Fish Passage Center

Weekly Report #09 - 19

July 17, 2009

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 22% and 170% of average at individual sub-basins over July. Precipitation above The Dalles has been 118% 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 1-13		Water Year 2009 October 1, 2008 to July 1-13, 2009	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.08	145	19.22	90
Snake River Above Ice Harbor	0.41	105	17.94	116
Columbia Above The Dalles	0.61	118	20.23	100
Kootenai	1.35	170	18.98	87
Clark Fork	0.68	137	15.01	102
Flathead	1.02	154	17.39	89
Pend Oreille/ Spokane	0.85	148	25.99	93
Central Washington	0.16	105	6.95	86
Snake River Plain	0.32	127	11.97	122
Salmon/Boise/ Payette	0.29	85	17.33	96
Clearwater	0.70	115	29.42	107
SW Washington Cascades/Cowlitz	0.13	22	58.97	89
Willamette Valley	0.34	99	48.21	86

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 70.2 Kcfs at Lower Granite over the first portion of the summer period and 52.0 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 179.2 Kcfs over the first portion of the summer period and 182.0 Kcfs last week.

Grand Coulee Reservoir is at 1288.3 feet (7-16-09) and drafted 0.7 feet over the last week. Outflows at Grand Coulee have ranged between 98.5 and 124.1 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 2437.9 feet (7-16-09) and has refilled 2.5 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 refilled 0.5 feet last week. Outflows at Hungry Horse have been 2.2 Kcfs last week.

Dworshak is currently at an elevation of 1590.1 feet (7-16-09) and has drafted 3.7 feet last week. Outflows at Dworshak are currently 9.5 Kcfs.

The Brownlee Reservoir was at an elevation of 2070.1 feet on July 16th, 2009, drafting 3.6 feet last week. Outflows at Brownlee Dam have been 16.9 to 20.7 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	30%/30% vs 45Kcfs/Gas Cap Study

Lower Granite, Little Goose and Lower Monumental dams met the court order over the past week. Ice Harbor Dam has generally 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 minimum spill of 15.2 Kcfs.

The 2009 spring spill program began at the lower Columbia River projects ended on June 30th. The following table shows the planned operations for summer spill levels in 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	85 Kcfs/gas cap*(beginning June 21)

McNary Dam spill has met the Court Order over the past week. At John Day Dam the testing of 30% versus 40% continued. The Dalles Dam met the court ordered 40% level over the past week. Bonneville Dam spill levels met the summer spill test of 85 Kcfs/Gas cap.

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. No fish were observed with signs of GBT in the samples.

Adult Fish Passage:

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 674 and 917 adult summer

Chinook in the last week. The 2009 summer Chinook count of 74490 is about 1.06 times greater than the 2008 count and 1.12 times greater than the 10 year average. The summer Chinook jack count of 34294 is about 3.25 times greater than the 2008 of 10537 and about 4.17 times greater than the 10 year average of 8226. The adult summer Chinook count at The Dalles Dam was 71803, about 96.4% of the Bonneville passage to date. A total of 50823 adult summer Chinook have passed McNary Dam. The 2009 McNary Dam adult summer Chinook count was about 1.09 times greater than the 2008 count and 1.06 times greater than the 10 year average. The 2009 McNary summer Chinook jack count of 18938 was 1.88 times greater than the 2008 count and 3.47 times greater than the 10 year average. The adult summer Chinook count at Lower Granite Dam in the Snake River of 13427 was 65.0% of the 2008 count and 1.34 times greater then the 10 year average. The Lower Granite summer Chinook jack count of 14549 was 3.04 times greater then the 2008 count and 6.14 times greater than the 10 year average.

The Bonneville Dam 2009 steelhead count of 35905 is about 72.5% of the 2008 count and 87.8% of the 10 year average. In the Snake River, this year's Lower Granite steelhead count of 12875 is 1.45 times greater than the 2008 count of 8849 and 1.41 times greater than the 10 year average of 9135. The 2009 wild steelhead count as of July 15th was 3911. At Rock Island Dam, as of July 14th, 356 adult steelhead have been counted and at Rocky Reach Dam, 615 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2009 count for steelhead was 15028, as of July 5th. This year's steelhead count is only about 87.2% of the 2008 count of 17241 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 475 and 1202 last week. The 2009 adult sockeye count at Bonneville Dam of 175504 is about 82.7% of the 2008 count of 212184 and about 2.28 times greater than the 10 year average of 76805. In the upper Columbia River at Priest Rapids Dam, the 2009 adult sockeye count of 133851 was about 73.3% 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 822 is about 1.58 times greater than the 2008 count of 519 and about 9.45 times greater than the 10 year average count of 87. The Lower Granite Dam 2009 adult sockeye count of 1013 was about 1.37 times greater than the 2008 count of 739 and 9.29 times greater than the 10 year average count of 109.

