



Fish Passage Center

Weekly Report #11 - 18

July 15, 2011

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 2% and 66% of average at individual sub-basins over July. Precipitation above The Dalles has been 44% of average over July. Over the 2011 water year, precipitation has ranged between 108% and 137% of average.

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

Location	Water Year 2011 July 1-11, 2011		Water Year 2011 October 1, 2010 to July 11, 2011	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	0.42	66	24.46
SNAKE RIVER ABOVE ICE HARBOR	0.07	22	19.63	127
Columbia Above The Dalles	0.19	44	24.36	121
Kootenai	0.42	63	24.09	111
Clark Fork	0.05	13	17.84	122
Flathead	0.23	41	24.59	127
Pend Oreille/ Spokane	0.08	17	32.83	118
Central Washington	0.00	2	9.06	112
SNAKE RIVER PLAIN	0.07	32	24.12	137
Salmon/Boise/ Payette	0.05	16	20.19	113
Clearwater	0.07	13	35.01	128
SW Washington Cascades/Cowlitz	0.02	5	71.24	108
Willamette Valley	0.02	7	60.76	108

Table 2 displays the June Final and July Final runoff volume forecasts for multiple reservoirs. The July Final forecast at The Dalles between January and July is 142000 Kaf (132% of average).

Table 2. June Final and July Final Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	June Final		July Final	
	% Average (1971 -2000)	Probable Runoff Volume (Kaf)	% Average (1971 -2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	131	141000	132	142000
Grand Coulee (Jan-July)	124	78300	126	79500
Libby Res. Inflow, MT (Apr-Aug)	127	7930 8099*	129	8090
Hungry Horse Res. Inflow, MT (Jan-July)	153	3410	154	3430
Lower Granite Res. Inflow (Apr- July)	156	33700	159	34200
Brownlee Res. Inflow (Apr-July)	177	11200	173	10900
Dworshak Res. Inflow (Apr-July)	143	3770 3813*	149	3940

* Denotes COE Forecast

The flow objective at Lower Granite over the summer period (June 21st to August 31st) is 55 Kcfs; over the summer period flows at Lower Granite have averaged 143.7 Kcfs and 102.6 Kcfs over the last week.

The summer flow objective period began at McNary Dam on July 1st with a flow objective of 200 Kcfs. Over the summer flow period, flows at McNary have averaged 381.1 Kcfs and 353.4 Kcfs last week.

Grand Coulee Reservoir is at 1289.8 feet (7-14-11) and has refilled 2.1 feet over the last week. Grand Coulee is currently 0.2 feet from full (1290 feet). Outflows at Grand Coulee have ranged between 202.2 and 218.1 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2443.8 feet (7-14-11) and has refilled 5.9 feet last week. Libby is currently 15.2 feet from full (2459 feet). Outflows at Libby Dam have been 11.0-15.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3554.9 feet (7-14-11) and has refilled 3.6 feet last week. Hungry Horse is currently 5.1 feet from full (3560 feet). Outflows at Hungry Horse have been 6.8-9.4 Kcfs last week.

Dworshak is currently at an elevation of 1599.3 feet (7-14-11) and has drafted 0.4 feet last week. Dworshak is currently 0.7 feet from full (1600 feet). Outflows from Dworshak have ranged between 10.4-14.5 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2074.3 feet on July 14th, 2011 holding steady last week. Brownlee is currently 2.7 feet from full (2077 feet). Over the last week, outflows at Brownlee have ranged between 20.9-25.8 Kcfs.

Spill:

Spill levels transitioned from spring to summer levels for fish passage on June 21st at the lower Snake River projects. Flows have decreased steadily over the past week. By week's end Lower Snake River projects in the FCRPS were spilling to the Biological Opinion summer spill requirements.

Spill has occurred at Dworshak Dam this past week as the project is full and passing inflow. Over the past week, daily average flows at Lower Granite Dam have ranged from 89.5 to 122.8 Kcfs, and spill has ranged from 18.6 to 34 Kcfs. At Little Goose Dam, spill met, or slightly exceeded, the 30% of instantaneous flow Court Order through the week. Daily average spill at Little Goose dam has ranged from 26.5 Kcfs to 36.3 Kcfs. At Lower Monumental Dam spill was spill ranged from 16.9 to 23.8 Kcfs over

the past week.

Beginning April 28th, the Court Order spill operations at Ice Harbor called for an alternating schedule of 45 Kcfs spill during the day and gas cap spill at night versus 30% if instantaneous flow, on 2-day alternating blocks until mid-July. Beginning July 13, spill levels were changed to the 45 Kcfs/gas cap levels, which will continue through the rest of the summer period. Over the past week spill levels have met or exceeded the Court Order and spill has ranged from 37.8 to 62.3 Kcfs.

Project	Day/Night Spill
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	April 28-July 12: 45 Kcfs/gas cap vs. 30%/30% July 12 – August 31: 45 Kcfs / gas cap

Summer spill levels were initiated at McNary Dam on June 20th and at Bonneville Dam on June 16th. Summer spill season began at John Day and The Dalles dams on July 1st. Spill is also occurring at Grand Coulee Dam and Chief Joseph Dam. Chief Joseph is now being managed by BPA based on reserves and unit availability.

Spill at McNary Dam has been in excess of the Court Order as a result of flows in excess of hydraulic capacity and unit outages (two units are presently out of service). Spill at McNary Dam has ranged between 57.1% and 64.9% of daily average flow (daily average spill ranged from 182.6 to 254.3 Kcfs) at this project. The planned test at John Day Dam was designed to start on the evening of April 27th. Under this test, spill at John Day Dam alternates between 30% and 40% of instantaneous flow, roughly every two days. However, due to high flows the test conditions were not implementable and the test was not conducted. As flow receded, the planned 40% days were not achieved due to restricting spill based on The Dalles forebay total dissolved gas readings. Spill levels at John Day have ranged from 30.0% to 38.3% of total river flow. At The Dalles Dam, spill was also restricted to less than 40% for the three days of the past week. This reduction is based on the COE's response to

TDG levels in the Bonneville Dam forebay. Finally, at Bonneville Dam, spill exceeded the summer test operations beginning June 16th, with spill ranging from a daily average of 149.6 Kcfs to 193.7 Kcfs.

Project	Day/Night Spill
McNary	50%/50%
John Day	Pre-test: 30%/30% Testing: 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	June 16 to July 20: alternate between 95 Kcfs/95 Kcfs and 85 Kcfs/121 Kcfs. July 20th - August 31: 75 Kcfs day/GasCap night.

TDG levels this past week have decreased considerably at the FCRPS project tailraces and, with the exception of the McNary tailrace, have been near or less than the 120% criteria. Where and when possible, the COE is limiting spill on the basis of downstream forebay readings of TDG based on the Washington DOE gas standards. Gas Bubble Trauma monitoring at Little Goose Dam showed GBT in 1% of the fish examined on July 11th, with Rank 1 signs. A 3% incidence of GBT was measured at McNary Dam on July 11th. Incidence of GBT at Rock Island Dam remained low this past week. The examination on July 6th showed a 1% incidence of GBT, while the sample on July 12th and July 14th revealed a 3% and 1% incidence of GBT, respectively. The action criteria for GBT with Rank 1 signs of GBT is 15% of the population was not exceeded this past week.

