



Fish Passage Center

Weekly Report #09 - 20

July 24, 2009

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 16% and 122% of average at individual sub-basins over July. Precipitation above The Dalles has been 83% of average over July. Over the entire water year, precipitation has generally been near 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 2009 July 1-20		Water Year 2009 October 1, 2008 to July 1-20, 2009	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.17	102	19.32	89
Snake River Above Ice Harbor	0.44	75	17.98	115
Columbia Above The Dalles	0.67	83	20.28	99
Kootenai	1.50	122	19.13	86
Clark Fork	0.67	88	15.01	100
Flathead	1.13	110	17.5	88
Pend Oreille/ Spokane	0.86	98	26.0	92
Central Washington	0.11	44	6.90	84
Snake River Plain	0.34	87	11.99	120
Salmon/Boise/ Payette	0.29	56	17.33	95
Clearwater	0.72	76	29.43	106
SW Washington Cascades/Cowlitz	0.14	16	58.99	89
Willamette Valley	0.34	64	48.21	85

Table 2 displays the June Final and July Final runoff volume forecasts for multiple reservoirs. The most notable differences between the June Final and July Final forecasts came at Libby Dam and Lower Granite Dam. At Libby, the July Final forecast decreased 11% relative to the June Final Forecast. At Lower Granite Dam, the July Final forecast increased 7% relative to the June Final Forecast, it appears most of the increase at Lower Granite was due to an increase in water supply above Brownlee Dam (increased 14%). The Water Supply Forecast at The Dalles between January and July is 89300 Kaf (83% 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)	86	92000	83	89300
Grand Coulee (Jan-July)	85	53700	79	49600
Libby Res. Inflow, MT (Apr- Aug)	80	5000 5062*	69	4330
Hungry Horse Res. Inflow, MT (Jan-July)	93	2060	91	2020
Lower Granite Res. Inflow (Apr- July)	102	21900	109	23500
Brownlee Res. Inflow (Apr-July)	76	4780	90	5710
Dworshak Res. Inflow (Apr-July)	98	2590 2597*	97	2570

*Denotes COE Forecast

The Spring Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite) and ended on June 20th, 2009. The spring flow objective at Lower Granite this year was 100 Kcfs, average flow at Lower Granite over the spring period was 110.3 Kcfs. The summer flow period began on 6-21-09; the summer flow objective is 52.5 Kcfs in 2009 at Lower Granite. Flows at Lower Granite have average 65.1 Kcfs at Lower Granite over the first portion of the summer period and 45.8 Kcfs last week.

The spring flow objective period began on April 10th at Priest Rapids and McNary and ended on June 30th, 2009. The flow objectives this spring were 228 Kcfs at McNary and 135 Kcfs at Priest Rapids. Flows at Priest Rapids averaged 140.8 Kcfs over the spring season and flows at McNary averaged 268.1 Kcfs over the spring. The summer flow period began on July 1 at McNary and the objective is 200 Kcfs. Flows at McNary Dam have averaged 170.1 Kcfs over the first portion of the summer period and 149.4 Kcfs last week.

Grand Coulee Reservoir is at 1287.8 feet (7-23-09) and drafted 0.4 feet over the last week. Outflows at Grand Coulee have ranged between 69.0 and 101.5 Kcfs over the last week. The Grand Coulee summer draft will be 1278 feet this year by August 31st, 2009.

The Libby Reservoir is currently at elevation 2439.8 feet (7-23-09) and has refilled 1.5 feet last week. Outflows at Libby are currently 7 Kcfs (minimum bull trout flow) and will remain at this level through August.

Hungry Horse is currently at an elevation of 3559.7 ft (7-16-09) and has held steady last week. Outflows at Hungry Horse have been 2.2-2.4 Kcfs last week.

Dworshak is currently at an elevation of 1582.3 feet (7-23-09) and has drafted 6.9 feet last week. Outflows at Dworshak are currently 12 Kcfs.

The Brownlee Reservoir was at an elevation of 2064.8 feet on July 23rd, 2009, drafting 4.0 feet last week. Outflows at Brownlee Dam have been 14.9 to 22.3 Kcfs over the last week.

Spill:

The 2009 planned summer spill program at the lower Snake River Projects began at 0001 hours on June 20, 2009. The following table shows the planned operations for 2009.

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

Lower Granite, Little Goose and Lower Monumental dams met the court order over the past week. Ice Harbor Dam has met the court ordered levels of 45 Kcfs daytime spill and gas cap nighttime spill, except when daytime spill is below 45 Kcfs due to low flows and powerhouse minimum flows. Ice Harbor Dam has a minimum spill of 15.2 Kcfs.

The following table shows the planned operations for summer spill levels in the lower Columbia River for 2009.

Project	Day/Night Spill
McNary	50%/50%* (beginning June 20)
John Day	30%/30% on pre-test days; 30%/30% vs. 40%/40% on test days
The Dalles	40%/40%
Bonneville	75 Kcfs/gas cap

McNary Dam spill has met, or exceeded, the Court Order over the past week. Spill was increased to the gas cap at McNary in response to the high temperature-related smolt mortality at the project. At John Day Dam the testing of 30% versus 40% continued. The Dalles Dam met the court ordered 40% level over the past week. The 85 Kcfs/gas cap spill test ended on July 20th and the project returned to the 75 Kcfs/gas cap spill operation. Nighttime spill to the gas cap has been lower due to the reduction of the gas cap spill level in response to the Camas/Washougal gage, and due to the minimum generation at this project.

With the exception of the Camas/Washougal gage, total dissolved gas levels were below the waiver standards throughout the Snake and Columbia rivers.

On some occasions the Camas/Washougal monitor exceeded the 115%, however, there is no requirement to manage spill to this gage.

Gas bubble trauma (GBT) monitoring occurred at Little Goose and Lower Monumental dams in the Snake River, at Rock Island Dam in the Mid Columbia and at McNary and Bonneville dams in the lower Columbia. One fish was observed with minor signs of GBT at Bonneville Dam on July 18th, otherwise no other fish were detected with signs of GBT.

Smolt Monitoring: Subyearling Chinook smolt collection and passage numbers remained relatively high at McNary Dam while continuing to decline at Snake River projects. Collection of spring migrants continue to be low all SMP sites in the Snake River and Lower Columbia this past week.

At Lower Granite Dam subyearling Chinook continue to predominated with coho numbers continuing to drop off rapidly over the past week. Average daily passage index for subyearling Chinook was approximately 1,200 per day this week compared to about 3,600 per day last week.

At Rock Island dam the daily passage indices for subyearling Chinook predominated in the sample. The average daily passage index this week was consistent to what was seen last week. The average daily passage index for subyearling Chinook this week was 180 per day, compared to 165 per day last week. Subyearling Chinook normally predominate the sample at Rock Island Dam from July through August.

