



Fish Passage Center

Weekly Report #10 - 18

July 16, 2010

1827 NE 44th Ave., Suite 240
 Portland, OR 97213
 phone: 503/230-4099
 fax: 503/230-7559

Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 28% and 112% of average at individual sub-basins over July. Precipitation above The Dalles has been 71% of average over July. Over the 2010 water year, precipitation has ranged between 88% and 104% of average.

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

Location	Water Year 2010		Water Year 2010	
	July 1-12		October 1, 2009 to July 12, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.69	99	19.14	90
SNAKE RIVER ABOVE ICE HARBOR	0.12	35	15.24	99
Columbia Above The Dalles	0.34	71	19.24	95
Kootenai	0.82	112	19.07	88
Clark Fork	0.37	80	13.61	93
Flathead	0.59	97	20.19	104
Pend Oreille/Spokane	0.47	89	26.82	97
Central Washington	0.06	40	8.46	104
SNAKE RIVER PLAIN	0.07	28	9.01	92
Salmon/Boise/Payette	0.13	41	17.71	99
Clearwater	0.25	44	26.67	98
SW Washington Cascades/Cowlitz	0.40	75	61.68	93
Willamette Valley	0.21	64	53.25	95

Table 2 displays the June Final and July Final runoff volume forecasts for multiple reservoirs. The July Final Runoff Volume Forecasts remained similar to the June Final Forecasts at Upper Columbia locations; however increased between 11-18% relative to the June Final forecasts at Snake River locations. The current forecast at The Dalles between January and July is 81900 Kaf (76% 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)	69	74000	76	81900
Grand Coulee (Jan-July)	74	46400	76	47900
Libby Res. Inflow, MT (Apr-Aug)	71	4420	71	4440
Hungry Horse Res. Inflow, MT (Jan-July)	75	1660	81	1800
Lower Granite Res. Inflow (Apr- July)	68	14600	86	18600
Brownlee Res. Inflow (Apr-July)	58	3670	74	4680
Dworshak Res. Inflow (Apr-July)	63	1670	74	1950

* Denotes COE Forecast

The Summer Biological Opinion flow period began on June 21 in the lower Snake River (Lower Granite). According to the June Final Water Supply Forecast, the summer flow objective this summer is 50 Kcfs at Lower Granite, flows at Lower Granite Dam have averaged 78.1 Kcfs from June 21-July 15. Flows at Lower Granite have averaged 50.1 Kcfs over the last week.

The Summer Biological Opinion flow period began on July 1st at McNary Dam with a flow objective of 200 Kcfs. Flows from July 1st to July 15th averaged 213.7 Kcfs and 198.2 Kcfs last week.

Grand Coulee Reservoir is at 1288.5 feet (7-15-10) and refilled 0.2 feet over the last week. Outflows at Grand Coulee have ranged between 103.9 and 137.5 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2438.3 feet (7-15-10) and has refilled 2.7 feet last week. Outflows at Libby Dam have been decreased to 7.0 Kcfs. Inflows to Libby have ranged between 14.9 Kcfs to 21.5 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3559.0 feet (7-15-10) and has held steady last week. Outflows at Hungry Horse are currently 4.3 Kcfs.

Dworshak is currently at an elevation of 1592.7 feet (7-15-10) and has drafted approximately 4.8 feet last week. Outflows from Dworshak are currently 11 Kcfs and are expected to increase to 12 Kcfs on July 19th, 2010.

The Brownlee Reservoir was at an elevation of 2072.4 feet on July 15th, 2010 drafting 2.0 feet last week. Over the last week, outflows at Brownlee have ranged between 11.4-17.0 Kcfs.

Spill:

On June 21st the Snake projects transitioned to the summer spill program. The following table shows the planned operations for summer 2010.

Project	Day/Night Spill
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	June 21-July 13: 30%/30% vs. 45 Kcfs/Gas Cap July 13-August 31: 45 Kcfs/Gas Cap (approximate Gas Cap range = 75-95 Kcfs)

Spill at Dworshak Dam began on July 15th, as the outflow at the project was increased above hydraulic

capacity for flow augmentation and temperature control. Spill levels at Lower Granite, Little Goose, and Lower Monumental dams were managed to their respective planned summer levels. The Ice Harbor simulated test of 30% spill versus 45 Kcfs during daytime hours and gas cap spill during nighttime hours began on April 29 and continued through the July 13th. After that, spill at Ice Harbor reverted back to the 45Kcfs/gas cap level. Spill was below 45 Kcfs at times due to low flows and powerhouse minimums.

Summer spill programs at McNary and Bonneville dams were initiated on June 21st and June 16th, respectively; at John Day and The Dalles dams on July 1st. The following table shows the planned operations for summer 2010.