Smolt Monitoring:

Smolt monitoring was ongoing at all SMP sites this past week. Subyearling Chinook predominated in the collections at all dams over the past week. The numbers of spring migrant salmonids and lamprey have continued to decline over the past few weeks. The largest numbers of subyearling Chinook are now passing the Lower Columbia dams in the reach from McNary Dam to Bonneville Dam as both wild Hanford subyearlings and large hatchery releases pass through the system.

Subyearling Chinook smolts continued to predominate in the passage indices this week at Lower Granite Dam and numbers increased slightly compared to last week. Subyearling indices averaged

6,000 per day this week compared to 5,000 per day last week. Steelhead, the second most predominant species, had passage numbers continue to decline with indices averaging 200 per day this week compared to 500 last week; yearling Chinook average weekly indices dropped from 100 to 30; sockeye indices also dropped from 140 per day last week to 50 this week. Little Goose and Lower Monumental dams showed similar patterns in passage with subyearling Chinook predominating, followed by steelhead and yearling Chinook.

Sampling at Rock Island Dam is ongoing. Subyearling Chinook predominated in the samples over the past week. Subyearling Chinook collections increased again this with the index averaging 630 per day this week compared to 540 per day last week. Steelhead and sockeye indices averaged 17 per day this week. Collections of all spring migrants have declined rapidly over the past three weeks.

Sampling at McNary Dam is every other day during “spring-like conditions”. Every other day sampling began on April 13. Subyearling Chinook predominated in passage at the site this past week, with the average passage index for subs at 150,000 per day this week compared to 160,000 last week. Indices for all spring migrants continued to go down over the past week. Combined the coho, yearling Chinook, steelhead and sockeye indices all averaged fewer than 100 fish per day.

At John Day Dam passage indices declined for all spring migrant species except sockeye while subyearling Chinook indices remained relatively high. Subyearling Chinook predominated in the sample at this site as well, with the passage index for subyearlings averaging 68,000 per day this week compared to 70,000 per day last week. Lamprey collections decreased over the past week. The lamprey collection dropped from 800 per day last week to 500 per day this week.

At Bonneville Dam the COE began reinstalling screens at Powerhouse 2 on July 12. Due to debris and high flows the COE was unable to keep the screens clean so that they removed the screens until flows subsided. It was anticipated that there might be an increase in subyearling collections once the screens are installed. But the spike in the index came just before the screens were installed, when the index for the sample ending at 7 am on July 12, just prior to installing screens, rose to over 70,000. But subsequent days have seen it decline to less than 50,000 so it

is hard to determine at this point what impact the additions of screens is having. Given the biased collections the largest indices over the past week have been for subyearling Chinook which averaged 53,000 per day this week compared to 60,000 per day last 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. Approximately 50,000 sockeye pre-smolts were released into Redfish Lake on July 12th. These sockeye pre-smolts were 100% adipose clipped but are not expected to out-migrate until the spring of 2012. There are no other 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. There were no scheduled releases to this zone this week. In addition, there are no new releases of juvenile salmonids scheduled for the next two weeks.

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

Adult Passage:

Daily passage numbers at Bonneville Dam ranged between 927 and 1,398 adult summer Chinook in the last week. The 2011 summer Chinook count of 94,981 is 1.06 times greater than the 2010 count and about 1.21 times greater than the 10 year average. The 2011 Bonneville Dam summer Chinook jack count of 44,841 is 3.18 times greater than the 2010 count and 3.83 times greater than the 10 year average count. At McNary Dam 57,583 adult summer Chinook have been counted. The 2011 McNary adult summer Chinook is about 99.5% of the 2010, while being 1.04 times greater than the 10 average counts. The 2011 McNary Dam summer Chinook jack count of 23,124 is about 3.54 times greater than the 2010 count of 6,526 and about 3.18 times greater than the 10 year average count of 7,266. The 2011 adult summer Chinook count at Lower Granite Dam in the Snake River of 32,126 is about 1.19 times greater than the 2010 count and 2.41 times greater than the 10 year average count. The 2011 Lower Granite summer Chinook jack count of 13,774 is about 3.02 times greater than the 2010 count and

3.69 times greater than the 10 year average count.

The Bonneville Dam 2011 steelhead count of 26,843 is about 27.9% of the 2010 count of 95,905 and about 55.3% of the 10 year average count of 48,528. At Rock Island Dam, as of July 11th, 136 adult steelhead had been counted and at Rock Reach Dam 597 had been counted. In the Snake River, this year's Lower Granite steelhead count of 12,731 is about 89.9% of the 2010 count of 14,157, while being 1.15 times greater than the 10 year average of 11,013. The 2011 Lower Granite wild steelhead count as of July 14th was 5,911. At Willamette Falls Dam, the 2011 count for steelhead was 24,193, as of July 7th. This year's steelhead count is about 82.3% of the 2010 count of 29,387 and about 91.3% of the 10 year average count of 26,490 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 2,514 and 5,262 last week. The 2011 adult sockeye count at Bonneville Dam of 175,990 is about 46.2% of the 2010 count of 381,022, while being 1.45 times greater than the 10 year average count of 121,637. The 2011 McNary Dam adult sockeye count of 92,567 is about 34.4% of the 2010 count, while being 1.05 times greater than the 10 year average count. 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 2011 adult sockeye count of 705 is 67.1% of the 2010 count, while being 2.81 times greater than the 10 year average count. The Lower Granite Dam 2011 adult sockeye count of 522 is about 36.1% of the 2010 count, while being 1.63 times greater than the 10 year average count.

As of July 14th at Bonneville Dam, the adult Shad count was 929,607. This year's shad count is about 89.9% of the 2010 count of 1,034,246 and about 30.4% of the 10 year average count of 3,053,163.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: 7/1/2011 to 07/14/11

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2012	50,054	07-12-11	07-12-11	Redfish Lake	Salmon River (ID)
Total					50,054				
National Marine Fisheries Service National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2011	98,000	06-20-11	07-08-11	Big Canyon (Clearwater River)	Clearwater River M F
Service Total					98,000				
Grand Total					148,054				

CH = Chinook, ST = Steelhead, CO = Coho, SO = Sockeye, CT = Cutthroat Trout, CM = Chum