At McNary, John Day, and Bonneville dams, subyearling Chinook smolt numbers decreased over what was seen last week. From July 16th to July 20th, McNary Dam experienced higher than normal mortality rates, likely due to excessive temperatures in the forebay. During this period, these mortality rates averaged 10.6% of the total collection for subyearling Chinook per day. To lessen the impact of these temperatures, McNary Dam switched to gas cap spill and primary bypass on non-transportation days, beginning the afternoon of July 22nd. Mortality rates have decreased significantly in recent days. The spill to the gas cap and primary bypass operation is expected to last until Saturday, July 25th, when the COE expects to implement every day transport at McNary Dam. Subyearling Chinook passage indices at McNary Dam decreased this week with an average of just over 78,500 per day, compared to nearly 163,000 per day last week. Due to temperature in excess of 70°F, John Day Dam

has switched to a modified sampling schedule. During these high temperatures, John Day Dam will sample a limited number of fish for condition monitoring on Mondays and Thursdays until the temperatures decrease. At Bonneville Dam subyearling Chinook indices continued to decline. The average daily index at Bonneville Dam this week was just over 20,500 per day, whereas last week's daily average index was about 43,000 per day.

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. Releases of subyearling fall Chinook surrogates to the Clearwater River were scheduled to end this week. In all, just over 117,000 subyearling surrogates were to be released into the Clearwater River. Although almost all of these fall Chinook surrogates were PIT-tagged, they are otherwise unmarked. There were no other releases of juvenile salmonids scheduled for this week. There are no releases of juvenile salmonids to this zone are scheduled to begin 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 of juvenile salmonids to this zone this week. There are no releases of juvenile salmonids to 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 releases of juvenile salmonids were scheduled for this zone over the past week. Furthermore, there are no releases scheduled for this zone over the next two weeks.

Adult Passage: Daily adult summer Chinook passage numbers at Bonneville Dam ranged between 430 and 849 adult summer Chinook in the last week. The 2009 summer Chinook count of 79659 is about 1.05 times greater than the 2008 count and 1.09 times greater than the 10 year average. The summer Chinook jack count of 36353 is about 3.25 times greater than the 2008 of 11194 and about 3.90 times greater than the 10 year average of 9305. The adult summer Chinook count at The Dalles Dam was 77242, about 96.9% of the Bonneville passage to date. A total of 54497 adult summer Chinook have passed McNary Dam. The 2009 McNary Dam adult summer Chinook count was

about 1.06 times greater than the 2008 count and 1.03 times greater than the 10 year average. The 2009 McNary summer Chinook jack count of 20018 was 1.88 times greater than the 2008 count and 3.23 times greater than the 10 year average. The adult summer Chinook count at Lower Granite Dam in the Snake River of 13894 was 64.7% of the 2008 count and 1.31 times greater than the 10 year average. The Lower Granite summer Chinook jack count of 15456 was 3.14 times greater than the 2008 count and 5.95 times greater than the 10 year average.

The Bonneville Dam 2009 steelhead count of 78307 is about 79.8% of the 2008 count and 1.06 times greater than the 10 year average. In the Snake River, this year's Lower Granite steelhead count of 14111 is 1.45 times greater than the 2008 count of 9696 and 1.42 times greater than the 10 year average of 9947. The 2009 wild steelhead count as of July 23rd was 4327. At Rock Island Dam, as of July 22nd, 765 adult steelhead have been counted and at Rocky Reach Dam, 851 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2009 count for steelhead was 16555, as of July 19th. This year's steelhead count is only about 91.7% of the 2008 count of 18061 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 89 and 321 last week. The 2009 adult sockeye count at Bonneville Dam of 177430 is about 83.1% of the 2008 count of 213416 and about 2.27 times greater than the 10 year average of 78242. In the upper Columbia River at Priest Rapids Dam, the 2009 adult sockeye count of 148249 was about 76.9% of the 2008 count and 2.08 times greater than the 10 year average. Two of the major spawning sites for sockeye in the upper Columbia River zone are Lake Wenatchee and Lake Osoyoos (Okanogan basin). In the Snake River at Ice Harbor Dam, the 2009 adult sockeye count of 861 is about 1.62 times greater than the 2008 count of 532 and about 9.57 times greater than the 10 year average count of 90. The Lower Granite Dam 2009 adult sockeye count of 1157 was about 1.42 times greater than the 2008 count of 816 and 9.48 times greater than the 10 year average count of 122.

As of July 14th at Bonneville Dam, the adult Shad count was 1372329 which was about 64.3% of the 2008 count of 2135481 and only about 44.1% of the 10 year average count of 3111798.

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
07/10/2009	123.3	0.2	121.5	0.0	131.6	8.9	132.9	10.6	133.7	26.7	148.9	20.4	143.4	22.7
07/11/2009	124.1	0.2	120.6	0.0	126.1	8.6	123.1	8.1	127.5	19.2	125.6	19.4	119.6	23.1
07/12/2009	99.4	0.2	98.1	0.0	104.8	7.9	104.8	7.1	105.8	18.9	117.0	19.6	116.9	23.0
07/13/2009	116.4	0.2	121.2	0.0	124.4	8.6	122.2	9.9	126.4	23.7	129.8	19.6	122.1	22.2
07/14/2009	115.5	0.2	107.3	0.0	112.7	7.3	118.2	9.7	121.4	24.0	122.6	19.5	117.9	21.7
07/15/2009	98.5	0.1	110.8	0.0	113.3	7.8	107.4	9.3	110.1	24.0	113.9	21.1	109.3	23.2
07/16/2009	99.8	0.2	101.9	0.0	106.4	7.1	103.1	9.0	101.8	22.4	112.1	19.7	106.1	22.7
07/17/2009	101.5	0.1	95.6	0.0	99.3	7.6	103.5	9.0	105.0	22.7	114.7	20.2	114.0	20.9
07/18/2009	80.3	0.2	76.1	0.0	79.5	7.4	81.9	7.1	85.8	18.8	91.0	19.6	87.9	23.3
07/19/2009	69.0	0.2	70.7	0.0	75.3	7.8	79.1	7.1	78.7	16.6	86.1	19.4	82.7	21.8
07/20/2009	101.2	0.2	104.3	0.0	108.2	7.7	103.3	8.6	101.3	21.5	97.5	19.4	89.0	22.9
07/21/2009	100.6	0.2	102.9	0.0	104.0	7.8	103.4	8.8	104.9	20.4	111.2	19.8	107.4	22.9
07/22/2009	82.6	0.2	80.5	0.0	84.3	6.6	86.2	7.4	89.1	18.4	99.5	19.5	98.6	22.9
07/23/2009	76.8	0.1	81.5	0.0	84.6	7.0	82.4	6.8	82.9	18.0	83.0	19.7	76.7	24.6