Project	Day/Night Spill
McNary	50%/50%
John Day	Testing (July 1-July 22): 30%/30% vs. 40%/40% Post-Testing (July 23-August 31): 30%/30%
The Dalles	40%/40%
Bonneville	Testing (June 16-July 20): 85 Kcfs/121 Kcfs vs. 95 Kcfs/95 Kcfs Post-Testing (July 21-August 31): 75 Kcfs/Gas Cap

The planned spill levels of 50% of instantaneous flows were met at McNary Dam this week. At John Day Dam the testing of 30% spill versus 40% spill occurred in two-day blocks. The objectives of the study were met on both the 30% and 40% spill days. The planned spill levels of 40% were met at The Dalles Dam over the past week. Spill at Bonneville Dam has been managed to the study objectives of 95 Kcfs for 24 hours versus 85 Kcfs during daytime hours and 121 Kcfs during nighttime hours.

Total dissolved gas levels have been below the States' water quality waiver levels throughout the lower Snake and lower Columbia hydrosystem, with the exception of one day (July 9) at the Bonneville forebay. Furthermore, the tailrace monitor malfunctioned for at Ice Harbor for 7 hours on July 14th.

At present, GBT monitoring is being implemented at Little Goose, Lower Monumental, McNary, Bonneville and Rock Island dams. No signs of GBT were seen at any of the monitoring sites this week.

Smolt Monitoring:

Subyearling Chinook predominate at all SMP

sampling sites as small numbers of spring migrants continue to be collected. Subyearling Chinook passage indices continued to decrease at all Snake River sites. At Rock Island Dam subyearling Chinook passage increased while at McNary Dam subyearling indices were lower this week. Subyearling Chinook indices were higher at Bonneville dam.

At Lower Granite Dam passage indices for all smolts decreased over the past week. Subyearling Chinook are the primary species passing, but small numbers of steelhead also were collected during the last week. Subyearling Chinook passage indices peaked on June 5 at 115,000. The average daily subyearling index fell to 4,900 per day this week compared to a daily average of 5,600 last week. Passage indices at Little Goose Dam and Lower Monumental Dam followed a similar pattern, with subyearling Chinook predominating but numbers of smolts of all species declining.

At Rock Island Dam subyearling summer migrants predominated in the sample over the past month. Passage indices for subyearlings were higher than last week with the daily index averaging 290 this week compared to about 230 per day last week. The bypass at Rock Island was shutdown on July 6 as adult salmon (mostly sockeye) made their way into an attraction water pool outside the right-bank fishway. A missing section of grating allowed fish to move out of the ladder and into the attraction water pool. The attraction pool is fed by the bypass system so that the entire bypass had to be shutdown. So no juvenile fish sampling has been available since a partial sample on July 7 and turbine loading priority has been shifted to Powerhouse 1 on the left bank while repairs are made.

At McNary Dam subyearling Chinook predominated over the past week. Indices for subyearling Chinook rose to 373,000 on July 10 but the weekly average was down to 170,000 this week compared to 190,000 per day average last week. It should be mentioned that the sample on July 14 was only a partial sample due maintenance on equipment in the bypass. Transport will begin July 16 at McNary Dam and the site will switch to every day sampling to provide data for transport operations.

At Bonneville Dam subyearling Chinook passage indices increased slightly from 91,000 per day last week to 99,000 per day this week.

John Day Dam SMP personnel have reported an unusual number of deformed subyearling Chinook in their samples the past week. These are hatchery

origin fish (fin clipped) with bodies that have spinal deformities making them oddly misshapen. The deformities are showing up at McNary Dam as well but have not been seen at Snake River sites.

Hatchery Release:

Snake River Zone: The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. Approximately 300,000 spring Chinook parr from the Nez Perce Tribal Hatchery were scheduled for release into the Selway River between July 1st and July 15th. These spring Chinook parr are 100% unmarked and are not expected to out-migrate until spring of 2011. There were no other releases of juvenile salmonids scheduled for this zone this week. Furthermore, there are no releases of juvenile salmonids scheduled for this zone over the next two weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There were no releases of juvenile salmonids scheduled for this zone this week. Furthermore, there are no releases of juvenile salmonids scheduled for 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. There were no releases of juvenile salmonids scheduled for this zone this week. There are also no releases of juvenile salmonids scheduled for this zone over the next two weeks.

Adult Fish Passage:

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 605 and 1558 adult summer Chinook in the last week. The 2010 summer Chinook count of 90192 is about 1.2 times greater than the 2009 count and 1.24 times greater than the 10 year average. The 2010 Bonneville Dam summer Chinook jack count of 14245 is only about 41.3% of the 2009 count. However, the 2010 Bonneville Dam summer Chinook jack count is about 1.24 times greater than the 10 year average count. At McNary Dam 57859 adult summer Chinook have been counted. The 2010 McNary adult summer Chinook is about 1.15 times greater than the 2009 count and about 1.13 times greater than the 10 average. The 2010 summer Chinook jack count of 6526 is about 34.8% of the 2009 count and 92.1% of the 10 year average. The adult summer Chinook count at Lower Granite Dam in the Snake River of 27149

is about 2 times greater than the 2009 count and 2.45 times greater than the 10 year average. The Lower Granite summer Chinook jack count of 4639 is about 31.9% of the 2009 count, while being 1.26 times greater than the 10 year average.

