



# Fish Passage Center

## Weekly Report #09 - 18

July 10, 2009

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 37% and 337% of average at individual sub-basins over June. Precipitation above The Dalles has been 120% of average over June. Over the entire water year, precipitation has generally been near average.

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

Location	Water Year 2009 June 1-29		Water Year 2009 October 1, 2008 to June 29, 2009	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.61	70	18.10	89
SNAKE RIVER Above Ice Harbor	3.24	229	17.24	115
Columbia Above The Dalles	2.08	120	19.41	99
Kootenai	1.51	63	17.50	84
Clark Fork	1.50	80	14.33	101
Flathead	1.62	63	16.42	88
Pend Oreille/Spokane	1.65	78	25.18	93
Central Washington	0.32	51	6.70	84
SNAKE RIVER Plain	3.12	337	11.11	116
Salmon/Boise/Payette	2.53	178	16.69	95
Clearwater	2.24	93	28.63	107
SW Washington Cascades/Cowlitz	1.06	37	58.72	90
Willamette Valley	1.83	84	47.98	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 3<sup>rd</sup> in the lower Snake River (Lower Granite) and ended on June 20<sup>th</sup>, 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 77.0 Kcfs at Lower Granite over the first portion of the summer period and 64.9 Kcfs last week.

The spring flow objective period began on April 10<sup>th</sup> at Priest Rapids and McNary and ended on June 30<sup>th</sup>, 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 177.0 Kcfs over the first portion of the summer period.

Grand Coulee Reservoir is at 1289.1 feet (7-9-09) and refilled 1.5 feet over the last week. Outflows at Grand Coulee have ranged between 64.7 and 138.0 Kcfs over the last week. The Grand Coulee summer draft will be 1278 feet this year by August 31<sup>st</sup>, 2009.

The Libby Reservoir is currently at elevation 2435.1 feet (7-9-09) and has refilled 2.1 feet last week. Outflows at Libby are currently 8 Kcfs. Outflows at Libby are expected to decrease to 7 Kcfs (minimum bull trout flow) by July 12<sup>th</sup> and remain at this level through August.

Hungry Horse is currently at an elevation of 3559.1 ft (7-9-09) and has refilled 1.0 foot last week. Outflows at Hungry Horse have been 2.2 Kcfs last week.

Dworshak is currently at an elevation of 1595.4 feet (7-9-09) and has drafted 3.9 feet last week. Outflows at Dworshak are currently 7.4 Kcfs, however are expected to increase to full powerhouse if temperatures at the Lower Granite tailrace continue to be above 66°F.

The Brownlee Reservoir was at an elevation of 2074.1 feet on July 9<sup>th</sup>, 2009, drafting 2.1 feet last week. Outflows at Brownlee Dam have been 21.9 to 26.9 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

All of the lower Snake River hydro projects met the court order over the past week.

The 2009 spring spill program began at the lower Columbia River projects ended on June 30<sup>th</sup>. 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. The COE implemented the summer spill of 50% beginning on June 20<sup>th</sup>, which will extend through August 31<sup>st</sup>. 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. The gas cap spill levels had been lowered due to TDG levels at the Camas/Washougal gage being in excess of 115% TDG due to the warm weather. (Note: Camas/Washougal is not a required point of compliance for TDG.) The gas cap level spill was increased on July 8<sup>th</sup>. The 85Kcfs/gas cap spill will continue until July 21, when the daytime spill level will decrease to 75 Kcfs.

Total Dissolved Gas levels were generally below the waiver standards throughout the Snake and Columbia rivers as flows continue to recede, except at the beginning of the week at the Ice Harbor and

Bonneville forebays. The Camas/Washougal monitor exceeded the 115% on July 4-5. 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 sample at Bonneville Dam this past week.

**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 predominated with coho numbers having dropped off rapidly over the past week. Average daily passage index for subyearling Chinook was at 6,000 per day this week compared to 8,000 per day last week.

At Rock Island dam the daily passage indices for subyearling Chinook predominated in the sample, with indices averaging over 130 per day this week compared to nearly 90 per day last week. From July through August subyearling Chinook should predominate in the sample.

In the lower Columbia River subyearling Chinook smolt numbers rose rapidly this past week. At McNary Dam subyearling Chinook passage indices remained relatively high with the average daily index rising to 225,000 on July 8. At Bonneville Dam subyearling Chinook indices were down compared to last week; the index average just over 50,000 per day this week compared to over 94,000 per day last week.

