.8	112.7	113.9	24	111.0	112.7	114.6	24	117.5	119.0	121.0	24

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
07/27/2012	*	---	2	---	---	0	30	38	0	---	0	0
07/28/2012	*	---	---	---	---	0	19	8	0	0	0	0
07/29/2012	*	---	---	---	---	0	0	35	0	---	0	0
07/30/2012	*	---	1	---	---	0	3	11	0	0	0	0
07/31/2012	*	---	2	---	---	4	0	0	0	---	0	0
08/01/2012	*	---	---	---	---	0	0	0	0	0	0	0
08/02/2012	*	---	---	---	---	0	0	9	0	---	0	102
08/03/2012	*	---	---	---	---	0	6	0	0	0	72	0
08/04/2012	*	---	---	---	---	0	6	9	0	---	0	0
08/05/2012	*	---	---	---	---	0	3	8	0	0	0	44
08/06/2012	*	---	---	---	---	0	0	9	0	---	0	0
08/07/2012	*	---	---	---	---	0	0	0	0	0	0	0
08/08/2012	*	---	---	---	---	0	0	0	0	---	0	0
08/09/2012	*	---	---	---	---	0	0	0	0	0	14	0
08/10/2012	*	---	---	---	---	---	---	---	0	---	0	0
<hr/>												
Total:		0	5	0	0	4	67	127	0	0	86	146
# Days:		0	3	0	0	14	14	14	15	7	15	15
Average:		0	2	0	0	0	5	9	0	0	6	10
YTD		58,098	10,919	26,417	13,494	4,042,638	2,265,998	754,588	25,797	2,179,373	4,290,562	2,538,920

COMBINED SUBYEARLING CHINOOK												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
07/27/2012	*	---	0	---	---	2,442	5,280	878	577	---	80,963	30,897
07/28/2012	*	---	---	---	---	2,066	2,949	1,048	743	83,896	78,607	14,244
07/29/2012	*	---	---	---	---	1,184	1,353	1,056	455	---	63,385	10,568
07/30/2012	*	---	1	---	---	1,239	1,567	814	300	103,676	39,254	19,763
07/31/2012	*	---	0	---	---	1,283	1,129	344	348	---	37,136	14,352
08/01/2012	*	---	---	---	---	1,129	1,598	341	239	84,317	18,679	25,582
08/02/2012	*	---	---	---	---	1,039	1,349	548	249	---	18,609	27,905
08/03/2012	*	---	---	---	---	767	816	902	165	29,752	19,500	9,908
08/04/2012	*	---	---	---	---	526	1,135	477	232	---	38,165	6,955
08/05/2012	*	---	---	---	---	551	2,035	427	317	10,034	32,428	11,371
08/06/2012	*	---	---	---	---	318	1,305	444	182	---	13,873	14,642
08/07/2012	*	---	---	---	---	590	1,454	433	193	24,848	6,510	12,964
08/08/2012	*	---	---	---	---	1,086	3,053	507	200	---	2,077	8,527
08/09/2012	*	---	---	---	---	1,329	1,510	384	294	55,085	1,275	2,629
08/10/2012	*	---	---	---	---	---	---	---	200	---	4,030	1,118
<hr/>												
Total:		0	1	0	0	15,549	26,533	8,603	4,694	391,608	454,491	211,425
# Days:		0	3	0	0	14	14	14	15	7	15	15
Average:		0	0	0	0	1,111	1,895	615	313	55,944	30,299	14,095
YTD		0	4	67	327	1,052,396	1,041,073	374,841	27,246	2,724,652	3,815,599	5,482,402

Two-Week Summary of Passage Indices

COMBINED COHO												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/27/2012	*	---	0	---	---	0	0	8	12	---	305	0
07/28/2012	*	---	---	---	---	8	0	0	6	0	0	0
07/29/2012	*	---	---	---	---	0	0	0	6	---	0	0
07/30/2012	*	---	0	---	---	0	0	0	5	0	0	0
07/31/2012	*	---	0	---	---	0	3	0	13	---	0	0
08/01/2012	*	---	---	---	---	0	0	0	3	0	0	0
08/02/2012	*	---	---	---	---	4	0	0	2	---	0	0
08/03/2012	*	---	---	---	---	0	0	0	2	0	0	0
08/04/2012	*	---	---	---	---	0	0	0	2	---	0	0
08/05/2012	*	---	---	---	---	0	0	0	2	0	0	0
08/06/2012	*	---	---	---	---	4	0	0	0	---	0	0
08/07/2012	*	---	---	---	---	5	6	0	3	0	0	0
08/08/2012	*	---	---	---	---	0	0	0	2	---	0	0
08/09/2012	*	---	---	---	---	0	0	0	5	0	0	0
08/10/2012	*	---	---	---	---	---	---	---	0	---	0	0
<hr/>												
Total:		0	0	0	0	21	9	8	63	0	305	0
# Days:		0	3	0	0	14	14	14	15	7	15	15
Average:		0	0	0	0	2	1	1	4	0	20	0
YTD		0	0	0	80	69,784	78,623	19,961	49,613	145,764	287,512	689,804