The Bonneville Dam 2010 steelhead count of 101092 is about 2.63 times greater than the 2009 count of 38407. The 2010 steelhead count is about 2.2 times greater than of the 10 year average of 45630. In the Snake River, this year's Lower Granite steelhead count of 14560 is about 1.13 times greater than the 2009 count and about 1.44 times greater than the 10 year average count of 10091. The 2010 LGR wild steelhead count as of July 15th was 5635. The 2010 Rock Island Dam adult steelhead count of 940 is about 2.8 times greater than the 2009 count and 1.7 times greater than the 10 year average. At Willamette Falls Dam, the 2010 count for steelhead was 25918, as of June 30th. This year's steelhead count is about 1.8 times greater than the 2009 count of 14283 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 1187 and 5983 last week. The 2010 adult sockeye count at Bonneville Dam of 382343 is about 2.17 times greater than the 2009 count and about 4.1 times greater than the 10 year average. The 2010 adult sockeye count at McNary Dam of 268959 is about 2.28 times greater than the 2009 count and 4 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 zone at Ice Harbor Dam, the 2010 adult sockeye count of 1096 is about 1.3 times greater than the 2009 count of 822 and about 6.48 times greater than the 10 year average count of 169. The Lower Granite Dam 2010 adult sockeye count of 1509 is about 1.48 times greater than the 2009 count of 1014 and 7.3 times greater than the 10 year average of 207. As of July 15th at Bonneville Dam, the adult Shad count was 1035060 which was about 75.5% of the 2009 count of 1370666 and about 33.6% of the 10 year average count of 3075510.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:		7/2/2010		to		07/15/10			
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2010	114,017	06-21-10	07-09-10	Big Canyon (Clearwater River)	Clearwater River M F
National Marine Fisheries Service Total					114,017				
Nez Perce Tribe	Clearwater Hatchery	CH0	SP	2011	300,000	07-01-10	07-15-10	Selway River	Clearwater River M F
Nez Perce Tribe Total					300,000				
Grand Total					414,017				

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 7/16/2010 to 7/29/2010

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

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/02/2010	156.7	6.1	160.3	4.6	176.6	16.8	177.1	19.1	181.5	34.7	196.9	79.2	195.0	76.0
07/03/2010	113.8	0.2	129.3	0.0	144.5	10.0	147.0	14.6	155.3	28.9	163.3	35.8	159.2	39.2
07/04/2010	110.2	0.2	103.1	0.0	116.6	8.2	116.3	12.6	120.3	29.8	133.0	20.1	134.4	27.7
07/05/2010	129.9	0.2	126.5	0.0	136.9	8.5	136.1	11.7	141.6	27.0	143.2	20.1	137.1	26.7
07/06/2010	110.0	0.2	121.2	0.0	136.4	8.0	140.0	11.9	147.4	27.4	153.8	20.4	152.8	27.1
07/07/2010	120.6	0.2	113.9	0.0	119.5	6.8	116.7	12.2	121.9	27.8	135.4	19.4	136.4	26.7
07/08/2010	132.6	0.2	137.2	0.0	142.2	7.0	144.1	12.4	146.9	28.6	145.1	20.3	136.4	27.0
07/09/2010	126.3	0.2	136.7	0.0	149.2	13.9	153.7	18.1	162.3	29.3	168.8	39.8	167.1	46.3
07/10/2010	103.9	0.2	105.1	0.0	123.2	7.1	129.7	10.4	140.7	25.9	147.6	21.8	147.2	31.3
07/11/2010	104.2	0.2	111.8	0.0	121.0	7.4	120.5	10.3	132.0	26.6	142.5	20.1	138.8	27.8
07/12/2010	108.8	0.2	117.7	0.0	117.2	8.4	118.9	11.4	127.9	29.0	136.7	19.3	135.7	25.9
07/13/2010	120.1	0.2	114.4	0.0	131.0	7.8	129.2	11.0	137.6	29.1	133.9	20.0	129.3	27.8
07/14/2010	137.5	0.2	145.2	0.0	147.8	22.8	142.4	11.8	148.8	27.1	148.0	27.1	143.5	27.9
07/15/2010	121.2	0.2	122.2	0.0	135.0	10.3	138.5	14.8	146.2	27.1	152.5	25.7	151.8	34.2