#### **Hatchery Release:**

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. There were no releases of salmonid juveniles scheduled to begin this week in the Snake River Zone. However, releases of subyearling fall Chinook surrogates to the Clearwater River continued this week. These releases began on June 29<sup>th</sup> and are expected to run through mid-July. In all, just over 117,000 subyearlings will be released throughout in this time frame. Although almost all of these fall Chinook surrogates are PIT-tagged, they are otherwise

unmarked. In addition, beginning on or around July 1<sup>st</sup>, approximately 300,000 spring Chinook parr were scheduled for release into the Selway River. This release may have continued into this past 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.

#### **Adult Passage:**

The summer Chinook count began June 1<sup>st</sup> at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 688 and 1601 adult summer Chinook in the last week. The 2009 summer Chinook count of 69776 is about 1.07 times greater than the 2008 count and 1.15 times greater than the 10 year average. The summer Chinook jack count of 32490 is about 3.24 times greater than the 2008 of 10040 and about 4.41 times greater than the 10 year average of 7361. The adult summer Chinook count at The Dalles Dam was 68313, about 97.9% of the Bonneville passage to date. A total of 46132 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 1.11 times greater than the 10 year average. The 2009 McNary summer Chinook jack count of 17307 was 1.83 times greater than the 2008 count and 3.75 times greater than the 10 year average. The adult summer Chinook count at Lower Granite Dam in the Snake River of 11767 was 61.9% of the 2008 count and 1.29 times greater than the 10 year average. The Lower Granite summer Chinook jack count of 11712 was 2.59 times greater than the 2008 count and 5.72 times greater than the 10 year average.

The Bonneville Dam 2009 steelhead count of 24773 is about 87.3% of the 2008 count and 90.5% of the 10 year average. In the Snake River, this year's

Lower Granite steelhead count of 11851 is 1.43 times greater than the 2008 count of 8266 and 1.38 times greater than the 10 year average of 8563. The 2009 wild steelhead count as of July 8th was 3578. At Rock Island Dam, as of July 7th, 214 adult steelhead have been counted and at Rocky Reach Dam, 504 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2009 count for steelhead was 13955, as of June 30th. This year's steelhead count is only about 82.8% of the 2008 count of 16852 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 1288 and 4728 last week. The 2009 adult sockeye count at Bonneville Dam of 170384 is about 81.6% of the 2008 count of 208699 and about 2.30 times greater than the 10 year average of 73974. In the upper Columbia River at Priest Rapids Dam, the 2009 adult sockeye count of 95848 was about 64.1% of the 2008 count and 1.89 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 653 is about 1.56 times greater than the 2008 count of 418 and about 9.07 times greater than the 10 year average count of 72. The Lower Granite Dam 2009 adult sockeye count of 495 was about 1.21 times greater than the 2008 count of 410 and 7.73 times greater than the 10 year average count of 64.

As of July 8th at Bonneville Dam, the adult Shad count was 1366420 which was about 65.5% of the 2008 count of 2084775 and only about 44.4% of the 10 year average count of 3074604.

**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
06/26/2009	136.7	0.2	139.8	0.0	149.9	9.1	146.2	12.5	147.9	28.7	152.9	27.1	151.3	28.1
06/27/2009	140.2	0.2	137.8	0.0	145.5	7.5	141.4	11.2	145.7	25.7	153.5	24.1	150.6	26.5
06/28/2009	144.1	0.2	140.9	0.0	147.4	8.6	144.8	10.0	148.2	22.9	147.6	19.7	143.2	21.9
06/29/2009	135.5	0.1	149.3	0.0	161.6	9.9	157.8	19.9	160.1	28.9	167.9	30.8	162.8	25.4
06/30/2009	82.5	0.2	73.6	0.0	98.1	7.6	108.4	12.5	115.2	23.3	142.0	21.6	141.3	22.4
07/01/2009	80.5	0.2	84.6	0.0	77.1	6.9	73.2	8.5	78.5	22.7	83.5	17.6	90.8	19.4
07/02/2009	80.2	0.1	84.8	0.0	93.5	7.7	96.1	7.6	97.6	18.1	88.0	19.0	76.9	20.9
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