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 7/15/2011 to 7/28/2011

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
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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>24 h</u>	<u>12 h</u>	<u>#</u>		
	<u>Avg</u>	<u>Avg</u>		<u>High</u>	<u>Avg</u>		<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>		<u>High</u>	<u>Avg</u>		<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>
7/1	104.0	104.4	105.0	23	130.9	131.5	133.0	22	122.8	123.1	123.4	24	121.9	122.8	123.9	22	119.2	119.8	120.2	24
7/2	103.8	104.2	104.4	24	130.6	131.3	131.9	23	122.8	123.1	123.5	24	122.4	122.9	123.5	23	121.4	123.0	123.7	24
7/3	104.9	105.1	105.3	24	130.8	131.0	131.2	20	123.1	123.4	123.8	24	121.5	122.1	123.7	20	122.2	122.5	123.1	24
7/4	104.8	105.1	105.4	24	130.2	130.7	131.1	23	123.1	123.4	123.6	24	119.2	119.8	120.2	23	120.7	121.0	121.3	24
7/5	104.8	104.9	105.3	24	130.1	130.3	130.8	20	122.6	122.7	122.9	21	122.2	123.4	124.0	20	119.4	119.7	120.1	24
7/6	105.1	105.2	105.4	22	130.1	130.7	131.1	21	122.7	123.0	123.6	24	122.9	123.0	123.3	21	120.9	122.7	123.4	24
7/7	105.9	106.3	106.6	24	130.9	131.5	132.2	24	123.8	124.1	124.4	24	123.1	123.9	124.6	24	122.8	123.4	124.1	24
7/8	105.9	106.3	106.9	24	129.8	130.1	130.5	22	123.3	123.5	123.7	24	121.7	122.2	122.9	22	120.8	121.2	121.6	24
7/9	105.4	105.8	106.0	23	129.7	130.3	130.9	21	123.1	123.3	123.4	24	120.8	121.1	121.4	21	121.2	121.6	121.9	24
7/10	105.2	105.4	105.6	24	128.0	129.0	129.7	21	122.4	122.6	123.0	24	120.8	121.3	122.0	21	120.6	120.8	121.1	24
7/11	105.7	105.9	106.0	24	124.5	125.5	126.9	22	121.7	122.2	122.5	24	121.3	123.2	123.7	22	120.0	120.5	120.8	24
7/12	105.7	106.1	106.5	24	124.7	125.0	125.3	24	121.9	122.2	122.4	23	122.1	122.5	122.8	24	119.4	119.8	120.5	24
7/13	106.1	106.3	106.6	23	123.3	124.0	125.2	20	122.2	122.4	122.7	24	122.9	123.5	125.1	20	119.5	119.7	119.8	24
7/14	106.7	107.2	107.5	23	123.0	123.8	124.1	20	122.1	122.4	122.7	24	121.5	121.8	122.1	20	119.4	120.0	120.3	24

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>		
	<u>Avg</u>	<u>Avg</u>		<u>High</u>	<u>Avg</u>		<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>		<u>High</u>	<u>Avg</u>		<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>
7/1	115.9	117.0	118.4	24	116.2	116.8	117.2	24	122.5	124.3	127.1	24	118.6	120.4	122.6	24	124.0	126.3	130.3	24
7/2	116.8	117.1	117.4	24	118.3	119.2	119.8	24	128.3	129.1	129.6	24	122.3	124.0	126.5	24	122.5	123.2	123.5	24
7/3	116.1	116.9	117.3	24	118.4	118.7	119.2	24	128.8	129.2	129.9	24	126.1	126.7	127.0	24	123.3	124.2	124.9	24
7/4	116.2	116.8	117.6	24	117.5	118.4	118.9	24	125.5	125.9	126.2	24	125.1	125.6	126.2	24	121.8	123.1	123.6	24
7/5	116.5	118.4	119.2	24	117.3	117.7	117.8	24	125.9	126.4	127.2	24	124.0	124.8	125.2	24	122.1	122.8	123.7	24
7/6	117.4	117.9	118.8	24	118.4	119.2	119.5	24	127.7	129.3	131.0	24	125.1	126.1	127.5	24	124.0	124.8	125.4	24
7/7	116.9	117.3	117.5	24	119.0	119.5	119.8	24	126.0	127.0	127.7	24	125.1	126.8	127.6	24	123.6	124.3	125.0	24
7/8	117.4	118.3	118.8	24	116.9	117.4	117.7	24	124.2	125.1	126.7	24	121.6	122.1	122.7	24	123.5	124.0	125.2	24
7/9	116.6	117.6	118.4	24	117.6	118.1	118.5	24	123.0	123.7	124.0	24	121.1	121.5	122.2	24	121.8	122.8	123.8	24
7/10	117.4	118.3	118.7	24	118.6	119.2	119.7	24	125.0	126.8	128.1	24	121.2	121.4	121.9	24	121.4	122.3	122.6	24
7/11	117.5	117.8	118.2	24	118.1	118.4	118.7	23	123.4	125.2	126.4	23	122.9	123.9	124.6	24	121.8	122.8	123.8	24
7/12	118.3	118.7	119.3	24	117.7	118.0	118.5	24	122.8	123.5	124.3	24	121.6	122.4	122.8	24	120.6	121.2	121.6	24
7/13	117.2	118.0	119.2	24	117.4	117.8	118.0	24	124.0	125.0	125.4	24	120.8	121.0	121.2	24	120.2	120.6	121.2	24
7/14	117.3	117.9	118.4	24	116.8	117.0	117.2	24	123.7	124.3	124.7	24	121.1	121.2	121.4	24	119.8	120.6	121.7	24