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/10/2009	8.6	0.0	17.7	25.4	58.3	18.5	59.4	17.9	58.7	17.5	59.4	17.9
07/11/2009	9.5	0.0	15.2	19.3	53.5	18.4	50.3	15.3	49.1	17.1	52.2	36.3
07/12/2009	9.5	0.0	13.6	19.0	50.8	18.7	50.5	15.3	48.0	17.5	50.1	39.4
07/13/2009	9.5	0.0	14.2	17.6	49.0	18.8	47.1	14.0	44.7	17.0	46.3	36.3
07/14/2009	9.6	0.0	14.2	20.3	49.8	18.6	49.5	14.8	46.3	17.4	46.7	36.8
07/15/2009	9.6	0.0	13.6	19.0	53.7	18.8	54.2	16.0	53.0	17.0	56.4	44.8
07/16/2009	9.6	0.0	14.8	19.7	48.7	18.7	46.7	14.0	45.6	17.4	48.2	37.8
07/17/2009	9.6	0.0	13.9	20.2	47.4	18.7	47.5	14.2	45.4	17.0	47.3	37.1
07/18/2009	11.1	1.5	13.4	20.8	48.4	18.8	47.2	14.3	44.1	17.5	43.7	33.5
07/19/2009	12.1	2.4	12.7	17.1	51.0	18.7	48.6	14.7	46.8	17.2	50.3	40.1
07/20/2009	11.9	2.5	13.2	19.6	45.9	18.8	45.2	13.6	43.8	20.5	43.9	33.4
07/21/2009	12.0	2.4	12.1	16.2	44.7	18.7	44.5	13.3	42.7	16.9	44.8	34.5
07/22/2009	12.0	2.4	11.9	15.7	43.6	18.7	42.0	12.5	40.2	17.4	40.4	30.1
07/23/2009	12.0	2.3	---	---	39.9	18.7	38.5	11.5	37.0	17.2	38.5	28.3

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
07/10/2009	203.9	101.9	197.6	73.2	193.6	77.2	204.8	97.1	19.5	76.1
07/11/2009	206.3	103.1	202.3	80.4	197.1	78.8	205.3	97.1	14.2	81.9
07/12/2009	168.2	84.2	136.0	44.3	134.3	53.9	173.3	97.2	0.0	64.0
07/13/2009	173.0	86.9	169.2	50.8	160.2	64.0	161.8	98.5	1.3	49.9
07/14/2009	182.1	91.4	180.5	69.4	174.0	69.7	189.1	99.4	7.8	69.7
07/15/2009	166.8	83.6	161.0	64.5	156.1	62.5	170.2	101.0	0.2	57.0
07/16/2009	174.0	85.6	150.3	60.2	149.5	59.7	155.4	99.9	0.0	43.5
07/17/2009	167.2	83.5	155.6	62.3	154.6	62.0	170.3	97.0	0.0	61.2
07/18/2009	149.4	72.6	137.8	45.1	132.1	52.7	147.7	95.8	0.0	39.8
07/19/2009	149.9	75.1	147.1	44.1	140.5	56.4	147.5	94.9	0.0	40.4
07/20/2009	151.0	73.7	144.8	43.5	142.0	56.8	156.5	92.0	0.0	52.4
07/21/2009	152.4	76.3	139.9	41.9	137.9	55.1	147.5	82.1	0.0	53.2
07/22/2009	145.5	83.2	132.2	39.3	129.5	51.5	135.0	79.4	0.0	43.6
07/23/2009	130.4	74.8	113.7	34.0	106.8	42.8	122.8	78.7	0.0	32.0

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											
	07/14/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/20/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	07/15/09	Chinook + Steelhead	99	0	0	0.00%	0.00%	0	0	0	0
	07/22/09	Chinook + Steelhead	35	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/17/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/20/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/14/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/18/09	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/22/09	Chinook + Steelhead	82	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/16/09	Chinook + Steelhead	54	0	0	0.00%	0.00%	0	0	0	0
	07/21/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/23/09	Chinook + Steelhead	97	0	0	0.00%	0.00%	0	0	0	0

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	7/10/2009		to		07/23/09				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service National Marine Fisheries Service Total	Lyons Ferry Hatchery	CH0	FA	2009	117,362	06-29-09	07-20-09	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe Nez Perce Tribe Total	Clearwater Hatchery	CH0	SP	2010	300,000	07-01-09	07-15-09	Selway River	Clearwater River M F
Grand Total					417,362				

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	7/24/2009		to		8/6/2009				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver