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
06/26/2009	4.3	0.0	32.2	28.0	85.2	18.8	82.5	24.8	81.8	17.5	85.0	56.7		
06/27/2009	5.5	0.0	30.9	27.2	80.7	18.8	76.7	23.1	77.2	17.2	79.5	54.8		
06/28/2009	6.4	0.0	29.8	28.9	84.1	18.7	80.0	23.8	77.8	17.5	80.3	55.0		
06/29/2009	4.3	0.0	29.5	29.0	77.8	18.8	75.3	22.4	74.7	17.2	76.2	32.4		
06/30/2009	4.3	0.0	27.3	29.0	75.1	18.7	70.6	21.0	71.6	17.5	74.7	22.2		
07/01/2009	5.3	0.0	25.4	25.9	71.9	18.6	67.2	20.1	67.8	17.2	69.7	44.8		
07/02/2009	6.8	0.0	25.6	25.4	69.5	18.7	66.9	20.2	65.9	17.5	67.2	51.0		
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	---	---	55.8	18.5	52.7	15.8	49.7	17.1	50.6	15.4		

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
06/26/2009	229.6	114.8	218.9	85.9	213.2	85.2	232.7	97.8	38.3	84.4
06/27/2009	255.7	127.9	242.5	89.4	236.2	95.5	243.6	100.2	41.9	89.4
06/28/2009	243.5	121.6	237.1	76.7	232.0	92.3	253.2	99.8	53.7	87.5
06/29/2009	224.2	112.5	222.8	66.8	213.2	85.5	221.0	99.3	28.9	80.7
06/30/2009	245.1	123.1	219.8	77.6	210.4	84.2	215.9	99.5	28.9	75.9
07/01/2009	193.4	96.9	195.3	77.8	193.4	77.4	215.1	96.3	26.3	80.3
07/02/2009	147.0	73.5	136.5	44.1	131.5	52.8	157.5	95.3	0.0	50.1
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

## 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
<b>Little Goose Dam</b>											
	06/29/09	Chinook + Steelhead	31	0	0	0.00%	0.00%	0	0	0	0
	07/06/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	06/30/09	Chinook + Steelhead	51	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	06/29/09	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
	07/03/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/05/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	06/27/09	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/30/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/07/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	07/07/09	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0

### Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	6/26/2009		to		07/09/09				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service <b>National Marine Fisheries Service</b>	Lyons Ferry Hatchery	CH0	FA	2009	117,362	06-29-09	07-20-09	Big Canyon (Clearwater River)	Clearwater River M F
<b>Total</b>					<b>117,362</b>				
Nez Perce Tribe <b>Nez Perce Tribe Total</b>	Clearwater Hatchery	CH0	SP	2010	300,000	07-01-09	07-15-09	Selway River	Clearwater River M F
					<b>300,000</b>				
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2009	6,700,000	06-15-09	06-30-09	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH0	SU	2009	325,000	06-15-09	06-30-09	Turtle Rock Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH0	SU	2009	418,000	06-15-09	06-30-09	Turtle Rock Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife</b>					<b>7,443,000</b>				
<b>Total</b>					<b>7,443,000</b>				
<b>Grand Total</b>					<b>7,860,362</b>				

### Hatchery Releases Next Two Weeks

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

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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
6/26	104.9	105.2	105.5	24	115.5	116.8	119.9	19	117.8	118.0	118.0	24	111.4	112.4	113.3	19	112.2	112.4	112.6	24
6/27	104.4	104.7	105.0	24	115.5	117.4	118.7	22	117.3	117.6	117.9	24	111.3	112.8	114.3	22	112.8	113.4	113.9	24
6/28	104.8	105.1	105.5	24	113.3	113.6	114.1	21	117.5	117.9	118.2	24	113.1	114.3	115.6	21	114.2	114.6	114.9	24
6/29	105.0	105.4	105.7	24	113.1	113.6	114.3	23	117.6	117.7	118.1	24	112.5	113.5	116.0	23	114.3	114.4	114.6	24
6/30	105.3	105.7	106.2	24	111.7	112.4	112.9	21	116.8	116.9	117.3	24	112.8	113.6	115.0	21	114.2	114.5	114.7	24
7/1	104.9	105.4	105.7	24	111.2	111.9	112.2	21	115.7	116.2	116.5	24	111.5	112.3	113.1	21	113.6	114.1	114.7	24
7/2	105.2	105.8	106.3	24	111.8	112.3	113.6	18	115.9	116.3	117.0	24	111.0	112.6	114.1	18	114.4	115.0	115.5	24
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

### Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
6/26	111.1	111.4	112.0	24	111.9	112.2	112.6	23	113.2	113.8	114.7	23	110.7	111.0	111.2	24	112.3	113.1	113.5	24
6/27	112.2	112.6	113.8	24	111.8	112.1	112.5	24	113.2	113.9	114.5	24	111.3	112.2	112.7	24	112.1	113.3	113.8	24
6/28	113.4	113.8	114.3	24	112.5	112.5	113.2	12	113.5	113.5	114.8	12	112.1	112.6	113.0	24	112.8	113.6	114.2	24
6/29	113.3	113.4	113.6	24	114.2	114.2	114.6	9	115.7	115.7	116.5	9	112.2	112.9	113.3	24	113.1	113.8	116.4	24
6/30	113.4	114.1	114.6	24	114.4	115.1	116.0	24	115.5	116.4	116.9	24	113.3	114.0	114.5	24	112.3	113.2	115.5	24
7/1	113.1	113.8	114.1	24	113.6	114.7	115.2	24	114.4	115.4	116.1	24	114.6	115.3	116.0	24	110.8	112.0	113.1	24
7/2	113.4	114.0	114.7	24	114.9	115.9	116.3	24	115.8	116.9	117.4	24	115.0	115.8	116.6	24	111.9	113.3	114.0	24
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

### Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
6/26	110.8	111.0	111.6	24	115.0	115.3	116.2	24	111.2	111.6	113.2	24	112.4	112.9	114.4	24	111.0	111.3	111.6	24
6/27	110.7	111.5	112.1	24	114.3	115.3	115.9	24	112.1	113.3	114.1	24	112.7	113.3	113.7	24	110.6	111.3	111.9	24
6/28	111.7	112.2	112.7	24	114.9	115.4	115.9	24	112.3	112.8	113.3	24	113.5	113.8	114.6	24	111.6	112.0	112.5	24
6/29	110.8	112.5	113.2	24	115.0	116.4	117.0	24	112.6	114.1	116.7	24	113.1	113.7	114.0	24	111.5	112.1	112.7	24
6/30	111.3	113.9	115.8	24	114.8	117.1	118.5	24	112.5	113.9	115.9	24	113.0	113.6	114.2	24	111.3	111.7	112.2	24
7/1	112.7	113.5	114.2	24	116.4	116.8	117.4	24	114.2	116.3	117.7	24	113.9	114.5	115.7	24	111.7	112.3	113.1	24
7/2	113.7	114.3	114.9	24	116.9	117.5	118.2	24	117.1	119.3	120.9	24	115.9	116.4	117.4	24	112.9	113.9	114.8	24
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	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst			Pasco			Dworshak			Clrwtr-Peck			Anatone			#				
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High		hr			
6/26	112.8	113.2	114.1	24	109.7	110.5	111.0	24	101.3	101.8	102.2	24	101.6	102.4	103.1	24	103.8	104.5	105.0	24
6/27	112.9	113.7	114.2	24	109.9	110.9	111.5	24	104.0	106.4	107.2	24	102.6	104.1	104.8	22	104.1	105.0	105.6	24
6/28	113.3	113.7	113.9	24	110.7	111.4	111.8	24	106.5	107.0	107.4	24	103.5	104.4	105.2	24	104.1	104.8	105.4	24
6/29	113.2	113.6	114.0	24	110.5	111.6	112.2	24	102.4	103.1	105.6	24	102.3	103.3	104.1	24	103.8	104.4	105.0	24
6/30	113.0	113.4	114.1	24	110.5	111.4	111.9	24	101.9	102.5	102.9	23	102.0	103.0	103.8	24	103.3	103.9	104.5	24
7/1	112.6	113.0	113.4	24	110.0	110.7	111.2	24	102.0	102.5	102.9	24	102.1	103.2	104.0	24	103.1	103.9	104.5	24
7/2	112.6	114.0	115.2	24	109.7	110.4	110.7	24	101.3	101.5	101.7	24	102.3	103.4	104.2	24	103.2	104.1	104.6	24
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	---	---	---	0	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

### Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr			#				
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High		hr			
6/26	102.1	103.3	104.2	22	104.1	104.3	104.7	24	108.8	109.1	109.4	24	105.8	106.1	106.3	24	112.4	113.1	113.5	24
6/27	102.3	104.0	105.0	23	103.1	103.3	103.5	24	108.4	108.7	109.0	24	105.9	106.4	107.2	24	112.2	112.9	113.1	24
6/28	103.3	105.0	106.1	24	103.2	103.4	103.6	24	108.6	108.8	109.1	24	107.4	107.6	108.4	24	113.0	113.1	113.2	24
6/29	103.0	104.5	105.5	24	103.5	103.9	104.2	24	108.6	108.8	109.1	24	108.8	109.1	109.7	24	114.0	114.5	114.8	24
6/30	102.5	104.0	105.2	23	103.6	103.8	104.0	24	108.4	108.6	109.1	24	109.3	109.5	109.7	24	113.6	114.2	114.4	24
7/1	102.5	104.2	105.3	23	103.4	103.8	104.1	24	108.6	108.9	109.2	24	109.1	109.4	109.9	24	114.4	114.6	114.9	24
7/2	102.7	104.6	105.7	24	103.3	103.6	103.8	24	108.5	108.7	109.1	24	110.4	111.0	111.8	24	114.6	115.0	115.2	24
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