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>		
	<u>Avg</u>	<u>Avg</u>		<u>High</u>	<u>Avg</u>		<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>		<u>High</u>	<u>Avg</u>		<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>
7/1	119.9	121.0	122.8	24	107.7	107.7	122.9	10	121.3	122.8	123.4	24	124.8	125.5	125.7	24	123.9	125.6	126.3	24
7/2	120.8	122.0	122.5	24	123.9	124.9	125.4	24	123.2	124.5	125.2	24	126.7	127.2	127.6	24	126.6	128.0	128.9	24
7/3	123.6	124.2	124.8	24	126.0	126.4	126.8	24	120.8	121.3	122.2	24	126.7	127.6	127.9	24	125.3	126.3	127.7	24
7/4	122.3	123.4	124.1	24	125.2	126.0	126.5	24	121.1	122.7	123.2	24	123.7	124.3	124.5	24	124.4	125.4	127.2	24
7/5	121.8	122.1	122.7	24	125.2	125.5	126.2	24	122.5	123.8	124.4	24	125.0	126.6	127.4	24	123.3	124.2	124.9	24
7/6	123.8	124.5	125.0	24	126.6	127.1	127.9	24	123.6	124.6	125.8	24	126.8	127.9	130.0	24	125.8	126.9	127.5	24
7/7	123.3	124.4	125.7	24	126.3	127.0	127.8	24	123.3	124.8	125.9	24	126.3	127.2	128.7	24	124.2	124.5	124.9	24
7/8	121.2	121.6	122.5	24	124.3	124.6	125.5	24	118.4	118.7	118.9	24	125.7	126.8	127.8	24	123.9	124.9	126.2	24
7/9	120.9	121.4	122.1	24	123.6	124.0	124.4	24	120.6	121.8	122.9	24	123.4	124.7	126.1	24	124.1	125.1	126.0	24
7/10	120.4	121.4	122.0	24	123.2	124.1	124.5	24	121.2	122.6	123.5	24	124.1	124.6	125.0	24	122.1	123.8	125.0	24
7/11	122.0	123.4	124.3	24	125.5	127.4	128.3	24	121.2	122.1	122.8	24	122.9	123.7	124.8	24	123.2	123.9	124.5	24
7/12	120.4	121.4	122.2	24	123.0	123.8	124.4	24	120.5	121.6	122.2	24	123.2	123.8	124.6	24	120.9	121.6	122.3	24
7/13	120.0	120.5	120.8	24	122.2	122.6	123.0	24	120.2	120.6	121.6	24	123.5	123.9	124.7	24	121.0	121.4	122.0	24
7/14	119.9	120.9	121.8	24	122.5	123.4	123.9	24	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst			Pasco			Dworshak			Clrwtr-Peck			Anatone							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/1	124.1	125.4	126.0	24	115.7	116.9	117.7	24	100.9	101.1	101.2	24	103.2	104.1	104.7	24	108.5	109.2	109.8	24
7/2	125.8	126.8	127.4	24	118.7	119.9	120.4	24	101.7	101.8	102.0	24	103.2	104.2	104.9	24	108.1	108.8	109.3	24
7/3	125.3	125.8	126.6	24	118.9	119.5	120.2	24	104.5	105.8	106.4	24	103.2	104.2	104.9	24	107.1	107.6	108.2	24
7/4	124.1	124.7	125.1	24	117.9	118.6	119.2	24	107.3	108.7	110.3	24	103.9	104.9	105.4	24	106.5	107.2	107.8	24
7/5	123.9	124.7	125.2	24	117.5	118.5	119.2	24	110.8	112.2	112.3	24	104.6	105.6	106.4	24	106.3	107.0	107.6	24
7/6	126.1	127.3	128.6	24	118.1	119.4	120.1	24	110.1	112.1	112.5	24	104.9	105.6	106.4	24	106.2	106.9	107.5	24
7/7	125.1	125.5	126.8	24	119.0	120.1	121.5	24	107.8	109.7	112.9	24	104.4	104.9	105.7	24	105.7	106.3	106.7	24
7/8	124.7	125.2	125.6	24	116.0	117.4	118.2	24	109.0	109.7	109.9	24	104.2	105.0	105.7	24	105.3	106.0	106.6	24
7/9	124.5	125.0	125.5	24	117.6	118.3	118.6	24	107.1	109.8	110.1	24	104.5	105.3	105.8	24	105.4	106.2	106.9	24
7/10	123.9	124.8	125.2	24	117.4	118.0	118.6	24	104.4	105.2	105.7	24	103.0	103.7	104.1	24	105.2	105.9	106.6	24
7/11	124.4	124.8	125.2	24	117.7	118.8	119.5	24	102.3	102.8	104.0	24	102.8	103.4	103.9	24	105.2	106.2	107.0	24
7/12	123.2	123.8	124.2	24	116.8	117.8	118.8	24	105.5	106.4	106.7	24	103.1	104.2	105.0	24	104.8	105.7	106.4	24
7/13	122.9	123.2	123.6	24	116.0	116.9	117.6	24	107.5	107.9	108.2	24	103.4	104.0	104.5	24	103.6	104.0	104.5	24
7/14	---	---	---	0	116.6	117.1	117.7	24	107.9	108.2	108.6	24	104.0	104.7	105.2	24	103.8	104.6	105.4	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/1	102.6	103.5	104.1	24	106.1	107.0	107.5	24	126.0	129.0	129.8	24	113.1	114.7	117.5	24	120.3	121.8	123.8	24
7/2	102.9	103.8	104.5	24	108.3	109.1	109.5	24	119.7	120.8	121.7	24	121.9	123.9	124.8	24	118.4	118.9	119.1	24
7/3	102.5	103.2	104.0	24	108.1	108.4	109.2	24	118.5	119.9	120.2	24	119.9	121.6	124.1	24	117.4	117.7	118.2	24
7/4	103.0	103.9	104.5	24	106.5	106.8	107.7	24	117.3	118.7	119.8	24	114.7	115.0	116.1	24	116.6	117.1	118.6	24
7/5	103.5	104.5	105.4	24	106.1	106.5	106.9	24	120.0	121.3	121.6	24	113.5	113.9	114.3	24	117.1	117.6	117.7	24
7/6	104.1	105.0	106.1	24	106.6	107.1	107.6	24	120.7	121.1	121.6	24	113.4	113.9	114.6	24	117.1	117.3	117.4	24
7/7	103.7	104.8	105.7	24	107.1	107.3	107.4	24	120.0	120.5	120.7	24	116.7	117.7	118.5	24	116.6	116.9	118.2	24
7/8	103.2	104.3	105.3	24	105.7	106.2	107.7	24	117.2	118.8	119.8	24	115.0	115.4	116.4	24	116.5	117.0	117.3	24
7/9	103.6	104.8	105.6	24	104.8	105.0	105.5	24	115.0	117.9	119.5	24	112.8	113.1	113.8	24	115.6	115.9	116.5	24
7/10	102.9	103.7	104.5	24	105.3	105.4	105.5	24	114.8	117.5	120.2	24	112.7	112.9	113.3	24	115.6	116.6	119.0	24
7/11	102.7	104.0	104.9	24	105.6	105.8	105.9	24	113.2	114.5	119.8	24	112.5	112.6	112.8	24	114.3	115.0	116.7	24
7/12	102.5	103.8	104.9	24	105.0	105.2	105.3	24	111.7	112.1	113.3	24	113.2	114.0	114.4	24	114.2	114.7	115.3	24
7/13	102.4	103.1	103.9	24	104.5	104.6	104.7	24	111.9	112.4	112.7	24	112.0	112.5	113.2	24	113.9	114.3	115.4	24
7/14	102.8	103.9	105.0	24	103.7	103.8	104.2	24	111.2	111.5	112.3	24	110.4	110.7	111.0	24	112.9	113.2	115.4	24