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

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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</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>	<u>Avg</u>						
7/10	104.8	105.2	105.5	24	107.9	108.3	108.8	20	113.2	113.5	113.6	24	112.5	113.6	116.3	20	112.9	113.2	113.4	24
7/11	104.8	105.2	105.6	24	108.0	108.4	109.1	19	113.6	114.0	114.1	24	112.0	112.5	113.3	19	112.8	113.0	113.1	24
7/12	105.2	105.5	105.9	24	107.3	107.8	108.3	23	113.6	114.0	114.7	24	111.8	113.2	115.9	23	112.8	113.2	113.7	24
7/13	104.8	105.1	105.4	24	107.1	107.3	107.6	22	112.3	112.8	113.2	24	111.4	112.2	114.6	22	111.4	111.7	111.9	24
7/14	104.0	104.2	104.5	24	107.0	107.6	108.4	23	111.0	111.4	111.6	24	110.5	111.8	115.3	23	111.4	112.1	112.8	24
7/15	104.3	104.8	105.2	24	107.0	107.5	108.0	23	110.5	110.8	111.0	24	108.5	109.6	110.9	23	111.3	111.7	111.9	24
7/16	104.4	104.9	105.5	24	107.3	107.6	107.9	22	110.2	111.0	112.6	24	110.3	111.3	113.6	22	110.8	111.4	111.9	24
7/17	104.6	105.0	105.3	24	107.1	107.6	108.0	21	110.3	111.5	112.1	24	110.2	111.4	113.7	21	110.7	111.2	111.5	24
7/18	105.0	105.6	105.9	24	107.7	108.1	108.7	20	110.5	112.0	112.6	24	110.6	111.6	114.3	20	110.9	111.3	111.5	24
7/19	105.4	105.7	106.1	24	107.3	107.7	108.3	23	110.7	111.0	111.4	24	109.1	110.4	112.1	23	110.6	111.0	111.3	24
7/20	105.1	105.6	106.0	24	106.7	107.3	108.0	20	110.4	110.6	110.9	24	110.2	110.9	113.8	20	110.5	110.8	111.0	24
7/21	105.3	105.9	106.4	24	107.3	107.8	108.6	18	110.7	111.3	111.8	24	110.2	110.8	112.8	18	111.3	111.9	112.1	24
7/22	105.6	106.0	106.4	24	107.7	108.4	109.0	21	111.1	111.4	111.6	24	110.3	111.4	112.3	21	112.6	113.2	113.6	24
7/23	105.7	106.2	106.5	24	107.6	107.8	108.0	19	110.7	110.9	111.2	24	109.7	110.4	112.2	19	111.7	112.0	112.4	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</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>	<u>Avg</u>						
7/10	111.4	111.9	112.1	24	112.6	113.4	113.8	24	114.2	115.0	115.7	24	113.4	113.8	114.3	24	112.0	112.8	113.2	24
7/11	111.8	112.0	112.4	24	113.4	114.4	114.8	24	115.0	116.3	116.8	24	113.9	114.2	114.4	24	112.4	113.8	114.2	24
7/12	112.1	112.7	113.0	24	113.7	114.3	114.6	24	114.9	115.6	116.3	24	114.2	114.3	114.4	24	111.9	112.8	113.2	24
7/13	110.7	111.1	111.6	24	111.8	112.3	112.8	24	113.4	113.9	114.3	24	113.5	113.7	113.9	24	112.2	113.3	113.8	24
7/14	110.7	111.8	112.4	23	111.0	111.9	112.3	24	112.5	113.5	113.8	24	112.3	112.4	112.5	24	111.8	112.9	113.6	24
7/15	110.8	111.3	111.8	24	111.4	112.5	112.7	24	113.1	114.3	114.7	24	111.4	112.0	112.1	24	111.5	112.6	113.0	24
7/16	110.1	110.7	111.0	24	112.0	112.9	113.3	24	113.9	114.9	115.2	24	111.9	112.3	112.6	24	111.2	112.6	113.1	24
7/17	110.3	110.7	110.9	24	112.2	112.8	113.1	24	114.0	114.8	115.2	24	112.7	113.4	114.0	24	111.3	112.3	113.4	24
7/18	110.9	111.5	111.9	24	111.5	112.0	112.4	24	113.8	114.7	115.4	24	113.8	114.3	114.7	24	111.0	112.0	113.0	24
7/19	110.5	111.0	111.7	24	111.0	111.6	112.3	24	113.5	114.5	115.3	24	113.2	113.8	114.4	24	110.4	111.1	111.9	24
7/20	109.9	110.2	110.4	24	110.9	111.7	112.0	24	113.0	113.9	114.3	24	112.1	112.6	112.8	24	111.0	112.8	113.9	24
7/21	111.0	111.7	112.2	24	111.6	113.0	113.2	24	114.1	115.2	115.5	24	112.6	113.3	113.4	24	111.8	113.3	114.1	24
7/22	112.5	113.0	113.4	24	111.4	112.6	113.3	24	114.0	115.0	115.5	24	111.3	113.9	115.0	24	110.8	111.6	112.2	24
7/23	111.0	111.8	112.7	24	111.9	113.0	113.7	24	114.5	115.1	116.0	24	113.5	113.7	113.9	24	110.6	112.0	113.9	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</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>	<u>Avg</u>						
7/10	112.9	113.5	114.0	24	116.6	117.2	117.6	24	114.7	116.5	117.7	24	114.0	114.2	114.6	21	112.7	113.9	115.0	24
7/11	113.5	114.2	114.7	24	116.3	116.8	117.7	24	115.5	116.6	117.1	24	114.7	114.8	115.4	16	114.2	114.8	116.0	24
7/12	113.1	113.6	114.0	24	116.6	117.0	117.9	24	115.2	116.1	117.5	24	115.3	115.6	115.7	20	114.3	114.8	115.6	24
7/13	111.7	112.1	112.5	24	115.5	115.9	116.3	24	110.9	111.6	113.0	24	112.8	113.6	115.1	24	110.9	112.0	113.0	24
7/14	111.6	112.5	113.1	24	115.6	116.4	116.9	24	110.8	112.0	113.3	24	112.5	113.2	113.8	24	109.5	111.0	112.9	24
7/15	111.7	112.4	113.0	24	116.4	117.3	119.9	24	113.1	114.2	115.8	24	114.3	114.8	116.0	24	111.9	112.9	114.1	24
7/16	111.5	112.2	112.7	24	116.1	116.8	118.3	24	113.5	114.8	115.9	24	114.3	114.8	116.4	24	113.6	114.2	114.8	24
7/17	111.9	112.7	113.2	24	115.9	116.4	118.3	24	114.3	115.2	115.6	24	114.8	115.0	115.6	24	113.8	114.5	114.9	24
7/18	112.6	113.1	113.4	24	116.4	116.8	117.7	24	113.5	114.0	114.8	24	115.2	115.9	116.6	24	112.8	113.1	113.5	24
7/19	112.2	112.6	112.8	24	116.7	117.6	118.7	24	111.1	111.8	112.7	24	113.8	114.5	116.3	24	110.6	111.5	112.2	24
7/20	111.7	112.4	112.8	24	116.1	116.9	118.6	24	112.0	113.6	114.8	24	113.9	114.4	116.5	24	111.3	112.2	113.1	24
7/21	112.1	113.1	113.8	24	116.0	116.8	117.5	24	113.8	114.7	115.0	24	114.8	115.2	116.0	24	113.9	114.5	115.4	24
7/22	112.9	113.6	114.0	24	113.2	117.1	117.3	24	113.7	114.2	115.0	24	114.8	115.2	116.2	24	113.8	114.1	114.3	24
7/23	112.2	112.6	113.4	24	116.6	117.4	118.4	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>Clrwtr-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	
7/10	113.8	114.5	114.9	24	107.5	109.7	110.2	24	100.1	100.4	100.7	24	102.9	103.2	104.0	14	102.6	103.6	104.2	24
7/11	114.9	115.2	115.4	24	110.1	111.3	111.8	24	100.4	100.8	101.0	24	102.1	102.9	103.6	24	102.6	103.2	103.5	24
7/12	114.9	115.3	115.7	24	109.7	110.6	111.2	24	100.7	101.0	101.3	24	102.4	103.4	104.0	24	102.6	103.3	103.7	24
7/13	112.5	113.1	113.4	24	106.5	107.6	108.5	24	96.9	100.2	100.4	24	101.4	101.8	102.2	24	101.5	101.8	102.1	24
7/14	111.1	111.8	112.4	24	107.5	108.7	109.1	24	100.1	100.4	100.7	24	102.2	103.4	104.3	24	102.2	103.2	104.2	24
7/15	113.0	113.7	114.2	24	108.1	108.9	109.4	24	100.2	100.5	100.8	24	102.4	103.6	104.6	24	102.6	103.4	104.2	24
7/16	113.6	114.1	114.5	24	109.2	110.3	110.9	24	100.2	100.6	101.0	24	102.3	103.5	104.5	24	102.5	103.4	104.1	24
7/17	114.3	114.7	115.0	24	110.0	110.8	111.1	24	100.2	100.5	100.8	24	102.2	103.3	104.1	24	102.4	103.3	104.1	24
7/18	113.2	114.1	114.5	24	110.6	111.4	112.0	24	103.4	106.2	106.4	24	104.0	106.3	107.6	24	102.7	103.6	104.5	24
7/19	112.3	112.9	113.1	24	109.1	109.7	110.3	24	105.4	105.8	106.1	24	105.4	106.4	107.4	24	102.3	103.2	104.0	24
7/20	112.3	113.0	113.5	24	108.7	109.7	110.0	24	104.9	105.5	112.3	24	105.3	106.2	107.5	19	102.3	103.5	104.3	24
7/21	114.6	114.9	115.2	24	109.0	109.9	110.2	24	99.1	103.3	104.0	24	104.4	105.5	106.4	24	102.7	103.8	104.9	24