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

Date	Lower Mon.			L. Mon. Tlwr			Ice Harbor			Ice Harbor Tlwr			McNary-Oregon			#				
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High		hr			
6/26	111.8	112.1	112.3	24	116.5	116.9	117.2	24	112.0	112.2	112.7	24	116.2	116.5	116.8	24	---	---	---	0
6/27	111.5	111.8	112.2	24	115.6	116.1	116.5	24	112.6	113.0	113.7	24	116.1	116.3	116.4	24	---	---	---	0
6/28	112.5	112.8	113.0	24	115.4	116.2	117.0	24	113.6	114.0	114.3	24	115.9	116.1	116.6	24	---	---	---	0
6/29	113.2	113.5	113.8	24	114.8	115.2	116.2	24	114.2	114.4	114.9	24	115.6	115.9	116.5	24	---	---	---	0
6/30	113.2	113.3	113.5	24	115.3	115.9	116.6	24	114.3	114.4	114.4	24	115.5	116.0	116.4	24	---	---	---	0
7/1	113.4	113.6	113.8	24	115.2	116.1	116.7	24	114.1	114.2	114.3	24	115.5	116.2	116.3	24	---	---	---	0
7/2	113.5	113.7	114.0	24	114.7	115.2	116.2	24	114.4	114.7	114.8	24	115.5	115.7	116.0	24	---	---	---	0
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

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

### Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	McNary-Wash			#	McNary Tlwr			#	John Day			#	John Day Tlwr			#	The Dalles			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High	
6/26	110.2	110.5	110.8	24	115.2	116.0	116.4	24	106.1	107.0	107.4	24	118.7	118.8	119.1	24	110.0	110.5	111.3	24
6/27	111.2	112.1	113.9	24	116.6	117.3	117.9	24	107.8	108.7	109.4	24	119.1	119.6	120.0	24	113.6	115.3	116.8	24
6/28	112.2	112.8	113.2	24	115.9	116.7	117.1	24	108.5	108.8	109.2	24	118.9	119.3	119.6	24	113.6	114.7	116.5	24
6/29	113.0	113.6	114.1	24	115.4	116.3	116.6	24	108.7	109.4	109.7	24	118.0	119.2	119.8	24	110.7	111.2	111.7	24
6/30	113.5	114.1	114.2	24	115.8	117.1	117.4	24	109.8	110.6	110.9	24	117.9	119.5	119.9	24	110.8	111.7	113.9	24
7/1	112.0	112.9	113.9	24	113.5	113.8	114.1	24	111.2	112.2	113.0	24	118.4	118.9	119.3	24	115.1	115.8	116.6	24
7/2	112.0	112.3	113.0	24	116.3	117.1	117.4	24	113.0	113.3	114.5	24	115.8	116.1	117.2	24	118.0	119.1	119.7	24
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

### Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High	
6/26	114.7	115.0	115.3	24	109.0	109.3	109.7	24	---	---	---	0	111.8	113.6	115.0	24	116.4	118.0	120.2	24
6/27	116.9	118.0	118.4	24	109.7	111.1	111.6	24	---	---	---	0	112.7	115.0	117.1	24	116.7	118.2	120.2	24
6/28	117.2	117.5	117.7	24	111.8	112.3	112.6	24	---	---	---	0	112.7	114.8	116.6	24	117.1	118.4	120.2	24
6/29	115.8	116.6	117.3	24	111.9	112.2	112.8	24	---	---	---	0	113.7	115.8	117.7	24	116.3	117.8	119.9	24
6/30	115.3	115.7	116.2	24	110.0	110.3	110.7	24	---	---	---	0	113.3	115.7	117.7	24	116.5	118.0	120.3	24
7/1	117.0	117.5	118.0	24	110.0	110.0	110.4	9	---	---	---	0	113.8	116.3	117.7	24	116.5	118.1	123.0	24
7/2	117.3	117.9	118.1	24	114.9	115.3	116.3	13	---	---	---	0	115.9	118.8	120.6	24	115.8	116.9	119.0	24
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