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

Date	Lower Mon.			L. Mon. Tlwr			Ice Harbor			Ice Harbor Tlwr			McNary-Oregon							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/1	118.2	120.2	122.4	24	122.8	123.6	125.2	24	117.8	119.5	121.1	24	123.2	124.8	127.0	24	---	---	---	0
7/2	121.0	121.8	122.8	24	121.0	121.5	122.0	24	121.0	121.2	121.5	24	120.5	120.7	120.9	24	---	---	---	0
7/3	120.9	121.1	121.4	24	119.6	120.3	120.4	24	119.5	120.1	121.1	24	120.1	120.4	120.7	24	---	---	---	0
7/4	118.9	119.3	120.3	24	118.0	119.1	121.3	24	118.1	118.3	118.6	24	119.6	119.8	120.2	24	---	---	---	0
7/5	117.6	117.8	118.0	24	119.4	119.8	121.3	24	117.9	118.2	118.4	24	120.3	120.8	121.1	24	---	---	---	0
7/6	118.1	118.9	119.2	24	119.8	120.3	120.7	24	118.2	118.7	118.9	24	120.4	121.0	121.4	24	---	---	---	0
7/7	118.7	119.1	119.2	24	119.1	120.3	122.1	24	118.7	119.2	119.6	24	119.2	120.3	120.6	24	---	---	---	0
7/8	116.0	116.2	116.7	24	119.5	120.1	120.6	24	116.9	117.4	118.0	24	118.4	119.8	120.8	24	---	---	---	0
7/9	116.0	116.5	116.8	24	119.3	120.1	121.0	24	115.7	115.8	116.1	24	118.1	118.9	120.0	24	---	---	---	0
7/10	116.9	117.1	117.3	24	119.5	120.2	121.2	24	115.9	116.2	116.4	24	117.5	117.9	118.3	24	---	---	---	0
7/11	117.2	118.0	118.4	24	119.1	119.5	120.3	24	116.6	116.9	117.3	24	117.2	117.9	118.9	24	---	---	---	0
7/12	116.4	116.9	117.9	24	118.3	118.8	119.4	24	116.3	116.5	117.0	24	116.0	116.4	116.9	24	---	---	---	0
7/13	114.5	115.1	115.9	24	117.7	117.9	118.5	24	115.3	115.6	116.1	24	116.5	117.2	118.2	24	---	---	---	0
7/14	113.7	113.8	114.0	24	117.6	118.1	119.8	24	113.6	114.0	114.6	24	117.0	117.5	118.3	24	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<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>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
7/1	113.9	115.5	116.5	24	126.8	127.2	127.5	24	113.2	113.6	113.9	24	121.0	121.9	122.1	24	114.6	115.9	116.7	24
7/2	117.2	118.5	119.1	24	127.5	127.7	128.0	24	113.9	114.9	116.0	24	120.7	121.2	122.3	24	115.4	116.0	116.6	24
7/3	118.3	118.6	118.7	24	126.7	126.8	127.1	24	117.0	118.1	118.9	24	119.5	119.9	120.1	24	114.1	115.0	116.1	24
7/4	117.6	118.4	118.9	24	126.1	126.5	127.1	24	119.5	119.8	120.1	24	119.7	120.1	120.5	24	117.1	117.9	118.4	24
7/5	118.1	118.7	119.1	24	125.5	125.9	126.2	24	118.7	119.2	119.8	24	118.7	119.1	119.4	24	116.4	117.4	117.7	24
7/6	118.4	119.1	119.7	24	125.6	126.0	126.2	24	121.3	122.0	122.5	24	118.9	119.2	119.5	24	117.7	118.8	119.3	24
7/7	118.3	118.9	119.2	24	125.7	126.0	126.4	24	121.6	122.2	122.5	24	119.3	119.7	120.8	24	116.2	117.3	118.2	24
7/8	115.0	115.3	115.6	24	125.5	125.7	125.9	24	116.6	117.3	118.7	24	119.1	119.2	119.3	24	114.1	115.1	115.6	24
7/9	115.3	116.3	117.6	24	125.4	125.6	126.0	24	115.3	115.5	115.8	24	118.9	119.0	119.3	24	114.4	114.9	115.4	24
7/10	117.6	118.0	118.3	24	124.5	124.8	125.1	24	113.8	114.4	115.0	24	118.8	119.0	119.4	24	113.3	113.9	114.4	24
7/11	117.5	117.8	118.1	24	124.6	125.2	125.4	24	117.2	118.2	118.6	24	118.8	119.3	119.8	24	114.5	115.4	116.2	24
7/12	116.5	116.8	117.1	24	123.4	123.8	125.0	24	117.6	117.8	117.9	24	117.9	118.3	119.0	24	114.9	115.2	115.5	24
7/13	114.3	114.6	115.7	24	123.7	123.9	124.0	24	115.7	116.1	116.6	24	116.5	117.2	118.2	24	113.9	114.1	114.4	24
7/14	113.2	113.6	113.8	24	124.9	125.1	125.2	24	113.5	113.8	114.5	24	117.4	117.8	118.7	24	113.1	113.5	114.1	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>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
7/1	119.3	120.3	121.1	24	117.6	118.8	119.5	24	122.7	123.6	124.4	24	120.4	122.1	122.9	24	---	---	---	0
7/2	120.0	120.5	121.0	24	120.3	120.7	121.1	24	124.9	125.2	125.5	24	123.3	124.4	125.3	24	---	---	---	0
7/3	118.4	119.0	119.9	24	116.4	117.2	119.4	24	122.4	123.0	124.2	24	121.7	122.1	122.5	24	---	---	---	0
7/4	120.8	121.4	122.1	24	116.5	117.6	118.2	24	122.3	122.6	122.9	24	120.8	121.4	121.9	24	---	---	---	0
7/5	120.1	120.3	120.6	24	118.8	119.2	119.6	24	120.8	121.0	121.2	24	120.6	121.0	121.5	24	---	---	---	0
7/6	120.7	121.5	122.8	24	118.2	118.5	118.8	24	120.6	120.8	121.0	24	119.5	120.3	121.3	24	---	---	---	0
7/7	119.9	121.1	122.1	24	115.6	116.4	117.7	24	119.2	119.7	120.3	24	117.5	118.0	118.9	24	---	---	---	0
7/8	117.5	118.2	118.6	24	113.6	113.9	114.4	24	118.3	118.5	118.8	24	117.1	117.8	118.3	24	---	---	---	0
7/9	117.9	118.3	118.4	24	114.6	115.0	115.3	24	118.5	118.7	118.8	24	117.2	118.0	118.7	24	---	---	---	0
7/10	117.2	117.7	118.1	24	115.5	115.7	115.9	24	118.8	119.2	119.7	24	117.6	118.5	119.3	24	---	---	---	0
7/11	119.0	119.7	120.0	24	114.5	114.9	115.5	24	120.5	121.3	123.0	24	117.7	118.8	119.6	24	---	---	---	0
7/12	119.0	119.4	120.2	24	114.8	115.4	115.7	24	118.8	119.1	119.7	24	118.5	118.9	119.3	24	---	---	---	0
7/13	118.5	118.8	118.9	24	115.2	115.5	115.7	24	118.3	118.6	118.8	24	117.1	117.8	118.2	24	---	---	---	0
7/14	118.4	118.9	119.6	24	115.1	115.3	115.7	24	118.5	118.8	120.0	24	116.7	117.6	118.4	24	---	---	---	0

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
Little Goose Dam											
	07/04/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/11/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Lower Monumental Dam											
	07/06/11	Chinook + Steelhead	18	0	0	0.00%	0.00%	0	0	0	0
	07/13/11	Chinook + Steelhead	44	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/01/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/05/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/07/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/11/11	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
Bonneville Dam											
	07/03/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/05/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/09/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/12/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/06/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/07/11	Chinook + Steelhead	100	6	6	6.00%	0.00%	4	2	0	0
	07/12/11	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	07/14/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0

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
07/01/2011	216.7	48.4	213.1	82.9	245.0	71.8	244.4	78.7	251.2	97.2	271.2	144.9	271.6	129.2
07/02/2011	220.2	50.1	222.4	94.7	245.3	100.2	262.0	67.3	263.1	99.2	271.4	158.8	273.0	129.6
07/03/2011	205.2	37.4	206.8	103.6	230.2	99.0	248.6	75.5	255.8	98.9	273.0	158.5	279.1	141.5
07/04/2011	196.2	26.6	197.4	86.2	220.7	80.5	228.5	50.9	235.0	69.3	245.4	130.9	248.1	109.6
07/05/2011	223.1	53.0	219.5	82.9	237.1	82.0	234.7	55.1	236.5	70.1	242.2	136.4	242.4	121.1
07/06/2011	224.2	54.5	226.0	89.1	253.9	91.1	262.9	106.0	264.8	74.1	281.5	157.7	284.5	169.4
07/07/2011	223.6	57.7	224.4	101.6	258.3	88.3	249.2	99.0	254.2	70.0	266.3	149.8	271.6	148.2
07/08/2011	218.1	48.6	218.8	91.3	253.0	80.7	247.0	100.8	254.1	69.1	274.4	155.5	279.0	143.1
07/09/2011	210.9	41.8	205.9	79.5	244.9	72.4	234.6	70.7	239.5	70.0	252.6	131.1	256.9	125.4
07/10/2011	211.3	42.6	215.9	100.8	249.0	78.9	245.1	72.8	244.5	70.0	254.8	135.1	255.6	136.9
07/11/2011	208.3	40.5	204.2	93.4	233.0	65.5	233.6	75.4	233.1	76.2	250.5	126.0	255.5	136.1
07/12/2011	205.9	37.9	198.8	78.6	226.3	63.4	220.4	50.3	221.5	52.8	236.1	123.9	241.8	129.8
07/13/2011	202.9	46.3	208.0	96.5	233.7	74.2	228.6	50.2	230.1	44.7	243.6	128.8	247.0	139.4
07/14/2011	202.2	31.7	198.3	84.7	223.8	64.6	222.3	62.2	225.2	46.8	247.7	140.5	248.1	130.9