COMBINED STEELHEAD												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/27/2012	*	---	0	---	---	24	33	0	8	---	0	0
07/28/2012	*	---	---	---	---	8	10	8	4	0	0	0
07/29/2012	*	---	---	---	---	0	4	9	0	---	0	0
07/30/2012	*	---	0	---	---	4	7	33	2	0	0	0
07/31/2012	*	---	0	---	---	0	2	0	0	---	0	0
08/01/2012	*	---	---	---	---	0	3	2	0	0	0	0
08/02/2012	*	---	---	---	---	0	0	0	2	---	0	0
08/03/2012	*	---	---	---	---	0	3	0	7	2	0	0
08/04/2012	*	---	---	---	---	0	3	0	0	---	0	0
08/05/2012	*	---	---	---	---	0	0	0	2	0	0	0
08/06/2012	*	---	---	---	---	0	3	18	2	---	0	0
08/07/2012	*	---	---	---	---	5	3	9	0	0	0	0
08/08/2012	*	---	---	---	---	0	3	0	2	---	0	0
08/09/2012	*	---	---	---	---	4	11	0	0	0	0	0
08/10/2012	*	---	---	---	---	---	---	---	2	---	0	0
<hr/>												
Total:		0	0	0	0	45	85	79	31	2	0	0
# Days:		0	3	0	0	14	14	14	15	7	15	15
Average:		0	0	0	0	3	6	6	2	0	0	0
YTD		2,722	21,612	2,065	2,311	3,538,962	1,490,224	611,055	17,322	543,078	2,834,971	296,204

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)	
07/27/2012	*	---	0	---	---	8	0	0	4	---	0	291
07/28/2012	*	---	---	---	---	0	6	0	4	224	0	0
07/29/2012	*	---	---	---	---	0	0	0	2	---	0	99
07/30/2012	*	---	0	---	---	0	0	0	2	673	0	0
07/31/2012	*	---	0	---	---	12	0	0	7	---	0	0
08/01/2012	*	---	---	---	---	8	3	0	5	0	115	208
08/02/2012	*	---	---	---	---	0	0	0	4	---	0	0
08/03/2012	*	---	---	---	---	4	0	0	5	205	0	0
08/04/2012	*	---	---	---	---	5	0	0	4	---	143	0
08/05/2012	*	---	---	---	---	0	6	0	7	0	0	69
08/06/2012	*	---	---	---	---	0	3	0	2	---	0	107
08/07/2012	*	---	---	---	---	0	0	0	0	82	0	0
08/08/2012	*	---	---	---	---	0	0	0	3	---	0	0
08/09/2012	*	---	---	---	---	0	0	0	2	123	29	0
08/10/2012	*	---	---	---	---	---	---	---	5	---	49	0
<hr/>												
Total:		0	0	0	0	37	18	0	56	1,307	336	774
# Days:		0	3	0	0	14	14	14	15	7	15	15
Average:		0	0	0	0	3	1	0	4	187	22	52
YTD		5	0	0	475	43,291	37,137	18,243	46,800	1,135,211	850,668	778,541

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)	
07/27/2012	*	---	0	---	---	4	2	0	0	---	900	0
07/28/2012	*	---	---	---	---	0	10	4	0	800	2,143	0
07/29/2012	*	---	---	---	---	0	4	0	1	---	2,143	0
07/30/2012	*	---	0	---	---	0	20	0	3	200	1,500	0
07/31/2012	*	---	0	---	---	4	16	0	0	---	1,700	0
08/01/2012	*	---	---	---	---	0	6	0	0	700	767	20
08/02/2012	*	---	---	---	---	0	22	0	0	---	900	8
08/03/2012	*	---	---	---	---	0	4	12	0	100	600	66
08/04/2012	*	---	---	---	---	0	20	0	0	---	250	0
08/05/2012	*	---	---	---	---	0	4	0	0	400	300	29
08/06/2012	*	---	---	---	---	0	2	4	0	---	50	43
08/07/2012	*	---	---	---	---	0	8	0	1	100	50	14
08/08/2012	*	---	---	---	---	0	12	0	0	---	125	4
08/09/2012	*	---	---	---	---	2	12	0	0	120	317	0
08/10/2012	*	---	---	---	---	---	---	---	1	---	259	4
<hr/>												
Total:		0	0	0	0	10	142	20	6	2,420	12,004	188
# Days:		0	3	0	0	14	14	14	15	7	15	15
Average:		0	0	0	0	1	10	1	0	346	800	13
YTD		6	0	0	0	6,984	6,379	2,208	125	120,550	501,628	31,793

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.