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/10/2009 9:36

## 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>

Date	COMBINED YEARLING CHINOOK										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
06/26/2009	---	---	---	---	130	43	26	0	823	905	201
06/27/2009 *	---	---	---	---	96	36	15	5	---	473	264
06/28/2009	---	---	---	---	33	14	12	2	1,536	896	557
06/29/2009 *	---	---	---	---	0	20	26	2	---	159	365
06/30/2009 *	---	---	---	---	33	1	17	2	621	1,357	276
07/01/2009 *	---	---	---	---	0	0	25	0	---	296	543
07/02/2009 *	---	---	---	---	34	0	11	0	414	830	227
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>388</b>	<b>175</b>	<b>368</b>	<b>18</b>	<b>4,425</b>	<b>5,833</b>	<b>3,138</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>13</b>	<b>26</b>	<b>1</b>	<b>632</b>	<b>417</b>	<b>224</b>
<b>YTD</b>	<b>37,667</b>	<b>44,616</b>	<b>20,207</b>	<b>29,713</b>	<b>3,081,404</b>	<b>2,432,943</b>	<b>448,773</b>	<b>9,221</b>	<b>2,250,403</b>	<b>1,031,670</b>	<b>1,717,083</b>

Date	COMBINED SUBYEARLING CHINOOK										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
06/26/2009	---	---	---	---	4,827	3,274	4,831	84	146,712	83,522	111,517
06/27/2009 *	---	---	---	---	7,777	5,557	2,070	88	---	42,124	102,096
06/28/2009	---	---	---	---	12,875	19,912	1,459	56	240,939	62,545	124,062
06/29/2009 *	---	---	---	---	9,055	9,883	820	104	---	46,039	85,749
06/30/2009 *	---	---	---	---	8,669	8,049	6,732	169	138,752	38,507	78,967
07/01/2009 *	---	---	---	---	5,336	6,217	3,728	63	---	48,415	69,122
07/02/2009 *	---	---	---	---	8,740	6,076	6,220	56	81,632	44,827	80,136
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>99,660</b>	<b>104,771</b>	<b>53,267</b>	<b>1,558</b>	<b>1,070,672</b>	<b>575,912</b>	<b>1,020,428</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7,119</b>	<b>7,484</b>	<b>3,805</b>	<b>111</b>	<b>152,953</b>	<b>41,137</b>	<b>72,888</b>
<b>YTD</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>545</b>	<b>947,836</b>	<b>1,125,040</b>	<b>403,532</b>	<b>3,914</b>	<b>2,142,106</b>	<b>1,027,169</b>	<b>3,716,186</b>

Two-Week Summary of Passage Indices

COMBINED COHO											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
06/26/2009	---	---	---	---	292	429	155	24	204	645	803
06/27/2009 *	---	---	---	---	771	422	33	14	---	710	908
06/28/2009	---	---	---	---	1,108	309	44	12	616	422	284
06/29/2009 *	---	---	---	---	358	514	50	8	---	477	823
06/30/2009 *	---	---	---	---	231	343	540	10	411	115	276
07/01/2009 *	---	---	---	---	268	300	268	19	---	148	361
07/02/2009 *	---	---	---	---	711	229	265	18	309	664	421
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,641</b>	<b>4,598</b>	<b>2,173</b>	<b>165</b>	<b>1,953</b>	<b>4,185</b>	<b>4,542</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>474</b>	<b>328</b>	<b>155</b>	<b>12</b>	<b>279</b>	<b>299</b>	<b>324</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>332</b>	<b>90,205</b>	<b>79,674</b>	<b>18,280</b>	<b>37,551</b>	<b>125,817</b>	<b>239,987</b>	<b>502,517</b>

COMBINED STEELHEAD											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
06/26/2009	---	---	---	---	778	243	155	3	106	906	669
06/27/2009 *	---	---	---	---	321	394	128	5	---	237	401
06/28/2009	---	---	---	---	163	459	104	5	155	158	557
06/29/2009 *	---	---	---	---	195	276	90	2	---	159	184
06/30/2009 *	---	---	---	---	428	203	86	5	206	58	367
07/01/2009 *	---	---	---	---	235	157	68	1	---	0	361
07/02/2009 *	---	---	---	---	237	69	54	0	0	166	137
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,542</b>	<b>2,478</b>	<b>936</b>	<b>28</b>	<b>570</b>	<b>2,235</b>	<b>2,965</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>253</b>	<b>177</b>	<b>67</b>	<b>2</b>	<b>81</b>	<b>160</b>	<b>212</b>
<b>YTD</b>	<b>1,833</b>	<b>24,102</b>	<b>9,611</b>	<b>8,297</b>	<b>4,510,550</b>	<b>3,562,980</b>	<b>727,766</b>	<b>17,605</b>	<b>803,549</b>	<b>940,630</b>	<b>676,975</b>