As of July 14th at Bonneville Dam, the adult Shad count was 1370475 which was about 64.7% of the 2008 count of 2117890 and only about 44.2% of the 10 year average count of 3097736.

Smolt Monitoring:

Subyearling Chinook smolt collection and passage numbers remained high at McNary Dam and Bonneville Dam, while at Snake River projects numbers of subyearlings were lower but steady. Collection of Spring migrants continued to decline at 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 3,600 per day this week compared to about 6,000 per day last week.

At Rock Island dam the daily passage indices for subyearling Chinook predominated in the sample. In fact, the average daily passage index increased this week when compared to last week. The average daily passage index for subyearling Chinook was 165 per day, compared to 134 per day last week. Subyearling Chinook normally predominate the sample at Rock Island Dam from July through August.

At McNary and John Day dams, subyearling Chinook smolt numbers continued to increase over what was seen last week. At McNary Dam subyearling Chinook passage indices remained relatively high this week, with an average daily index of nearly 163,000 per day. The average daily index at McNary Dam last week was about 154,000 per day. Transportation began this week at McNary Dam, as flows continue to drop and temperatures continue to rise. At Snake River collector projects transportation is still ongoing.. At Bonneville Dam subyearling Chinook indices continued to decline. The average daily index at Bonneville Dam this week was just over 43,000 per day, whereas last week's daily average index was about 52,600 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 continued this week and are

expected to continue through mid-July. In all, just over 117,000 subyearling surrogates will be released into the Clearwater River. Although almost all of these fall Chinook surrogates are PIT-tagged, they are otherwise unmarked. A release of approximately 300,000 spring Chinook parr that began several weeks ago was scheduled to end this week. These parr are unmarked and are not expected to out-migrate until spring of 2010. 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.

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

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/03/2009	76.5	0.2	71.4	0.0	74.5	6.1	76.0	7.4	80.5	16.6	82.0	17.9	73.0	19.5
07/04/2009	76.8	0.2	76.2	0.0	80.3	5.8	74.7	6.7	77.4	14.3	80.6	18.2	74.7	22.8
07/05/2009	64.7	0.2	65.0	0.0	69.9	5.4	72.7	5.6	75.3	15.5	84.8	19.2	81.4	22.8
07/06/2009	110.7	0.2	108.3	0.0	111.5	7.6	107.1	10.4	107.5	20.7	108.2	19.1	106.3	21.7
07/07/2009	119.2	0.2	130.4	0.0	140.2	9.0	142.4	11.8	146.4	26.7	148.4	19.6	142.6	22.1
07/08/2009	122.4	0.2	120.9	0.0	125.6	8.3	120.4	14.0	121.5	24.6	134.4	19.2	131.1	21.8
07/09/2009	138.0	0.2	139.1	0.0	141.8	8.5	132.6	11.2	133.4	26.6	130.3	19.5	127.3	23.0
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

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

	Dworshak		Brownlee	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/03/2009	7.4	0.0	24.8	27.2	68.7	18.8	64.4	19.3	64.3	17.1	66.3	28.4
07/04/2009	9.4	0.0	22.7	26.8	68.8	18.8	65.2	19.4	66.1	17.5	68.3	21.7
07/05/2009	9.5	0.0	22.4	25.1	68.2	18.8	65.5	19.6	64.5	17.2	66.8	45.0
07/06/2009	9.5	0.0	22.0	22.6	62.3	18.6	58.3	17.4	57.4	17.5	57.9	47.4
07/07/2009	9.5	0.0	22.5	23.6	62.4	18.7	59.6	17.7	58.5	17.2	60.3	23.9
07/08/2009	8.4	0.0	20.9	24.1	63.2	18.6	62.6	18.7	61.9	17.5	63.2	19.0
07/09/2009	7.4	0.0	20.0	25.4	55.8	18.5	52.7	15.8	49.7	17.1	50.6	15.4
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	17.7	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	17.6	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	20.3	53.7	18.8	54.2	16.0	53.0	17.0	56.4	44.8
07/16/2009	9.6	0.0	---	---	48.7	18.7	46.7	14.0	45.6	17.4	48.2	37.8