† 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.

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.

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

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

8/10/12 12:37 PM

07/27/12 TO 08/10/12

Site	Data	Species					Grand Total
		CH0	CH1	CO	ST	SO	
LGR	Sum of NumberCollected	7,394	2	10	22	18	7,446
	Sum of NumberBarged	7,861	2	10	20	15	7,908
	Sum of NumberBypassed	0	0	0	0	3	3
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	24	0	0	0	0	24
	Sum of FacilityMorts	18	0	0	0	0	18
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	42	0	0	0	0	42
LGS	Sum of NumberCollected	17,019	42	6	51	12	17,130
	Sum of NumberBarged	16,996	44	8	55	11	17,114
	Sum of NumberBypassed	1	0	0	0	1	2
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	44	0	0	0	0	44
	Sum of FacilityMorts	80	0	0	0	0	80
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	124	0	0	0	0	124
LMN	Sum of NumberCollected	4,077	60	4	33		4,174
	Sum of NumberBarged	3,925	60	4	28		4,017
	Sum of NumberBypassed	37	0	0	1		38
	Sum of Numbertrucked	0	0	0	0		0
	Sum of SampleMorts	16	0	0	1		17
	Sum of FacilityMorts	32	0	0	3		35
	Sum of ResearchMorts	0	0	0	0		0
	Sum of TotalProjectMorts	48	0	0	4		52
MCN	Sum of NumberCollected	182,778				600	183,378
	Sum of NumberBarged	0				0	0
	Sum of NumberBypassed	182,670				600	183,270
	Sum of Numbertrucked	0				0	0
	Sum of SampleMorts	53				0	53
	Sum of FacilityMorts	55				0	55
	Sum of ResearchMorts	0				0	0
	Sum of TotalProjectMorts	108				0	108
Total Sum of NumberCollected		211,268	104	20	106	630	212,128
Total Sum of NumberBarged		28,782	106	22	103	26	29,039
Total Sum of NumberBypassed		182,708	0	0	1	604	183,313
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		137	0	0	1	0	138
Total Sum of FacilityMorts		185	0	0	3	0	188
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		322	0	0	4	0	326

YTD Transportation Summary

Source: Fish Passage Center

Updated:

8/10/12 12:37 PM

TO: 08/10/12

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	663,929	2,693,475	47,645	30,577	2,353,357	5,788,983
	Sum of NumberBarged	649,690	989,033	39,445	29,079	949,607	2,656,854
	Sum of NumberBypassed	11,455	1,702,758	8,165	1,426	1,403,470	3,127,274
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	350	180	2	9	61	602
	Sum of FacilityMorts	1,818	1,429	33	63	182	3,525
	Sum of ResearchMorts	0	75	0	0	35	110
	Sum of TotalProjectMorts	2,168	1,684	35	72	278	4,237
LGS	Sum of NumberCollected	657,649	1,498,490	53,304	25,715	971,206	3,206,364
	Sum of NumberBarged	655,836	1,109,495	51,701	25,018	683,505	2,525,555
	Sum of NumberBypassed	121	388,249	1,601	690	287,507	678,168
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	126	30	0	2	15	173
	Sum of FacilityMorts	736	716	2	5	173	1,632
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	862	746	2	7	188	1,805
LMN	Sum of NumberCollected	249,277	543,398	14,385	13,396	438,636	1,259,092
	Sum of NumberBarged	235,524	531,284	14,356	13,372	428,327	1,222,863
	Sum of NumberBypassed	12,941	11,582	19	13	9,826	34,381
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	104	60	0	3	36	203
	Sum of FacilityMorts	528	472	10	8	150	1,168
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	632	532	10	11	186	1,371
MCN	Sum of NumberCollected	1,080,660	1,040,137	72,876	555,439	247,889	2,997,001
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,080,338	1,039,959	72,876	555,364	247,862	2,996,399
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	158	43	0	28	10	239
	Sum of FacilityMorts	164	135	0	47	17	363
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	322	178	0	75	27	602
Total Sum of NumberCollected		2,651,515	5,775,500	188,210	625,127	4,011,088	13,251,440
Total Sum of NumberBarged		1,541,050	2,629,812	105,502	67,469	2,061,439	6,405,272
Total Sum of NumberBypassed		1,104,855	3,142,548	82,661	557,493	1,948,665	6,836,222
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		738	313	2	42	122	1,217
Total Sum of FacilityMorts		3,246	2,752	45	123	522	6,688
Total Sum of ResearchMorts		0	75	0	0	35	110
Total Sum of TotalProjectMorts		3,984	3,140	47	165	679	8,015