## 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)
06/26/2009	---	---	---	---	0	0	13	3	102	0	0
06/27/2009 *	---	---	---	---	32	0	5	4	---	0	254
06/28/2009	---	---	---	---	0	22	1	2	0	106	90
06/29/2009 *	---	---	---	---	33	0	1	2	---	0	91
06/30/2009 *	---	---	---	---	0	14	21	2	0	0	0
07/01/2009 *	---	---	---	---	0	14	33	3	---	0	11
07/02/2009 *	---	---	---	---	0	11	0	4	103	166	0
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	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>73</b>	<b>74</b>	<b>61</b>	<b>207</b>	<b>559</b>	<b>591</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>30</b>	<b>40</b>	<b>42</b>
<b>YTD</b>	<b>170</b>	<b>0</b>	<b>0</b>	<b>177</b>	<b>46,290</b>	<b>46,303</b>	<b>21,649</b>	<b>4,673</b>	<b>189,564</b>	<b>111,931</b>	<b>74,913</b>

\* 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:

7/10/09 9:33 AM

		06/26/09 TO 07/10/09					
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	73,850	295	4,940	2,650	70	81,805
	Sum of NumberBarged	73,260	294	4,932	2,645	67	81,198
	Sum of NumberBypassed	343	0	0	0	0	343
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	44	0	0	1	0	45
	Sum of FacilityMorts	198	1	8	4	3	214
	Sum of ResearchMorts	5	0	0	0	0	5
	Sum of TotalProjectMorts	247	1	8	5	3	264
<b>LGS</b>	Sum of NumberCollected	73,144	123	3,211	1,730	52	78,260
	Sum of NumberBarged	71,244	122	3,388	1,720	51	76,525
	Sum of NumberBypassed	1,598	0	0	0	0	1,598
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	80	0	2	2	0	84
	Sum of FacilityMorts	220	1	1	8	1	231
	Sum of ResearchMorts	2	0	0	0	0	2
	Sum of TotalProjectMorts	302	1	3	10	1	317
<b>LMN</b>	Sum of NumberCollected	39,283	271	1,615	706	56	41,931
	Sum of NumberBarged	37,930	270	1,613	423	56	40,292
	Sum of NumberBypassed	1,213	1	0	278	0	1,492
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	30	0	1	1	0	32
	Sum of FacilityMorts	110	0	1	5	0	116
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	140	0	2	6	0	148
<b>MCN</b>	Sum of NumberCollected	521,111	2,159	952	278	101	524,601
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	520,036	2,152	951	275	100	523,514
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	108	1	0	0	0	109
	Sum of FacilityMorts	874	5	1	3	1	884
	Sum of ResearchMorts	93	1	0	0	0	94
	Sum of TotalProjectMorts	1,075	7	1	3	1	1,087
Total Sum of NumberCollected		707,388	2,848	10,718	5,364	279	726,597
Total Sum of NumberBarged		182,434	686	9,933	4,788	174	198,015
Total Sum of NumberBypassed		523,190	2,153	951	553	100	526,947
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		262	1	3	4	0	270
Total Sum of FacilityMorts		1,402	7	11	20	5	1,445
Total Sum of ResearchMorts		100	1	0	0	0	101
Total Sum of TotalProjectMorts		1,764	9	14	24	5	1,816