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

	McNary		John Day		The Dalles				Bonneville	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
07/03/2009	164.9	82.6	161.8	48.5	158.6	63.4	156.6	93.7	0.4	50.4
07/04/2009	152.8	77.0	130.8	40.1	128.7	51.6	140.0	93.8	0.0	34.1
07/05/2009	159.5	80.0	142.9	42.8	137.6	55.1	148.7	93.6	0.0	43.0
07/06/2009	173.6	86.9	160.1	60.6	158.3	63.4	172.7	94.0	0.0	66.7
07/07/2009	187.9	94.3	179.4	71.8	171.8	68.8	178.6	94.6	0.0	71.9
07/08/2009	208.5	104.3	195.1	61.9	190.4	75.5	201.0	95.8	14.8	78.3
07/09/2009	205.2	102.7	195.8	58.8	188.7	75.5	198.7	95.9	12.5	78.2
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

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											
	07/06/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/14/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	07/07/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/15/09	Chinook + Steelhead	99	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/09/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/13/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/07/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/11/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/14/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/07/09	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	07/09/09	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	07/16/09	Chinook + Steelhead	54	0	0	0.00%	0.00%	0	0	0	0

Hatchery Releases Last Two Weeks

Hatchery Release Summary
From: 7/3/2009 to 07/16/09

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

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 7/17/2009 to 7/30/2009

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2009	117,362	06-29-09	07-20-09	Big Canyon (Clearwater River)	Clearwater River M F
National Marine Fisheries Service Total					**117,362**				
Grand Total					**117,362**				

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

	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	105.1	105.4	105.8	24	109.5	110.0	110.4	21	116.3	116.5	116.8	24	114.3	115.3	117.7	21	115.2	116.2	116.6	24
7/4	105.5	106.0	106.4	24	109.1	109.6	110.0	21	115.8	116.0	116.5	24	115.0	115.6	117.8	21	116.0	116.2	116.8	19
7/5	105.5	105.8	106.1	24	109.3	109.9	110.4	23	114.8	115.2	116.1	24	113.2	113.8	115.3	23	115.9	116.7	117.0	24
7/6	105.7	105.9	106.2	24	108.8	109.0	109.3	23	114.5	114.8	115.1	24	113.5	114.6	115.6	23	115.8	116.2	116.5	24
7/7	105.4	105.7	106.0	24	108.1	108.4	108.7	21	114.0	114.2	114.4	24	111.4	113.0	114.1	21	114.8	115.0	115.3	24
7/8	105.1	105.3	105.9	24	108.0	108.4	109.1	21	113.9	114.1	114.2	24	112.6	113.6	114.9	21	113.6	114.1	114.3	24
7/9	104.8	104.9	105.1	24	107.9	108.3	109.8	23	113.7	114.0	114.3	23	112.5	113.7	114.7	23	112.8	113.3	113.7	24
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

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

	Chief J. Dnst				Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	114.3	115.3	116.0	24	115.3	116.4	116.9	24	116.1	117.4	117.9	24	115.5	116.1	116.9	24	111.3	113.6	114.5	24
7/4	114.9	115.2	115.5	19	116.2	117.1	118.1	24	116.9	118.0	118.3	24	115.7	116.4	117.1	24	111.9	113.1	114.6	24
7/5	115.1	115.7	116.3	24	116.8	117.8	118.3	24	117.6	118.5	119.0	24	116.5	116.9	117.6	24	111.7	112.6	113.1	24
7/6	114.7	115.0	115.1	24	116.0	116.6	117.2	24	116.4	117.1	118.0	24	115.5	115.8	116.7	24	112.2	113.3	113.5	24
7/7	113.9	114.2	114.5	24	114.4	114.7	115.0	24	115.3	116.1	116.8	24	114.4	114.6	114.8	24	113.0	113.9	114.4	24
7/8	112.3	112.8	113.2	24	114.0	114.6	114.9	24	115.1	115.9	116.6	24	113.1	113.2	113.4	24	112.0	113.5	115.1	24
7/9	111.3	112.1	112.4	24	113.1	113.7	114.3	24	114.5	115.5	116.3	24	112.9	113.3	113.8	24	111.9	113.1	113.6	24
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