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

Date	Dworshak		Hells Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/01/2011	9.5	0.0	34.8	39.4	168.1	75.8	161.1	52.1	171.7	74.2	179.6	96.6
07/02/2011	9.5	0.0	31.2	34.8	151.4	42.2	143.4	40.2	147.6	50.7	153.9	73.6
07/03/2011	10.3	0.8	27.4	32.7	145.5	38.3	136.8	40.7	141.9	44.8	149.3	75.4
07/04/2011	12.0	2.5	27.8	30.5	142.0	34.4	134.5	40.6	137.6	40.8	143.8	73.0
07/05/2011	13.1	3.6	26.4	30.5	141.7	45.4	133.5	41.8	136.8	46.2	142.5	74.2
07/06/2011	13.4	3.9	25.4	30.5	138.6	46.6	132.1	41.3	135.9	53.9	141.0	71.1
07/07/2011	13.5	4.0	24.5	26.4	131.7	39.5	123.9	37.5	126.4	43.1	131.6	63.0
07/08/2011	14.2	4.7	23.9	25.0	122.8	34.0	118.0	36.3	120.1	23.8	125.6	57.0
07/09/2011	14.5	4.9	22.4	26.4	114.7	27.6	109.9	34.9	111.6	21.0	118.3	58.5
07/10/2011	12.4	2.9	22.1	25.7	106.3	26.3	103.7	34.8	105.6	21.7	110.1	62.3
07/11/2011	11.1	1.5	23.2	25.2	96.9	21.3	95.3	29.9	96.0	19.5	102.3	48.7
07/12/2011	10.4	0.9	22.3	22.2	93.8	18.5	91.3	27.3	90.8	16.9	92.8	37.8
07/13/2011	13.3	3.8	25.6	23.0	94.1	18.6	91.8	27.4	89.8	17.0	93.9	53.0
07/14/2011	13.7	4.2	---	---	89.5	18.6	88.8	26.5	89.4	17.2	93.6	62.1

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
07/01/2011	430.4	281.0	436.3	158.7	418.3	168.7	426.2	211.2	93.3	109.3
07/02/2011	433.5	283.9	442.4	149.3	428.2	171.3	439.9	225.6	92.7	109.3
07/03/2011	422.1	275.4	420.8	137.6	405.7	158.8	432.7	217.6	90.3	112.4
07/04/2011	407.2	261.2	419.9	131.6	409.4	161.1	433.2	218.6	91.3	110.9
07/05/2011	381.5	237.3	376.0	114.2	359.3	134.5	377.7	161.9	93.7	109.6
07/06/2011	386.9	238.3	384.2	117.5	370.3	138.4	388.6	170.7	94.1	111.4
07/07/2011	400.0	254.2	398.0	135.3	386.0	145.5	399.5	184.1	93.4	109.6
07/08/2011	395.2	254.3	397.2	134.2	376.3	132.0	398.1	181.9	93.5	110.2
07/09/2011	386.0	243.0	387.8	119.3	376.3	129.7	391.9	176.4	93.1	110.0
07/10/2011	363.2	213.4	378.6	122.8	365.4	129.4	382.4	167.3	94.1	108.6
07/11/2011	358.8	217.8	357.0	133.5	343.2	135.8	369.7	193.7	71.3	92.3
07/12/2011	319.7	182.6	313.8	120.1	306.3	121.6	333.2	165.0	75.4	80.4
07/13/2011	314.6	189.7	314.9	94.6	295.0	118.3	321.4	149.6	76.0	83.4
07/14/2011	336.3	218.1	332.8	106.3	321.0	128.3	328.3	152.7	74.1	89.1

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/01/2011	*	---	---	---	349	576	109	10	---	152	185	
07/02/2011	*	---	---	---	201	388	191	0	9	0	193	
07/03/2011	*	---	---	---	68	246	269	2	---	149	263	
07/04/2011	*	---	---	---	102	288	144	5	301	247	0	
07/05/2011	*	---	---	---	65	118	158	2	---	0	0	
07/06/2011	*	---	0	---	31	0	25	0	281	0	0	
07/07/2011	*	---	1	---	44	160	17	2	---	0	231	
07/08/2011	*	---	1	---	43	43	13	2	14	0	240	
07/09/2011	*	---	---	---	69	44	150	4	---	0	0	
07/10/2011	*	---	---	---	0	45	6	0	0	0	0	
07/11/2011	*	---	---	---	38	44	30	0	---	0	0	
07/12/2011	*	---	---	---	37	19	15	0	3	229	0	
07/13/2011	*	---	---	---	13	43	45	0	---	0	0	
07/14/2011	*	---	---	---	12	41	15	2	6	0	0	
07/15/2011	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	2	0	1,072	2,055	1,187	29	614	777	1,112	
# Days:		0	3	0	14	14	14	14	7	14	14	
Average:		0	1	0	77	147	85	2	88	56	79	
YTD		31,090	30,210	12,492	18,836	3,831,040	2,528,536	1,236,413	26,455	1,979,310	2,936,216	1,321,987

COMBINED SUBYEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/01/2011	*	---	---	---	6,942	22,502	6,779	672	---	79,874	60,535	
07/02/2011	*	---	---	---	5,336	19,224	5,208	458	217,732	55,329	72,138	
07/03/2011	*	---	---	---	4,108	12,948	4,894	438	---	60,068	62,805	
07/04/2011	*	---	---	---	4,672	16,295	1,499	509	119,582	99,063	53,651	
07/05/2011	*	---	---	---	4,076	7,062	2,904	740	---	66,083	63,485	
07/06/2011	*	---	1	---	5,133	4,681	1,917	447	148,617	70,644	56,040	
07/07/2011	*	---	1	---	3,773	4,731	1,546	518	---	59,299	54,787	
07/08/2011	*	---	0	---	2,198	3,297	984	403	85,064	42,385	52,845	
07/09/2011	*	---	---	---	4,542	4,959	3,641	785	---	78,155	52,983	
07/10/2011	*	---	---	---	6,758	3,966	76	725	199,427	62,426	45,234	
07/11/2011	*	---	---	---	7,547	5,038	1,131	641	---	75,175	53,339	
07/12/2011	*	---	---	---	5,696	3,694	1,384	447	169,865	89,524	71,563	
07/13/2011	*	---	---	---	4,677	3,248	2,719	631	---	62,001	48,032	
07/14/2011	*	---	---	---	9,808	9,768	3,017	751	140,838	65,165	49,748	
07/15/2011	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	2	0	75,266	121,413	37,699	8,165	1,081,125	965,191	797,185	
# Days:		0	3	0	14	14	14	14	7	14	14	
Average:		0	1	0	5,376	8,672	2,693	583	154,446	68,942	56,942	
YTD		9	38	12	163	1,061,536	1,222,676	298,772	20,187	2,239,112	1,759,544	3,998,186