7/22	114.4	114.7	115.0	24	110.3	111.2	111.6	24	103.9	104.9	105.2	24	104.9	106.3	107.5	23	102.5	103.8	104.8	24
7/23	---	---	---	0	109.9	110.6	111.3	24	104.5	104.7	105.1	24	105.2	105.9	107.1	20	102.3	103.4	104.5	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-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	
7/10	103.4	105.5	107.1	23	100.5	101.0	101.2	24	108.9	109.5	110.6	24	107.2	108.2	109.6	24	110.9	111.2	111.3	24
7/11	103.2	105.1	106.4	24	102.1	102.7	103.2	24	109.3	109.7	110.4	24	110.3	111.0	113.2	24	112.2	112.6	112.8	24
7/12	103.4	105.2	106.7	24	102.6	103.0	103.6	24	109.8	110.1	110.6	24	109.2	109.8	110.8	24	111.9	112.3	112.6	24
7/13	102.0	103.0	103.7	24	101.0	101.2	101.5	24	109.1	109.4	109.6	24	107.3	107.6	108.5	24	111.4	111.6	111.8	24
7/14	103.5	105.8	107.3	23	101.5	102.2	102.5	24	109.4	109.7	110.2	24	106.3	106.6	106.9	24	111.6	112.1	112.5	24
7/15	103.8	106.1	107.6	24	101.8	102.1	102.3	24	109.5	109.8	110.3	24	106.1	106.5	107.1	24	110.7	111.1	111.3	24
7/16	103.8	106.0	107.6	23	100.9	101.2	102.0	24	109.6	109.9	110.4	24	105.3	105.7	106.5	24	111.2	111.7	112.0	24
7/17	103.4	105.5	107.1	24	102.0	102.8	103.5	24	110.1	110.3	110.6	24	105.7	106.4	107.3	24	112.1	112.4	112.9	24
7/18	103.8	106.1	107.6	24	103.3	103.7	104.2	24	110.6	110.9	111.5	24	107.7	108.2	108.6	24	112.4	112.9	113.3	24
7/19	104.9	107.1	108.7	24	102.3	102.6	103.0	24	109.7	109.9	110.3	24	107.4	107.8	108.0	24	112.3	112.6	112.9	24
7/20	104.6	106.9	108.3	24	102.0	102.4	102.8	24	109.9	110.3	110.5	24	110.7	112.0	113.5	24	112.8	113.1	113.5	24
7/21	104.9	107.1	108.6	24	102.8	102.9	103.3	24	110.3	110.7	111.7	24	112.0	112.9	114.0	24	112.9	113.3	113.5	24
7/22	104.6	107.1	108.8	24	102.3	102.5	102.7	24	110.2	110.4	110.5	24	110.5	110.7	111.0	24	112.7	113.1	113.4	24
7/23	105.0	107.1	108.7	24	102.4	102.7	102.9	24	110.2	110.5	111.1	24	109.8	110.1	110.8	24	112.3	112.5	112.6	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	
7/10	110.2	110.7	111.6	24	114.4	114.8	115.5	24	111.3	111.6	112.5	24	113.1	114.5	114.9	24	---	---	---	0
7/11	110.3	110.7	111.4	24	114.3	114.7	115.4	24	112.3	112.7	113.2	24	113.0	114.2	115.3	24	---	---	---	0
7/12	110.0	110.3	110.5	24	113.8	114.4	114.7	24	112.5	112.8	114.1	24	112.6	113.0	113.4	24	---	---	---	0
7/13	108.5	108.9	109.5	24	113.3	114.2	115.7	24	109.6	110.2	111.3	24	112.8	113.4	113.8	24	---	---	---	0
7/14	107.1	107.2	107.4	24	116.2	116.5	117.0	24	107.5	107.7	108.0	24	113.0	113.5	113.9	24	---	---	---	0
7/15	107.1	107.3	107.8	24	115.4	115.9	116.1	24	107.1	107.3	107.6	24	114.7	115.2	115.7	24	---	---	---	0
7/16	107.7	108.0	109.1	24	115.7	115.9	116.2	24	108.1	108.5	108.6	24	113.4	113.8	114.3	24	---	---	---	0
7/17	108.7	108.9	109.7	24	115.2	115.6	115.8	24	110.4	111.1	111.5	24	113.9	114.3	114.7	24	---	---	---	0
7/18	109.6	109.8	110.0	24	115.8	116.1	116.3	24	111.7	112.0	112.2	24	113.6	114.5	115.0	24	---	---	---	0
7/19	108.9	109.3	110.4	24	115.5	115.9	116.1	24	111.9	112.5	113.2	24	113.2	114.2	115.0	24	---	---	---	0
7/20	110.3	110.6	110.7	24	115.5	115.9	116.6	24	112.9	113.1	113.5	24	113.1	113.8	114.5	24	---	---	---	0
7/21	110.8	111.0	111.1	24	115.0	115.3	115.8	24	113.1	113.3	113.7	24	112.9	113.5	113.9	24	---	---	---	0
7/22	110.9	111.4	112.5	24	115.7	116.1	116.4	24	113.1	113.3	113.8	24	114.2	114.8	115.2	24	---	---	---	0
7/23	111.7	112.0	112.4	24	115.5	115.9	116.2	24	113.3	113.5	113.8	24	113.6	114.2	114.7	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>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
7/10	108.4	109.3	110.5	24	115.6	116.3	116.6	24	105.7	106.4	107.0	24	117.9	119.4	120.0	24	109.2	109.7	109.9	24
7/11	108.9	109.6	110.2	24	114.1	114.7	114.9	24	105.5	105.7	106.1	24	118.4	119.4	119.8	24	113.0	113.8	114.3	24
7/12	109.3	109.6	109.9	24	114.3	114.9	115.7	24	104.6	104.9	105.2	24	115.0	115.6	117.7	24	110.6	111.9	112.6	24
7/13	107.5	107.8	108.4	24	113.5	113.9	116.0	24	103.2	103.5	103.8	24	115.3	116.0	117.5	24	104.4	105.2	107.1	24
7/14	106.0	106.4	106.7	24	115.0	115.7	116.4	24	103.2	103.8	104.1	24	117.3	118.9	119.2	24	105.0	106.0	107.8	24
7/15	105.0	105.3	105.8	24	115.0	115.7	116.2	24	103.8	104.1	104.4	24	117.3	118.6	118.9	24	112.2	112.9	113.2	24
7/16	107.0	108.2	109.1	24	114.2	114.8	115.7	24	103.7	104.0	104.2	24	116.7	117.9	118.5	24	111.6	112.3	112.7	24
7/17	109.4	110.1	110.6	24	114.7	115.6	116.9	24	104.0	104.3	104.6	24	117.2	117.5	117.7	24	111.1	111.8	112.4	24
7/18	110.1	110.7	111.4	24	114.9	116.0	117.6	24	103.3	103.5	104.1	24	115.1	115.7	117.2	24	110.4	110.8	110.9	24
7/19	110.0	110.4	111.0	24	115.8	117.0	117.5	24	103.0	103.5	103.8	24	114.6	115.0	115.6	24	106.5	107.4	108.7	24
7/20	110.7	111.2	111.8	24	114.2	114.7	115.2	24	104.5	105.5	106.6	24	115.1	115.5	115.7	24	106.5	107.3	107.7	24
7/21	110.7	111.3	112.4	24	114.8	115.4	116.4	24	107.2	107.4	107.9	24	115.0	115.5	115.8	24	108.9	109.5	110.1	24
7/22	110.6	111.1	112.2	24	115.1	115.8	117.2	24	107.4	107.7	108.0	24	114.7	114.9	115.2	24	108.1	108.5	108.8	24
7/23	109.0	109.4	109.9	24	115.0	116.0	116.3	24	106.4	106.6	107.2	24	114.3	114.6	114.9	24	105.5	106.0	106.5	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>CamasWashougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
7/10	115.0	115.8	116.7	24	110.6	111.3	111.6	24	---	---	---	0	112.9	115.1	117.3	24	116.0	117.2	119.5	24
7/11	116.5	117.4	117.9	24	111.4	111.8	112.1	24	---	---	---	0	112.6	114.3	115.9	24	115.9	117.1	119.5	24
7/12	115.0	115.6	116.1	24	107.4	108.6	109.9	24	---	---	---	0	111.0	111.6	112.7	24	115.7	117.1	119.3	24
7/13	111.7	112.2	113.1	24	105.0	105.3	105.6	24	---	---	---	0	110.2	111.8	113.3	24	115.6	116.9	119.2	24
7/14	112.1	112.7	112.9	24	105.1	105.8	106.2	24	---	---	---	0	112.6	114.6	116.6	24	115.9	117.3	119.7	24
7/15	115.3	116.4	116.8	24	106.6	107.3	107.6	24	---	---	---	0	112.4	115.5	117.7	24	116.0	117.4	119.7	24
7/16	115.7	116.2	116.5	24	108.4	109.2	109.6	24	---	---	---	0	114.3	117.0	118.9	24	115.8	117.3	119.9	24
7/17	115.3	115.5	115.7	24	110.7	111.9	112.3	24	---	---	---	0	115.7	117.2	118.9	24	115.8	117.0	119.8	24
7/18	114.7	115.1	115.5	24	111.3	111.7	111.8	24	---	---	---	0	114.5	116.0	117.5	24	115.4	116.5	118.6	24
7/19	112.7	113.0	113.3	24	108.3	108.5	109.3	24	---	---	---	0	113.5	115.8	117.3	24	115.3	116.3	118.3	24
7/20	112.6	113.3	113.9	24	108.0	108.7	109.2	24	---	---	---	0	115.2	117.2	118.7	24	115.3	116.1	117.7	24
7/21	113.3	114.1	114.6	24	110.6	111.5	111.9	24	---	---	---	0	114.9	117.0	118.7	24	115.0	115.5	117.1	24
7/22	113.2	113.7	114.2	24	108.9	109.4	110.6	24	---	---	---	0	114.0	115.2	115.9	24	114.1	114.6	116.7	24
7/23	111.9	112.2	112.3	24	105.7	106.2	107.4	24	---	---	---	0	111.8	112.8	114.0	24	113.5	113.9	116.5	24