Total Dissolved Gas Saturation at Mid Columbia River Sites

	Rock Island				Rock I. Tlwr				Wanapum				Wanapum Tlwr				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	114.4	114.7	115.0	24	117.9	118.4	119.7	24	117.3	118.4	120.8	24	116.0	116.6	117.9	24	114.5	114.8	115.3	24
7/4	114.3	114.8	115.6	24	118.2	119.3	120.1	24	115.9	116.9	117.6	24	116.1	116.7	117.3	24	113.9	114.5	115.3	24
7/5	114.4	114.9	115.4	24	118.2	119.2	121.5	24	115.3	116.1	116.5	24	115.9	116.3	117.0	24	112.9	113.5	114.0	24
7/6	113.6	113.9	114.7	24	117.1	118.0	119.8	24	112.5	113.8	115.2	24	114.3	115.1	116.2	22	111.8	112.5	113.0	24
7/7	113.7	114.1	114.6	24	117.5	117.7	118.0	24	111.0	111.4	111.6	24	112.3	112.5	113.0	18	110.5	111.0	111.3	24
7/8	112.5	112.9	113.2	24	116.2	117.1	118.2	24	110.6	111.2	111.9	24	112.3	113.1	114.3	24	109.7	110.2	110.7	24
7/9	112.2	112.8	113.3	24	116.1	116.4	116.7	24	112.4	113.6	115.1	24	113.4	114.0	114.4	24	110.1	110.9	113.0	24
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	---	---	---	0	---	---	---	0	---	---	---	0
7/13	111.7	112.1	112.5	24	115.5	115.9	116.3	24	---	---	---	0	---	---	---	0	---	---	---	0
7/14	111.6	112.5	113.1	24	115.6	116.4	116.9	24	---	---	---	0	---	---	---	0	---	---	---	0
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	---	---	---	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

	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		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	114.2	114.9	115.4	24	109.9	110.4	110.7	24	100.9	101.3	101.7	24	102.4	103.4	104.2	24	103.1	103.9	104.5	24
7/4	113.3	114.1	114.8	24	110.3	111.3	112.0	24	100.6	101.0	101.4	24	102.4	103.4	104.3	24	103.1	103.8	104.3	24
7/5	113.7	114.2	114.8	24	109.9	110.5	111.1	24	100.9	101.2	101.6	24	102.6	103.5	104.6	22	102.9	103.5	104.4	24
7/6	112.7	113.1	113.7	24	107.0	107.8	109.6	24	100.6	100.9	101.2	24	102.2	102.8	103.8	24	102.5	103.0	103.6	24
7/7	112.3	112.7	112.8	24	107.1	108.4	109.5	24	100.6	100.9	101.2	24	102.3	103.3	104.0	23	102.6	103.4	104.0	24
7/8	111.6	112.0	112.5	24	106.8	107.4	107.8	24	100.5	100.9	101.2	24	101.8	102.7	103.7	24	102.4	103.0	103.5	24
7/9	111.9	112.4	113.1	24	106.1	106.6	106.9	24	137.1	174.0	979.7	24	102.0	103.0	103.9	22	102.2	102.7	103.2	24
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	---	---	---	0	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	---	---	---	0	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	---	---	---	0	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	---	---	---	0	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

Total Dissolved Gas Saturation Data at Snake River Sites

	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		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	103.0	104.8	106.0	24	102.8	103.2	103.7	24	108.6	108.8	109.1	24	110.4	110.6	110.8	24	114.6	115.1	115.4	24
7/4	103.0	104.8	106.4	24	102.7	103.1	103.5	24	108.7	108.9	109.8	24	111.4	111.8	112.1	24	115.1	115.5	116.1	24
7/5	103.1	104.8	106.7	24	103.1	103.7	104.4	24	108.7	108.9	110.3	24	112.1	112.8	113.2	24	115.1	115.6	116.2	24
7/6	102.6	104.2	105.7	24	102.2	102.7	104.0	24	108.7	109.1	109.5	24	110.5	111.3	113.2	24	114.9	115.1	115.3	24
7/7	103.2	105.0	106.2	23	101.5	101.8	102.0	24	108.8	109.0	109.3	24	109.4	109.9	110.5	24	112.6	114.4	115.3	24
7/8	102.8	104.5	105.9	23	101.0	101.2	101.3	24	108.3	108.4	108.8	24	107.8	108.2	109.4	24	110.1	110.3	110.6	24
7/9	103.0	105.1	106.4	24	100.4	100.5	100.7	24	108.9	109.2	110.2	24	106.4	106.7	107.2	24	111.4	111.9	112.2	24
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

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

	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		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	114.0	114.3	114.5	24	114.9	115.6	116.8	24	114.9	115.2	115.4	24	115.9	116.3	116.7	24	---	---	---	0
7/4	114.5	114.7	115.0	24	117.7	118.0	118.4	24	115.1	115.3	116.1	24	115.2	116.2	116.9	24	---	---	---	0
7/5	114.6	114.9	115.3	24	117.2	117.7	118.0	24	115.8	116.1	117.2	24	115.6	116.0	116.6	24	---	---	---	0
7/6	114.4	114.7	115.1	24	116.9	117.2	117.3	24	114.6	115.3	116.6	24	114.9	115.3	115.9	24	---	---	---	0
7/7	112.4	112.6	113.2	24	116.5	116.8	117.1	24	112.6	112.8	113.0	24	114.6	115.4	115.8	24	---	---	---	0
7/8	111.2	111.5	111.9	24	115.8	116.2	117.1	24	110.9	111.3	111.8	24	114.2	114.4	114.7	24	---	---	---	0
7/9	111.2	111.4	111.6	24	115.6	116.4	116.9	24	110.9	111.1	111.2	24	111.2	111.7	112.4	24	---	---	---	0
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