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)	
07/01/2011	*	---	---	---	50	0	0	18	---	254	370	
07/02/2011	*	---	---	---	0	0	0	3	0	229	0	
07/03/2011	*	---	---	---	34	0	0	14	---	0	0	
07/04/2011	*	---	---	---	0	0	29	2	0	0	0	
07/05/2011	*	---	---	---	13	0	0	8	---	208	0	
07/06/2011	*	---	0	---	31	0	0	6	536	0	0	
07/07/2011	*	---	0	---	0	44	0	4	---	210	0	
07/08/2011	*	---	0	---	0	0	0	8	0	0	0	
07/09/2011	*	---	---	---	14	0	0	9	---	0	0	
07/10/2011	*	---	---	---	13	0	0	2	0	291	262	
07/11/2011	*	---	---	---	13	15	0	15	---	152	0	
07/12/2011	*	---	---	---	50	14	7	0	0	0	0	
07/13/2011	*	---	---	---	75	0	7	8	---	0	0	
07/14/2011	*	---	---	---	37	57	0	4	0	144	0	
07/15/2011		---	---	---	---	---	---	---	---	---	---	
Total:		0	0	0	330	130	43	101	536	1,488	632	
# Days:		0	3	0	14	14	14	14	7	14	14	
Average:		0	0	0	24	9	3	7	77	106	45	
YTD		0	0	0	218	80,624	80,086	18,964	46,362	187,254	476,418	439,274

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)	
07/01/2011	*	---	---	---	1,313	1,037	109	53	---	557	370	
07/02/2011	*	---	---	---	522	423	127	47	0	0	0	
07/03/2011	*	---	---	---	274	633	179	24	---	510	0	
07/04/2011	*	---	---	---	512	575	115	34	3	0	0	
07/05/2011	*	---	---	---	392	187	113	14	---	832	0	
07/06/2011	*	---	0	---	323	147	31	15	0	410	0	
07/07/2011	*	---	1	---	340	131	68	34	---	0	0	
07/08/2011	*	---	3	---	159	362	13	29	0	0	0	
07/09/2011	*	---	---	---	468	160	69	28	---	0	0	
07/10/2011	*	---	---	---	188	151	25	12	0	0	0	
07/11/2011	*	---	---	---	115	44	15	15	---	152	0	
07/12/2011	*	---	---	---	199	59	22	16	3	0	0	
07/13/2011	*	---	---	---	163	43	31	8	---	0	0	
07/14/2011	*	---	---	---	112	46	22	8	0	0	0	
07/15/2011		---	---	---	---	---	---	---	---	---	---	
Total:		0	4	0	5,080	3,998	939	337	6	2,461	370	
# Days:		0	3	0	14	14	14	14	7	14	14	
Average:		0	1	0	363	286	67	24	1	176	26	
YTD		1,080	13,882	4,071	2,934	4,117,942	2,032,610	837,955	28,395	607,747	2,619,713	246,497

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/01/2011 *	---	---	---	---	149	115	73	22	---	0	0
07/02/2011 *	---	---	---	---	201	141	0	10	596	229	193
07/03/2011 *	---	---	---	---	137	0	0	14	---	297	0
07/04/2011 *	---	---	---	---	205	180	0	9	0	148	505
07/05/2011 *	---	---	---	---	118	29	23	20	---	208	0
07/06/2011 *	---	0	---	---	108	59	0	8	8	0	226
07/07/2011 *	---	0	---	---	59	44	0	13	---	0	231
07/08/2011 *	---	0	---	---	72	29	13	10	3	218	0
07/09/2011 *	---	---	---	---	83	73	19	13	---	0	0
07/10/2011 *	---	---	---	---	54	30	13	14	0	291	0
07/11/2011 *	---	---	---	---	51	59	7	22	---	152	0
07/12/2011 *	---	---	---	---	37	57	7	10	5	458	268
07/13/2011 *	---	---	---	---	50	43	7	32	---	0	282
07/14/2011 *	---	---	---	---	25	19	15	19	281	0	0
07/15/2011	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	1,349	878	177	216	893	2,001	1,705
# Days:	0	3	0	0	14	14	14	14	7	14	14
Average:	0	0	0	0	96	63	13	15	128	143	122
YTD	0	0	1	0	118,466	43,562	30,934	18,462	316,251	361,245	111,781

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)
07/01/2011 *	---	---	---	---	50	175	0	1	---	1,500	0
07/02/2011 *	---	---	---	---	25	152	0	1	800	529	0
07/03/2011 *	---	---	---	---	0	150	0	2	---	743	0
07/04/2011 *	---	---	---	---	50	150	0	0	600	1,000	0
07/05/2011 *	---	---	---	---	30	221	0	1	---	286	134
07/06/2011 *	---	0	---	---	90	60	0	0	600	714	0
07/07/2011 *	---	0	---	---	400	100	0	0	---	857	0
07/08/2011 *	---	0	---	---	490	60	0	1	500	286	67
07/09/2011 *	---	---	---	---	20	30	0	0	---	571	0
07/10/2011 *	---	---	---	---	90	70	0	0	250	1,100	67
07/11/2011 *	---	---	---	---	240	70	0	0	---	100	67
07/12/2011 *	---	---	---	---	140	80	0	0	577	1,143	0
07/13/2011 *	---	---	---	---	320	50	0	1	---	286	8
07/14/2011 *	---	---	---	---	50	35	0	2	600	0	67
07/15/2011	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	1,995	1,403	0	9	3,927	9,115	410
# Days:	0	3	0	0	14	14	14	14	7	14	14
Average:	0	0	0	0	143	100	0	1	561	651	29
YTD	0	0	0	0	8,622	14,801	746	316	158,742	486,247	25,731

Two-Week Summary of Passage Indices

* See sampling comments <http://www.fpc.org/currentDaily/smpcomments.htm>

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's), subyearling chinook (chinook 0's), steelhead, coho, sockeye, and lamprey juveniles. Two classes of fish counts are shown in these tables:

Two classes of fish counts are shown in these tables:

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

Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.

Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations.

The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period

that spans two calendar days. In this report, the date shown corresponds with the sample end date.

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

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

Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts

IMN (Collection) = Imnaha River Trap : Collection Counts

GRN (Collection) = Grande Ronde River Trap : Collection Counts

LEW (Collection) = Snake River Trap at Lewiston : Collection Counts

LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts

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

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

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

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

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

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

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

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

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

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

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

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

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

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.

RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.

LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.

IMN data collected for the FPC by the Nez Perce Tribe.