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/24/2009 11:38

Two-Week Summary of Passage Indices

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

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

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

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

COMBINED YEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/10/2009	---	---	---	---	0	0	0	0	730	0	0
07/11/2009	*	---	---	---	0	0	15	0	---	82	0
07/12/2009	---	---	---	---	0	0	47	0	111	166	0
07/13/2009	*	---	---	---	0	0	10	0	---	0	0
07/14/2009	---	---	---	---	0	1	10	0	0	0	0
07/15/2009	*	---	---	---	0	0	0	0	---	0	0
07/16/2009	---	---	---	---	0	0	0	0	2	0	0
07/17/2009	---	---	---	---	0	0	7	0	101	0	0
07/18/2009	---	---	---	---	0	0	13	0	0	239	0
07/19/2009	---	---	---	---	0	0	6	0	205	0	0
07/20/2009	---	---	---	---	0	0	8	0	0	47	0
07/21/2009	---	---	---	---	9	1	0	0	0	0	0
07/22/2009	*	---	---	---	0	0	9	1	102	---	0
07/23/2009	*	---	---	---	0	0	21	0	0	---	0
07/24/2009	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	9	2	146	1	1,251	534	0
# Days:	0	0	0	0	14	14	14	14	11	12	14
Average:	0	0	0	0	1	0	10	0	114	45	0
YTD	37,667	44,693	20,207	29,713	3,081,413	2,432,945	448,919	9,222	2,251,654	1,032,204	1,717,083

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)
07/10/2009	---	---	---	---	5,624	3,851	2,132	149	177,445	37,955	56,108
07/11/2009	*	---	---	---	3,791	5,809	2,862	168	---	41,208	65,104
07/12/2009	---	---	---	---	3,407	4,070	1,946	184	216,335	48,096	51,416
07/13/2009	*	---	---	---	5,305	2,045	1,696	178	---	35,417	31,697
07/14/2009	---	---	---	---	2,889	2,076	665	146	116,223	43,000	20,523
07/15/2009	*	---	---	---	1,723	2,559	1,551	165	---	47,128	45,943
07/16/2009	---	---	---	---	2,552	4,177	1,349	165	141,046	49,242	30,419
07/17/2009	---	---	---	---	2,102	2,770	874	194	163,333	45,860	25,523
07/18/2009	---	---	---	---	1,271	1,831	1,446	211	131,877	47,790	33,243
07/19/2009	---	---	---	---	1,093	1,805	1,070	167	63,213	19,519	14,194
07/20/2009	---	---	---	---	954	1,464	726	178	45,156	21,595	14,098
07/21/2009	---	---	---	---	1,138	1,649	588	238	70,875	25,878	13,256
07/22/2009	*	---	---	---	1,014	1,869	523	145	58,036	---	29,149
07/23/2009	*	---	---	---	781	1,670	844	127	18,115	---	14,306
07/24/2009	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	33,644	37,645	18,272	2,415	1,201,654	462,688	444,979
# Days:	0	0	0	0	14	14	14	14	11	12	14
Average:	0	0	0	0	2,403	2,689	1,305	173	109,241	38,557	31,784
YTD	0	18	15	545	981,480	1,162,685	421,804	6,329	3,343,760	1,489,857	4,161,165