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

	McNary-Wash				McNary Tlwr				John Day				John Day Tlwr				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
7/3	112.5	113.1	114.2	24	115.1	115.9	116.6	24	113.9	114.1	114.5	24	115.4	115.8	116.0	24	114.1	114.8	116.4	24
7/4	113.3	113.6	114.4	24	115.0	115.9	116.9	24	112.6	112.9	113.5	24	115.2	115.5	115.8	24	112.4	112.8	113.3	24
7/5	113.7	114.3	115.1	24	115.2	116.2	117.2	24	112.3	112.8	113.3	24	114.8	115.0	115.4	24	111.5	112.1	112.6	24
7/6	111.2	112.0	113.0	24	113.9	114.5	115.6	24	110.0	110.7	111.5	24	115.8	117.0	118.1	24	108.1	108.9	110.1	24
7/7	109.2	109.5	109.9	24	115.8	116.5	116.9	24	108.3	108.6	109.0	24	115.7	117.1	117.4	24	108.7	109.6	110.2	24
7/8	106.4	106.9	108.1	24	114.3	115.1	115.6	24	106.7	107.1	107.7	24	116.0	117.4	118.9	24	110.7	111.6	112.2	24
7/9	106.4	106.9	107.3	24	115.0	115.8	116.6	24	105.8	106.0	106.2	24	117.1	118.6	119.6	24	108.7	108.9	109.1	24
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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	The Dalles Dnst				Bonneville				Warrendale				Camas\Washougal				Cascade Island			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
7/3	115.9	116.6	117.3	24	117.0	117.6	118.0	24	---	---	---	0	118.0	119.6	120.9	24	115.6	116.4	117.8	24
7/4	113.9	114.6	115.6	24	116.1	116.9	117.1	24	---	---	---	0	118.3	119.9	120.7	24	115.1	116.1	118.0	24
7/5	113.3	114.0	114.6	24	114.3	114.8	116.3	24	---	---	---	0	118.6	119.6	120.3	24	115.2	116.1	118.0	24
7/6	111.6	112.3	112.8	24	108.5	109.1	111.5	24	---	---	---	0	112.8	114.0	115.9	24	115.0	115.6	116.8	24
7/7	111.1	112.4	113.2	24	107.4	107.8	108.2	24	---	---	---	0	112.3	114.2	115.9	24	115.0	115.8	117.6	24
7/8	112.0	113.4	113.9	24	107.3	107.7	107.8	24	---	---	---	0	111.2	113.2	114.8	24	115.3	116.3	118.5	24
7/9	113.5	114.9	115.8	24	108.5	109.0	109.2	24	---	---	---	0	111.6	113.7	115.6	24	115.5	116.7	118.9	24
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

Two-Week Summary of Passage Indices

				COMBINED YEARLING CHINOOK									
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/03/2009	*	---	---	---	---	34	23	41	4	---	430	150
07/04/2009		---	---	---	---	28	23	111	0	208	97	0
07/05/2009	*	---	---	---	---	0	0	55	0	---	240	79
07/06/2009		---	---	---	---	0	0	28	0	0	0	48
07/07/2009	*	---	---	---	---	0	3	0	1	---	0	172
07/08/2009		---	---	---	---	0	11	1	2	823	7	90
07/09/2009	*	---	---	---	---	0	1	0	0	---	143	166
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		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**62**	**62**	**318**	**7**	**1,874**	**1,165**	**705**
# Days:		**0**	**0**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**4**	**4**	**23**	**1**	**268**	**83**	**50**
YTD		**37,667**	**44,693**	**20,207**	**29,713**	**3,081,404**	**2,432,944**	**448,855**	**9,221**	**2,251,246**	**1,031,918**	**1,717,083**

				COMBINED SUBYEARLING CHINOOK									
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/03/2009	*	---	---	---	---	6,739	7,468	7,552	112	---	29,095	66,122
07/04/2009		---	---	---	---	5,388	6,094	5,070	120	118,641	43,340	69,908
07/05/2009	*	---	---	---	---	7,535	6,033	4,037	150	---	22,949	24,260
07/06/2009		---	---	---	---	8,529	7,790	3,754	111	118,160	43,097	37,929
07/07/2009	*	---	---	---	---	5,115	5,530	2,812	177	---	14,422	46,461
07/08/2009		---	---	---	---	4,678	3,929	2,631	107	225,836	17,741	48,171
07/09/2009	*	---	---	---	---	4,397	8,959	1,551	161	---	39,289	75,928
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		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**67,672**	**70,390**	**39,608**	**2,093**	**1,113,686**	**511,979**	**669,989**
# Days:		**0**	**0**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**4,834**	**5,028**	**2,829**	**150**	**159,098**	**36,570**	**47,856**
YTD		**0**	**18**	**15**	**545**	**973,127**	**1,149,627**	**415,733**	**5,069**	**2,793,155**	**1,329,215**	**4,017,396**