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

7/15/11 10:43 AM

		07/01/11 TO 07/15/11						
		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
LGR	Sum of NumberCollected	54,190	686	240	3,362	930	59,408	
	Sum of NumberBarged	53,986	675	238	3,354	916	59,169	
	Sum of NumberBypassed	68	0	1	0	0	69	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	33	0	0	2	1	36	
	Sum of FacilityMorts	103	11	1	6	13	134	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	136	11	1	8	14	170	
LGS	Sum of NumberCollected	83,630	1,410	90	2,739	603	88,472	
	Sum of NumberBarged	83,314	1,407	90	2,735	600	88,146	
	Sum of NumberBypassed	14	0	0	0	0	14	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	24	1	0	0	0	25	
	Sum of FacilityMorts	278	2	0	4	3	287	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	302	3	0	4	3	312	
LMN	Sum of NumberCollected	25,821	810	32	633	120	27,416	
	Sum of NumberBarged	25,665	809	32	626	119	27,251	
	Sum of NumberBypassed	55	1	0	6	0	62	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	11	0	0	0	0	11	
	Sum of FacilityMorts	90	0	0	1	1	92	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	101	0	0	1	1	103	
MCN	Sum of NumberCollected	390,158	218	200		308	390,884	
	Sum of NumberBarged	0	0	0		0	0	
	Sum of NumberBypassed	383,489	200	200		300	384,189	
	Sum of Numbertrucked	0	0	0		0	0	
	Sum of SampleMorts	116	0	0		0	116	
	Sum of FacilityMorts	6,553	18	0		8	6,579	
	Sum of ResearchMorts	0	0	0		0	0	
	Sum of TotalProjectMorts	6,669	18	0		8	6,695	
Total Sum of NumberCollected		553,799	3,124	562	6,734	1,961	566,180	
Total Sum of NumberBarged		162,965	2,891	360	6,715	1,635	174,566	
Total Sum of NumberBypassed		383,626	201	201	6	300	384,334	
Total Sum of Numbertrucked		0	0	0	0	0	0	
Total Sum of SampleMorts		184	1	0	2	1	188	
Total Sum of FacilityMorts		7,024	31	1	11	25	7,092	
Total Sum of ResearchMorts		0	0	0	0	0	0	
Total Sum of TotalProjectMorts		7,208	32	1	13	26	7,280	

YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/15/11 10:43 AM

TO: 07/15/11

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	665,540	2,716,874	52,874	77,419	2,712,838	6,225,545
	Sum of NumberBarged	581,710	1,705,082	38,346	34,792	1,436,559	3,796,489
	Sum of NumberBypassed	81,867	1,009,672	14,509	42,055	1,275,909	2,424,012
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	147	101	1	72	41	362
	Sum of FacilityMorts	1,816	1,778	18	500	266	4,378
	Sum of ResearchMorts	0	241	0	0	58	299
	Sum of TotalProjectMorts	1,963	2,120	19	572	365	5,039
LGS	Sum of NumberCollected	639,660	1,449,284	40,350	23,684	1,132,072	3,285,050
	Sum of NumberBarged	636,646	1,344,330	39,948	18,322	893,027	2,932,273
	Sum of NumberBypassed	87	103,168	401	5,227	238,633	347,516
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	116	51	0	9	9	185
	Sum of FacilityMorts	2,811	1,735	1	126	403	5,076
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2,927	1,786	1	135	412	5,261
LMN	Sum of NumberCollected	198,360	853,841	12,597	20,761	565,614	1,651,173
	Sum of NumberBarged	188,984	636,439	11,435	18,546	459,505	1,314,909
	Sum of NumberBypassed	8,366	215,897	1,254	1,964	103,434	330,915
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	14	3	0	0	5	22
	Sum of FacilityMorts	996	1,499	10	251	870	3,626
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,010	1,502	10	251	875	3,648
MCN	Sum of NumberCollected	789,291	952,645	71,455	132,353	295,877	2,241,621
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	778,655	949,771	71,257	131,964	295,663	2,227,310
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	376	187	8	40	13	624
	Sum of FacilityMorts	10,260	2,687	170	349	201	13,667
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	10,636	2,874	178	389	214	14,291
Total Sum of NumberCollected		2,292,851	5,972,644	177,276	254,217	4,706,401	13,403,389
Total Sum of NumberBarged		1,407,340	3,685,851	89,729	71,660	2,789,091	8,043,671
Total Sum of NumberBypassed		868,975	2,278,508	87,421	181,210	1,913,639	5,329,753
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		653	342	9	121	68	1,193
Total Sum of FacilityMorts		15,883	7,699	199	1,226	1,740	26,747
Total Sum of ResearchMorts		0	241	0	0	58	299
Total Sum of TotalProjectMorts		16,536	8,282	208	1,347	1,866	28,239

Cumulative Adult Passage at Mainstem Dams Through: 07/14

DAM	EndDat	Spring Chinook						Summer Chinook						Fall Chinook					
		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	07/14	167097	50945	244384	12612	174444	16431	94981	44841	89587	14092	78586	11708	0	0	0	0	0	0
TDA	07/14	124164	40146	189839	11546	130174	13470	67787	32822	73175	11108	67518	8841	0	0	0	0	0	0
JDA	07/14	103401	39823	179446	11794	110572	12004	62108	28630	63731	10611	60542	9289	0	0	0	0	0	0
MCN	07/14	101245	31750	153500	9185	102003	11175	57583	23124	57859	6526	55490	7266	0	0	0	0	0	0
IHR	07/14	69306	18161	101188	6047	70295	6879	24284	11235	27581	3119	16609	3144	0	0	0	0	0	0
LMN	07/14	69832	18094	97334	5898	69566	5561	28446	12265	33112	4027	17262	2708	0	0	0	0	0	0
LGS	07/14	67321	23492	92985	5461	64800	6145	37539	15879	30288	3582	14234	3107	0	0	0	0	0	0
LGR	07/14	59342	22063	94203	6409	65342	7745	32126	13774	27013	4559	13315	3727	0	0	0	0	0	0
PRD	07/12	15246	6030	30539	932	20141	818	22948	1781	31740	395	37770	1179	0	0	0	0	0	0
RIS	07/11	13089	8394	29684	1513	17327	1572	11271	5345	23988	1358	29424	2078	0	0	0	0	0	0
RRH	07/11	6989	3491	8660	523	6536	525	6800	2304	13215	408	17489	1220	0	0	0	0	0	0
WEL	07/12	4153	3969	7596	661	5414	510	2332	540	9646	260	11070	399	0	0	0	0	0	0
WFA	07/07	39930	1165	61041	1370	50115	986	-	-	-	-	-	-	0	0	0	0	0	0

DAM	Coho						Sockeye			Steelhead			
	2011		2010		10-Yr Avg.		2011	2010	10-Yr Avg.	2011	2010	10-Yr Avg.	Wild 2011
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	0	0	0	0	0	0	175990	381022	121637	26843	95905	48528	12132
TDA	0	0	0	0	0	0	125755	319916	103523	9896	51048	23961	4407
JDA	0	0	1	0	1	0	125701	317068	106742	8231	34906	20263	3973
MCN	0	0	0	0	0	0	92567	268959	87871	6541	19228	12106	2842
IHR	0	0	0	0	0	0	705	1050	251	4802	11982	7282	1622
LMN	0	0	0	0	0	0	744	1305	302	5245	12206	7226	2484
LGS	0	0	0	0	0	0	634	1158	272	6975	7417	5032	3552
LGR	0	0	0	0	0	0	522	1447	321	12731	14157	11013	5911
PRD	0	0	0	2	0	0	77318	306960	99467	217	1473	823	0
RIS	0	0	0	0	0	0	37138	251490	81983	136	709	518	96
RRH	0	0	0	0	1	0	24750	204069	60174	597	676	516	517
WEL	0	0	0	0	0	0	14051	186235	54364	133	283	173	102
WFA	0	0	0	0	0	0	0	0	0	24193	29387	26490	-

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: 07/15/11

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

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