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/10/09 9:33 AM

TO: 07/10/09

Site	Data	Species					Grand Total
		CH0	CH1	CO	SO	ST	
<b>LGR</b>	Sum of NumberCollected	673,332	2,352,632	64,723	33,321	3,429,970	6,553,978
	Sum of NumberBarged	653,413	1,500,922	62,644	26,041	1,841,744	4,084,764
	Sum of NumberBypassed	15,808	847,954	1,951	7,068	1,587,772	2,460,553
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	189	118	2	22	31	362
	Sum of FacilityMorts	3,905	2,733	126	190	404	7,358
	Sum of ResearchMorts	17	1,035	0	0	19	1,071
	Sum of TotalProjectMorts	4,111	3,886	128	212	454	8,791
<b>LGS</b>	Sum of NumberCollected	812,034	1,720,156	58,349	33,609	2,517,299	5,141,447
	Sum of NumberBarged	792,050	903,189	51,699	25,735	993,093	2,765,766
	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	164	49	2	4	19	238
	Sum of FacilityMorts	5,708	1,622	3	44	321	7,698
	Sum of ResearchMorts	12	4	0	0	0	16
	Sum of TotalProjectMorts	5,884	1,675	5	48	340	7,952
<b>LMN</b>	Sum of NumberCollected	308,011	320,962	13,607	16,023	518,623	1,177,226
	Sum of NumberBarged	301,813	311,934	13,590	15,847	506,252	1,149,436
	Sum of NumberBypassed	5,572	8,789	9	114	12,088	26,572
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	59	15	1	2	9	86
	Sum of FacilityMorts	465	237	6	6	257	971
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	524	252	7	8	266	1,057
<b>MCN</b>	Sum of NumberCollected	1,093,780	1,303,121	69,251	105,739	467,651	3,039,542
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,091,850	1,301,527	69,185	105,681	467,480	3,035,723
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	160	148	1	2	14	325
	Sum of FacilityMorts	1,655	1,421	65	55	154	3,350
	Sum of ResearchMorts	115	25	0	1	3	144
	Sum of TotalProjectMorts	1,930	1,594	66	58	171	3,819
Total Sum of NumberCollected		2,887,157	5,696,871	205,930	188,692	6,933,543	15,912,193
Total Sum of NumberBarged		1,747,276	2,716,045	127,933	67,623	3,341,089	7,999,966
Total Sum of NumberBypassed		1,122,530	2,910,192	73,970	118,689	3,527,410	7,752,791
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		572	330	6	30	73	1,011
Total Sum of FacilityMorts		11,733	6,013	200	295	1,136	19,377
Total Sum of ResearchMorts		144	1,064	0	1	22	1,231
Total Sum of TotalProjectMorts		12,449	7,407	206	326	1,231	21,619

**Cumulative Adult Passage at Mainstem Dams Through: 07/09**

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	07/08	114525	66631	125543	17554	160243	11507	69776	32490	65394	10040	60829	7361	0	0	0	0	0	0
TDA	07/08	93908	53646	95438	15801	113852	9048	68313	23777	53500	10098	51087	5515	0	0	0	0	0	0
JDA	07/08	76806	49733	81772	14925	95147	7579	55559	27096	51435	11328	46645	5335	0	0	0	0	0	0
MCN	07/08	70413	43328	68080	12133	86998	7409	46132	17307	42260	9461	41516	4615	0	0	0	0	0	0
IHR	07/08	55435	28223	53142	7757	59050	4663	19763	8633	21539	4828	11826	2159	0	0	0	0	0	0
LMN	07/08	66931	20009	54512	6885	57079	4270	20336	8640	23838	2503	11684	1537	0	0	0	0	0	0
LGS	07/08	52642	24331	50396	7805	54016	4453	16282	8796	18874	4352	9317	1998	0	0	0	0	0	0
LGR	07/08	49667	31064	50146	10946	54673	5280	11767	11712	19006	4523	9083	2046	0	0	0	0	0	0
PRD	07/06	13469	2910	12178	620	18164	621	29941	1214	19316	827	24294	833	0	0	0	0	0	0
RIS	07/07	12634	6003	12490	1119	14914	1069	24325	3426	14217	797	19373	1581	0	0	0	0	0	0
RRH	07/07	6090	1086	4065	371	5734	430	14280	1745	6752	371	10492	665	0	0	0	0	0	0
WEL	07/07	6313	1857	2708	426	4250	321	8302	586	3369	60	5123	176	0	0	0	0	0	0
WFA	06/30	22039	2067	11173	218	-	-	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	0	0	0	0	0	0	170384	208699	73974	24773	28359	27363	8174
TDA	0	0	0	0	0	0	147859	173249	61858	11624	12062	12294	4053
JDA	0	0	0	0	0	0	144727	184067	65738	14065	14062	12318	5089
MCN	0	0	0	0	0	0	108850	138309	51373	7097	7282	7187	2154
IHR	0	0	0	0	0	0	653	418	72	5632	5137	4563	1501
LMN	0	0	0	0	0	0	729	495	74	7447	5758	4229	2719
LGS	0	0	0	0	0	0	644	389	66	6714	3295	3328	2422
LGR	0	0	0	0	0	0	495	410	64	11851	8266	8563	3578
PRD	0	0	0	0	1	0	95848	149397	50495	259	1280	440	0
RIS	0	0	0	0	1	0	83694	110482	38024	214	896	327	115
RRH	0	0	0	0	1	0	56247	84357	25289	504	1028	347	258
WEL	0	0	0	0	0	0	40557	56421	18024	125	417	99	87
WFA	0	0	0	0	-	-	0	0	-	13955	16852	-	-

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: 07/09/09

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