Two-Week Summary of Passage Indices

				COMBINED COHO								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/03/2009	*	---	---	---	---	825	403	275	14	---	573	299
07/04/2009		---	---	---	---	670	447	194	12	0	312	150
07/05/2009	*	---	---	---	---	577	332	164	9	---	119	0
07/06/2009		---	---	---	---	557	332	70	10	310	0	36
07/07/2009	*	---	---	---	---	144	183	73	1	---	0	111
07/08/2009		---	---	---	---	57	240	42	11	103	0	28
07/09/2009	*	---	---	---	---	72	115	0	3	---	0	42
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		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**3,776**	**2,627**	**1,021**	**71**	**720**	**1,170**	**1,163**
# Days:		**0**	**0**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**270**	**188**	**73**	**5**	**103**	**84**	**83**
YTD		**0**	**0**	**0**	**332**	**91,079**	**80,249**	**18,483**	**37,562**	**126,124**	**240,153**	**503,014**

				COMBINED STEELHEAD								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/03/2009	*	---	---	---	---	413	127	98	0	---	287	150
07/04/2009		---	---	---	---	168	149	14	1	0	97	0
07/05/2009	*	---	---	---	---	137	149	68	1	---	0	0
07/06/2009		---	---	---	---	223	92	28	1	103	0	30
07/07/2009	*	---	---	---	---	201	59	15	0	---	167	25
07/08/2009		---	---	---	---	29	34	28	3	0	0	0
07/09/2009	*	---	---	---	---	14	67	0	1	---	0	84
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		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**1,430**	**1,020**	**267**	**8**	**105**	**551**	**289**
# Days:		**0**	**0**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**102**	**73**	**19**	**1**	**15**	**39**	**21**
YTD		**1,833**	**24,360**	**9,611**	**8,297**	**4,510,795**	**3,563,323**	**727,782**	**17,606**	**803,551**	**940,630**	**676,975**

Two-Week Summary of Passage Indices

				COMBINED SOCKEYE								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
07/03/2009	*	---	---	---	---	0	0	0	7	---	287	0
07/04/2009		---	---	---	---	0	0	0	0	2	0	0
07/05/2009	*	---	---	---	---	0	11	0	5	---	0	79
07/06/2009		---	---	---	---	0	0	0	5	0	0	24
07/07/2009	*	---	---	---	---	29	1	0	6	---	0	0
07/08/2009		---	---	---	---	0	0	0	9	0	0	0
07/09/2009	*	---	---	---	---	0	0	0	9	---	0	42
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		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**139**	**29**	**25**	**109**	**412**	**287**	**145**
# Days:		**0**	**0**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**10**	**2**	**2**	**8**	**59**	**21**	**10**
YTD		**170**	**0**	**0**	**177**	**46,400**	**46,320**	**21,674**	**4,741**	**189,974**	**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: 7/17/09 9:59 AM

07/03/09 TO 07/17/09

		Species					
Site	Data	**CH0**	**CH1**	CO	ST	SO	**Grand Total**
LGR	Sum of NumberCollected	46,580	45	2,660	1,010	90	50,385
	Sum of NumberBarged	50,866	70	3,138	1,169	89	55,332
	Sum of NumberBypassed	191	0	0	0	0	191
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	49	0	0	2	0	51
	Sum of FacilityMorts	234	0	7	5	1	247
	Sum of ResearchMorts	5	0	0	0	0	5
	Sum of TotalProjectMorts	288	0	7	7	1	303
LGS	Sum of NumberCollected	49,072	44	1,832	711	21	51,680
	Sum of NumberBarged	49,405	43	1,917	698	20	52,083
	Sum of NumberBypassed	429	0	0	0	0	429
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	102	0	3	3	0	108
	Sum of FacilityMorts	288	1	1	4	1	295
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	390	1	4	7	1	403
LMN	Sum of NumberCollected	27,657	223	724	192	16	28,812
	Sum of NumberBarged	31,022	230	915	201	15	32,383
	Sum of NumberBypassed	199	1	0	19	0	219
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	20	0	0	0	1	21
	Sum of FacilityMorts	146	0	1	4	0	151
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	166	0	1	4	1	172
MCN	Sum of NumberCollected	540,270	911	350	51	201	541,783
	Sum of NumberBarged	53,942	0	0	0	43	53,985
	Sum of NumberBypassed	479,027	898	350	50	157	480,482
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	248	1	0	0	0	249
	Sum of FacilityMorts	6,805	11	0	1	1	6,818
	Sum of ResearchMorts	248	1	0	0	0	249
	Sum of TotalProjectMorts	7,301	13	0	1	1	7,316
Total Sum of NumberCollected		663,579	1,223	5,566	1,964	328	672,660
Total Sum of NumberBarged		185,235	343	5,970	2,068	167	193,783
Total Sum of NumberBypassed		479,846	899	350	69	157	481,321
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		419	1	3	5	1	429
Total Sum of FacilityMorts		7,473	12	9	14	3	7,511
Total Sum of ResearchMorts		253	1	0	0	0	254
Total Sum of TotalProjectMorts		8,145	14	12	19	4	8,194