Two-Week Summary of Passage Indices

Date	COMBINED COHO										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/10/2009	---	---	---	---	208	72	43	0	102	0	0
07/11/2009 *	---	---	---	---	240	101	108	1	---	0	126
07/12/2009	---	---	---	---	140	101	16	4	205	166	0
07/13/2009 *	---	---	---	---	158	101	0	0	---	0	192
07/14/2009	---	---	---	---	50	57	30	1	0	0	0
07/15/2009 *	---	---	---	---	16	40	0	0	---	0	179
07/16/2009	---	---	---	---	62	103	6	5	0	0	0
07/17/2009	---	---	---	---	66	46	0	3	202	0	0
07/18/2009	---	---	---	---	50	46	13	1	0	239	0
07/19/2009	---	---	---	---	49	55	6	0	205	0	0
07/20/2009	---	---	---	---	24	20	23	3	0	0	0
07/21/2009	---	---	---	---	9	20	13	0	102	0	0
07/22/2009 *	---	---	---	---	18	40	7	0	102	---	53
07/23/2009 *	---	---	---	---	35	43	29	3	67	---	0
07/24/2009	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	1,125	845	294	21	985	405	550
# Days:	0	0	0	0	14	14	14	14	11	12	14
Average:	0	0	0	0	80	60	21	2	90	34	39
YTD	0	0	0	332	91,330	80,519	18,574	37,572	126,802	240,392	503,067

Date	COMBINED STEELHEAD										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/10/2009	---	---	---	---	74	101	0	0	2	0	0
07/11/2009 *	---	---	---	---	90	29	0	1	---	0	0
07/12/2009	---	---	---	---	0	43	16	0	0	0	0
07/13/2009 *	---	---	---	---	32	65	0	0	---	0	0
07/14/2009	---	---	---	---	33	17	0	0	0	0	0
07/15/2009 *	---	---	---	---	0	11	0	0	---	0	0
07/16/2009	---	---	---	---	16	77	0	0	0	0	0
07/17/2009	---	---	---	---	0	40	7	0	0	0	0
07/18/2009	---	---	---	---	8	11	7	0	0	0	0
07/19/2009	---	---	---	---	16	26	6	0	0	0	0
07/20/2009	---	---	---	---	8	9	0	0	102	0	0
07/21/2009	---	---	---	---	17	16	0	0	0	0	0
07/22/2009 *	---	---	---	---	18	14	2	0	0	---	0
07/23/2009 *	---	---	---	---	9	17	14	0	22	---	0
07/24/2009	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	321	476	52	1	126	0	0
# Days:	0	0	0	0	14	14	14	14	11	12	14
Average:	0	0	0	0	23	34	4	0	11	0	0
YTD	1,833	24,360	9,611	8,297	4,510,871	3,563,456	727,818	17,606	803,675	940,630	676,975

Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/10/2009	---	---	---	---	45	0	0	8	102	0	0
07/11/2009 *	---	---	---	---	0	0	15	11	---	0	0
07/12/2009	---	---	---	---	16	0	0	14	205	0	0
07/13/2009 *	---	---	---	---	32	0	0	9	---	0	0
07/14/2009	---	---	---	---	17	6	10	9	0	0	0
07/15/2009 *	---	---	---	---	0	0	0	11	---	0	0
07/16/2009	---	---	---	---	0	11	0	6	103	0	0
07/17/2009	---	---	---	---	33	0	0	4	0	0	0
07/18/2009	---	---	---	---	8	0	0	7	0	0	0
07/19/2009	---	---	---	---	16	6	0	15	102	0	0
07/20/2009	---	---	---	---	8	0	0	7	0	0	0
07/21/2009	---	---	---	---	9	3	0	5	51	0	0
07/22/2009 *	---	---	---	---	9	3	0	4	51	---	0
07/23/2009 *	---	---	---	---	9	7	0	10	43	---	0
07/24/2009	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	202	36	25	120	657	0	0
# Days:	0	0	0	0	14	14	14	14	11	12	14
Average:	0	0	0	0	14	3	2	9	60	0	0
YTD	170	0	0	177	46,492	46,339	21,674	4,793	190,221	111,931	74,913

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

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's,) subyearling chinook (chinook 0's), steelhead, coho, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, which are collection counts divided by the proportion of water passing through the sampled powerhouse. Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations. The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Definitions for Smolt Index Counts

- WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts
- IMN (Collection) = Imnaha River Trap : Collection Counts
- GRN (Collection) = Grande Ronde River Trap : Collection Counts
- LEW (Collection) = Snake River Trap at Lewiston : Collection Counts
- LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}
- MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.
 RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.
 LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.
 LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.
 IMN data collected for the FPC by the Nez Perce Tribe.

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

7/24/09 11:40 AM

		07/10/09	TO	07/24/09				
		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
LGR	Sum of NumberCollected	21,300	5	720	205	125	22,355	
	Sum of NumberBarged	21,099	4	716	198	123	22,140	
	Sum of NumberBypassed	50	0	0	0	0	50	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	25	0	2	2	0	29	
	Sum of FacilityMorts	124	1	2	5	2	134	
	Sum of ResearchMorts	2	0	0	0	0	2	
	Sum of TotalProjectMorts	151	1	4	7	2	165	
LGS	Sum of NumberCollected	26,210	2	588	332	25	27,157	
	Sum of NumberBarged	25,866	2	584	329	24	26,805	
	Sum of NumberBypassed	0	0	0	0	0	0	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	91	0	4	1	0	96	
	Sum of FacilityMorts	253	0	0	2	1	256	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	344	0	4	3	1	352	
LMN	Sum of NumberCollected	11,517	89	184	31	16	11,837	
	Sum of NumberBarged	11,291	88	182	30	15	11,606	
	Sum of NumberBypassed	133	1	0	1	0	135	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	10	0	0	0	1	11	
	Sum of FacilityMorts	83	0	2	0	0	85	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	93	0	2	0	1	96	
MCN	Sum of NumberCollected	585,315	611	475	59	316	586,776	
	Sum of NumberBarged	290,618	193	300	49	139	291,299	
	Sum of NumberBypassed	262,636	399	175	8	173	263,391	
	Sum of Numbertrucked	0	0	0	0	0	0	
	Sum of SampleMorts	458	1	0	0	0	459	
	Sum of FacilityMorts	31,218	18	0	2	3	31,241	
	Sum of ResearchMorts	384	0	0	0	0	384	
	Sum of TotalProjectMorts	32,060	19	0	2	3	32,084	
Total Sum of NumberCollected		644,342	707	1,967	627	482	648,125	
Total Sum of NumberBarged		348,874	287	1,782	606	301	351,850	
Total Sum of NumberBypassed		262,819	400	175	9	173	263,576	
Total Sum of Numbertrucked		0	0	0	0	0	0	
Total Sum of SampleMorts		584	1	6	3	1	595	
Total Sum of FacilityMorts		31,678	19	4	9	6	31,716	
Total Sum of ResearchMorts		386	0	0	0	0	386	
Total Sum of TotalProjectMorts		32,648	20	10	12	7	32,697	

YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/24/09 11:40 AM

TO: 07/24/09

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	694,632	2,352,637	65,443	33,446	3,430,175	6,576,333
	Sum of NumberBarged	674,512	1,500,926	63,360	26,164	1,841,942	4,106,904
	Sum of NumberBypassed	15,858	847,954	1,951	7,068	1,587,772	2,460,603
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	214	118	4	22	33	391
	Sum of FacilityMorts	4,029	2,734	128	192	409	7,492
	Sum of ResearchMorts	19	1,035	0	0	19	1,073
	Sum of TotalProjectMorts	4,262	3,887	132	214	461	8,956
LGS	Sum of NumberCollected	838,244	1,720,158	58,937	33,634	2,517,631	5,168,604
	Sum of NumberBarged	822,716	966,561	56,103	27,759	1,057,218	2,930,357
	Sum of NumberBypassed	9,300	751,922	2,825	5,826	1,460,070	2,229,943
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	255	49	6	4	20	334
	Sum of FacilityMorts	5,961	1,622	3	45	323	7,954
	Sum of ResearchMorts	12	4	0	0	0	16
	Sum of TotalProjectMorts	6,228	1,675	9	49	343	8,304
LMN	Sum of NumberCollected	319,528	321,051	13,791	16,039	518,654	1,189,063
	Sum of NumberBarged	313,104	312,022	13,772	15,862	506,282	1,161,042
	Sum of NumberBypassed	5,705	8,790	9	114	12,089	26,707
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	69	15	1	3	9	97
	Sum of FacilityMorts	548	237	8	6	257	1,056
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	617	252	9	9	266	1,153
MCN	Sum of NumberCollected	1,679,095	1,303,732	69,726	106,055	467,710	3,626,318
	Sum of NumberBarged	290,618	193	300	139	49	291,299
	Sum of NumberBypassed	1,354,486	1,301,926	69,360	105,854	467,488	3,299,114
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	618	149	1	2	14	784
	Sum of FacilityMorts	32,873	1,439	65	58	156	34,591
	Sum of ResearchMorts	499	25	0	1	3	528
	Sum of TotalProjectMorts	33,990	1,613	66	61	173	35,903
Total Sum of NumberCollected		3,531,499	5,697,578	207,897	189,174	6,934,170	16,560,318
Total Sum of NumberBarged		2,100,950	2,779,702	133,535	69,924	3,405,491	8,489,602
Total Sum of NumberBypassed		1,385,349	2,910,592	74,145	118,862	3,527,419	8,016,367
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		1,156	331	12	31	76	1,606
Total Sum of FacilityMorts		43,411	6,032	204	301	1,145	51,093
Total Sum of ResearchMorts		530	1,064	0	1	22	1,617
Total Sum of TotalProjectMorts		45,097	7,427	216	333	1,243	54,316

Cumulative Adult Passage at Mainstem Dams Through: 07/23

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	07/23	114525	66631	125543	17554	160243	11507	79659	36353	75524	11194	73138	9305	0	0	0	0	0	0
TDA	07/22	93908	53646	95438	15801	113852	9048	77242	26797	61823	11544	61898	7014	0	0	0	0	0	0
JDA	07/21	76806	49733	81772	14925	95147	7579	62542	31103	59372	12682	56296	6879	0	0	0	0	0	0
MCN	07/23	70413	43328	68080	12133	86998	7409	54497	20018	51244	10655	53064	6192	0	0	0	0	0	0
IHR	07/22	55435	28223	53142	7757	59050	4663	22708	9210	23004	4920	12830	2501	0	0	0	0	0	0
LMN	07/23	66931	20009	54512	6885	57079	4270	22518	11244	26345	2751	13175	1804	0	0	0	0	0	0
LGS	07/23	52642	24331	50396	7805	54016	4453	19331	10766	20742	4700	10700	2415	0	0	0	0	0	0
LGR	07/23	49667	31064	50146	10946	54673	5280	13894	15456	21460	4919	10623	2596	0	0	0	0	0	0
PRD	07/19	13469	2910	12178	620	18164	621	42640	1775	30452	1056	39863	1370	0	0	0	0	0	0
RIS	07/22	12634	6003	12490	1119	14914	1069	37467	5627	28420	1918	37686	3417	0	0	0	0	0	0
RRH	07/22	6090	1086	4065	371	5734	430	26525	3601	18939	1239	25063	2095	0	0	0	0	0	0
WEL	07/20	6312	1858	2708	426	4250	321	16857	1691	11534	451	14395	586	0	0	0	0	0	0
WFA	07/18	24675	2433	13633	328	-	-	728	64	0	0	-	-	0	0	0	0	-	-

DAM	Coho						Sockeye			Steelhead			
	2009		2008		10-Yr Avg.		2009	2008	10-Yr Avg.	2009	2008	10-Yr Avg.	Wild 2009
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	1	0	1	0	0	0	177430	213416	78242	78307	98151	73385	34404
TDA	0	0	0	0	0	0	155102	177747	65988	33576	52841	34023	13491
JDA	0	0	0	0	1	0	156166	192548	71546	32858	34531	24861	12781
MCN	0	0	0	0	0	0	121201	146520	58175	16343	19593	16871	5631
IHR	0	0	0	0	0	0	861	532	90	11031	9316	8389	2913
LMN	0	0	0	0	0	0	1141	701	103	13333	10461	8083	4473
LGS	0	0	0	0	0	0	1048	575	94	9419	5249	5169	3293
LGR	0	0	0	0	0	0	1157	816	122	14111	9696	9947	4327
PRD	0	0	0	-1	1	0	148249	192715	71164	778	2205	1159	0
RIS	0	0	0	0	1	0	158884	189603	67259	765	1978	1013	431
RRH	0	0	0	0	1	0	127907	156705	48717	851	1829	790	447
WEL	0	0	0	0	0	0	122110	154964	44950	259	750	268	173
WFA	0	0	0	0	-	-	0	0	-	16454	18045	-	-

BON and LGR have switched to video counts so the data is delayed.

*PRD is not posting 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:

07/24/09

BON counts from January 1, 2009 to March 14, 2009 (our traditional counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2009	19	-1	321	109
2008	42	0	568	273