Cumulative Adult Passage at Mainstem Dams Through: 08/10

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2012		2011		10-Yr Avg.		2012		2011		10-Yr Avg.		2012		2011		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	08/09	158075	7591	167097	50945	152015	20110	81663	12235	108279	51451	92437	17241	4940	1419	4457	1509	3947	674
TDA	08/09	117071	7173	124164	40146	112195	16495	69222	10392	81123	39845	79218	13523	2802	878	2791	881	2005	410
JDA	08/08	107655	6755	103401	39823	94492	15370	60814	10415	75375	35544	72273	14191	952	324	929	430	655	213
MCN	08/09	102763	4787	101246	31750	86252	13687	64428	5104	74621	28165	68072	11090	428	59	461	142	207	42
IHR	08/09	71957	2905	69306	18161	60108	8392	14076	1461	26507	12349	18845	4400	0	0	0	0	0	0
LMN	08/09	68608	2891	69832	18094	58469	7193	14940	1557	30874	13664	19828	4238	0	0	0	0	0	0
LGS	08/09	68247	3449	67321	23492	54053	8198	14419	1579	41665	18098	18216	5011	0	0	0	0	0	0
LGR	08/09	66366	3525	59342	22063	54084	9639	12765	1643	36154	16346	16884	5611	0	0	0	0	0	0
PRD	08/07	19495	1015	15246	6030	16630	1325	48681	1269	47760	3559	56772	2183	0	0	0	0	0	0
RIS	08/06	19881	800	13089	8394	14658	2236	48001	1981	38988	12470	51543	4773	0	0	0	0	0	0
RRH	08/06	6641	459	6989	3491	5643	822	40552	1787	32026	6813	38085	3678	0	0	0	0	0	0
WEL	08/06	5311	700	4153	3969	4833	817	31787	2286	23509	5776	25985	1659	0	0	0	0	0	0
WFA	08/03	35793	1303	43601	1386	50586	1064	-	-	-	-	-	-	0	0	0	0	0	0

DAM	Coho						Sockeye			Steelhead					
	2012		2011		10-Yr Avg.		2012	2011	10-Yr Avg.	2012	2011	10-Yr Avg.	Wild 2012	Wild 2011	10-Yr Avg.
	Adult	Jack	Adult	Jack	Adult	Jack									
BON	73	19	36	21	20	3	515628	185758	130956	119601	166900	161050	50148	73639	63595
TDA	11	0	4	6	0	0	410004	138268	109296	79233	113586	70157	35344	52732	31149
JDA	9	0	41	5	3	0	394038	143522	113788	46460	75625	51513	21866	38271	22442
MCN	1	0	0	0	0	0	364088	113845	93260	35206	49938	36365	14583	21970	14478
IHR	0	0	0	0	0	0	452	1129	390	7810	25904	19975	2636	8757	6030
LMN	0	0	0	0	0	0	479	1387	486	8009	19757	17646	3376	7939	6180
LGS	0	0	0	0	0	0	444	1424	467	5966	14901	10979	3255	6959	4213
LGR	0	0	0	0	0	0	441	1479	570	10491	18862	15661	4657	8570	5311
PRD	2	0	0	0	1	0	408019	144784	118597	3430	2198	4400	0	0	0
RIS	0	0	0	0	0	0	409494	145073	115463	2528	1614	2922	1383	964	1785
RRH	0	0	0	0	0	0	362210	130865	94292	2223	1438	2127	1303	952	1206
WEL	0	0	0	0	0	0	323961	109789	91284	985	563	956	522	319	534
WFA	0	0	7	2	0	0	-	-	-	28814	27090	26755	-	-	-

PRD does not post wild steelhead numbers.
 These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.
 Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.
 Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.
 Historic counts 1997 to present were obtained from the Corps of Engineers.

Page last updated on: 08/10/12

BON counts from January 1, 2012 to March 14, 2012 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2012	12	1	1,471	497
2011	47	0	1,370	580

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											
	07/30/12	Chinook + Steelhead	27	0	0	0.00%	0.00%	0	0	0	0
	08/06/12	Chinook + Steelhead	48	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	08/01/12	Chinook + Steelhead	22	0	0	0.00%	0.00%	0	0	0	0
	08/08/12	Chinook + Steelhead	16	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/27/12	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	07/29/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	08/02/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/06/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/28/12	Chinook + Steelhead	64	0	0	0.00%	0.00%	0	0	0	0
	08/01/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/04/12	Chinook + Steelhead	94	0	0	0.00%	0.00%	0	0	0	0
	08/07/12	Chinook + Steelhead	92	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/27/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/31/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/02/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	08/07/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/09/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0