YTD Transportation Summary

Source: Fish Passage Center Updated: 7/17/09 10:00 AM

TO: 07/17/09

		Species					
Site	Data	**CH0**	**CH1**	CO	SO	ST	**Grand Total**
LGR	Sum of NumberCollected	689,662	2,352,632	65,293	33,391	3,430,130	6,571,108
	Sum of NumberBarged	667,964	1,500,922	63,173	26,110	1,841,890	4,100,059
	Sum of NumberBypassed	15,856	847,954	1,951	7,068	1,587,772	2,460,601
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	200	118	2	22	33	375
	Sum of FacilityMorts	3,995	2,733	127	191	407	7,453
	Sum of ResearchMorts	19	1,035	0	0	19	1,073
	Sum of TotalProjectMorts	4,214	3,886	129	213	459	8,901
LGS	Sum of NumberCollected	829,150	1,720,157	58,749	33,621	2,517,538	5,159,215
	Sum of NumberBarged	810,909	966,560	55,847	27,739	1,057,072	2,918,127
	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	206	49	3	4	20	282
	Sum of FacilityMorts	5,845	1,622	3	44	322	7,836
	Sum of ResearchMorts	12	4	0	0	0	16
	Sum of TotalProjectMorts	6,063	1,675	6	48	342	8,134
LMN	Sum of NumberCollected	315,963	321,014	13,739	16,039	518,633	1,185,388
	Sum of NumberBarged	308,749	311,986	13,718	15,862	506,262	1,156,577
	Sum of NumberBypassed	5,672	8,789	9	114	12,088	26,672
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	63	15	1	3	9	91
	Sum of FacilityMorts	522	237	6	6	257	1,028
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	585	252	7	9	266	1,119
MCN	Sum of NumberCollected	1,410,123	1,303,532	69,401	105,939	467,652	3,356,647
	Sum of NumberBarged	53,942	0	0	43	0	53,985
	Sum of NumberBypassed	1,347,844	1,301,926	69,335	105,838	467,480	3,292,423
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	327	149	1	2	14	493
	Sum of FacilityMorts	7,728	1,432	65	55	155	9,435
	Sum of ResearchMorts	282	25	0	1	3	311
	Sum of TotalProjectMorts	8,337	1,606	66	58	172	10,239
Total Sum of NumberCollected		3,244,898	5,697,335	207,182	188,990	6,933,953	16,272,358
Total Sum of NumberBarged		1,841,564	2,779,468	132,738	69,754	3,405,224	8,228,748
Total Sum of NumberBypassed		1,378,672	2,910,591	74,120	118,846	3,527,410	8,009,639
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		796	331	7	31	76	1,241
Total Sum of FacilityMorts		18,090	6,024	201	296	1,141	25,752
Total Sum of ResearchMorts		313	1,064	0	1	22	1,400
Total Sum of TotalProjectMorts		19,199	7,419	208	328	1,239	28,393

Cumulative Adult Passage at Mainstem Dams Through: 07/16

		Spring Chinook						Summer Chinook						Fall Chinook					
		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.	
DAM	EndDate	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	**07/14**	**114525**	**66631**	**125543**	**17554**	**160243**	**11507**	**74490**	**34294**	**70412**	**10537**	**66665**	**8226**	**0**	**0**	**0**	**0**	**0**	**0**
TDA	**07/14**	**93908**	**53646**	**95438**	**15801**	**113852**	**9048**	**71803**	**25079**	**57093**	**10760**	**56521**	**6210**	**0**	**0**	**0**	**0**	**0**	**0**
JDA	**07/15**	**76806**	**49733**	**81772**	**14925**	**95147**	**7579**	**59312**	**29142**	**55795**	**12076**	**52572**	**6190**	**0**	**0**	**0**	**0**	**0**	**0**
MCN	**07/15**	**70413**	**43328**	**68080**	**12133**	**86998**	**7409**	**50823**	**18938**	**46552**	**10083**	**48000**	**5455**	**0**	**0**	**0**	**0**	**0**	**0**
IHR	**07/15**	**55435**	**28223**	**53142**	**7757**	**59050**	**4663**	**21734**	**8996**	**22543**	**4881**	**12498**	**2377**	**0**	**0**	**0**	**0**	**0**	**0**
LMN	**07/15**	**66931**	**20009**	**54512**	**6885**	**57079**	**4270**	**21682**	**10512**	**25409**	**2650**	**12634**	**1709**	**0**	**0**	**0**	**0**	**0**	**0**
LGS	**07/15**	**52642**	**24331**	**50396**	**7805**	**54016**	**4453**	**18539**	**10183**	**20065**	**4572**	**10144**	**2257**	**0**	**0**	**0**	**0**	**0**	**0**
LGR	**07/15**	**49667**	**31064**	**50146**	**10946**	**54673**	**5280**	**13427**	**14549**	**20653**	**4780**	**10028**	**2369**	**0**	**0**	**0**	**0**	**0**	**0**
PRD	**07/12**	**13469**	**2910**	**12178**	**620**	**18164**	**621**	**37990**	**1632**	**25644**	**953**	**32743**	**1095**	**0**	**0**	**0**	**0**	**0**	**0**
RIS	**07/14**	**12634**	**6003**	**12490**	**1119**	**14914**	**1069**	**32142**	**4608**	**22387**	**1468**	**29416**	**2455**	**0**	**0**	**0**	**0**	**0**	**0**
RRH	**07/14**	**6090**	**1086**	**4065**	**371**	**5734**	**430**	**21146**	**2813**	**13751**	**771**	**18011**	**1327**	**0**	**0**	**0**	**0**	**0**	**0**
WEL	**07/13**	**6312**	**1858**	**2708**	**426**	**4250**	**321**	**12961**	**1059**	**8246**	**268**	**9797**	**367**	**0**	**0**	**0**	**0**	**0**	**0**
WFA	**07/05**	**23836**	**2278**	**12006**	**244**	-	-	**728**	**64**	**0**	**0**	-	-	**0**	**0**	**0**	**0**	-	-

	Coho						Sockeye			Steelhead			
	2009		2008		10-Yr Avg.				10-Yr			10-Yr	Wild
DAM	Adult	Jack	Adult	Jack	Adult	Jack	2009	2008	Avg.	2009	2008	Avg.	2009
BON	**0**	**0**	**0**	**0**	**0**	**0**	**175504**	**212184**	**76805**	**35905**	**49478**	**40892**	**13792**
TDA	**0**	**0**	**0**	**0**	**0**	**0**	**153058**	**176525**	**64660**	**17786**	**22505**	**19597**	**6825**
JDA	**0**	**0**	**0**	**0**	**0**	**0**	**153118**	**190502**	**70065**	**21264**	**22161**	**18036**	**7988**
MCN	**0**	**0**	**0**	**0**	**0**	**0**	**118824**	**144551**	**56374**	**11034**	**10610**	**10833**	**3580**
IHR	**0**	**0**	**0**	**0**	**0**	**0**	**822**	**519**	**87**	**7890**	**6521**	**6205**	**2089**
LMN	**0**	**0**	**0**	**0**	**0**	**0**	**1049**	**654**	**97**	**9778**	**7224**	**5740**	**3393**
LGS	**0**	**0**	**0**	**0**	**0**	**0**	**976**	**540**	**89**	**7962**	**4080**	**4035**	**2773**
LGR	**0**	**0**	**0**	**0**	**0**	**0**	**1013**	**739**	**109**	**12875**	**8849**	**9135**	**3911**
PRD	**0**	**0**	**0**	**0**	**1**	**0**	**133851**	**182664**	**64322**	**457**	**1645**	**712**	**0**
RIS	**0**	**0**	**0**	**0**	**1**	**0**	**139493**	**174496**	**58263**	**356**	**1358**	**589**	**199**
RRH	**0**	**0**	**0**	**0**	**1**	**0**	**107597**	**140426**	**40879**	**615**	**1386**	**510**	**319**
WEL	**0**	**0**	**0**	**0**	**0**	**0**	**87460**	**125844**	**34430**	**162**	**579**	**159**	**114**
WFA	**0**	**0**	**0**	**0**	-	-	**0**	**0**	-	**15028**	**17241**	-	-

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: 07/17/09

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