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/02/2010	4.5	0.0	13.9	15.6	72.2	19.0	72.7	21.9	69.3	17.3	71.6	52.6		
07/03/2010	5.3	0.0	13.4	13.1	62.8	18.8	64.5	19.4	61.9	17.5	63.3	25.9		
07/04/2010	5.3	0.0	14.0	12.6	60.4	18.8	60.3	18.1	57.0	17.4	58.2	17.3		
07/05/2010	5.3	0.0	13.6	12.5	58.2	18.7	58.4	17.4	56.0	17.3	58.4	40.6		
07/06/2010	7.4	0.0	14.3	15.9	56.9	18.7	56.4	16.9	54.0	17.4	56.4	46.5		
07/07/2010	7.6	0.0	13.9	15.9	56.3	18.6	56.2	16.9	53.1	17.3	55.2	24.2		
07/08/2010	7.6	0.0	13.2	17.1	57.4	18.7	57.9	17.4	56.3	17.5	59.4	17.7		
07/09/2010	8.2	0.0	13.3	15.9	51.9	18.7	50.9	15.3	48.4	17.1	49.6	14.8		
07/10/2010	9.5	0.0	12.7	17.2	55.1	18.7	56.4	16.8	53.5	17.5	55.5	16.6		
07/11/2010	9.5	0.0	12.5	15.3	53.0	18.6	53.1	15.8	50.2	17.4	50.9	36.1		
07/12/2010	9.5	0.0	12.5	14.2	47.1	18.7	44.6	13.4	40.1	17.5	40.7	30.6		
07/13/2010	9.5	0.0	11.9	13.8	48.7	18.7	49.9	14.9	49.2	17.2	51.6	41.6		
07/14/2010	9.5	0.0	12.5	11.4	42.8	18.6	40.9	12.2	38.0	17.4	40.0	30.1		
07/15/2010	10.9	1.4	---	---	52.2	18.7	55.4	16.6	53.1	17.1	57.1	45.1		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
07/02/2010	253.9	127.3	255.2	102.0	242.7	97.3	250.6	90.2	66.2	81.8
07/03/2010	251.9	128.4	252.7	81.1	234.6	93.7	244.5	99.8	52.9	79.5
07/04/2010	218.9	109.7	201.4	60.7	191.9	77.0	202.3	94.6	17.4	77.9
07/05/2010	206.7	103.6	218.9	82.2	208.2	83.4	224.4	89.4	39.8	82.8
07/06/2010	206.9	103.7	203.8	81.4	186.4	75.0	199.2	94.2	9.0	83.5
07/07/2010	203.2	102.1	204.4	81.8	193.5	77.5	210.6	99.6	16.9	81.7
07/08/2010	208.7	104.8	203.3	81.3	191.5	76.8	200.6	94.7	18.2	76.1
07/09/2010	213.8	107.2	208.1	66.4	197.8	78.9	225.5	89.8	40.0	83.3
07/10/2010	213.0	106.6	194.9	58.9	180.7	72.0	193.2	100.3	0.0	80.6
07/11/2010	206.5	103.6	211.5	63.3	205.8	82.1	213.6	90.5	28.4	82.4
07/12/2010	207.1	103.8	178.6	53.6	163.4	65.4	171.4	100.4	29.2	29.5
07/13/2010	178.9	89.9	203.9	76.8	196.2	78.5	203.6	90.6	68.4	32.2
07/14/2010	188.1	93.4	175.9	70.5	162.6	65.0	179.5	99.9	36.2	31.1
07/15/2010	179.8	90.5	172.8	54.8	161.8	65.0	180.0	89.7	30.1	47.8

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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
7/2	105.4	105.7	106.1	23	119.4	120.1	120.4	21	116.3	116.5	116.8	24	111.5	112.1	112.9	21	113.0	113.8	115.2	24
7/3	104.9	105.0	105.2	24	117.5	118.2	118.6	22	116.2	116.3	116.5	24	109.4	109.9	110.2	22	111.6	111.9	112.6	24
7/4	104.7	105.0	105.0	24	117.9	118.2	118.9	21	116.5	116.7	116.8	24	110.5	111.1	112.1	21	111.7	112.1	112.4	24
7/5	104.6	104.7	104.8	23	116.9	117.1	117.5	21	116.1	116.3	116.4	24	110.6	111.2	112.8	21	110.8	111.1	111.4	24
7/6	104.3	104.5	104.7	24	116.3	116.8	117.6	23	116.0	116.2	116.5	24	110.1	110.5	111.1	23	111.1	111.5	111.9	24
7/7	103.9	104.3	104.5	24	117.4	117.8	118.3	22	115.8	116.0	116.1	24	111.2	111.9	112.5	22	111.4	112.3	112.6	24
7/8	104.7	105.1	105.4	23	115.4	115.8	117.0	21	115.8	116.2	116.6	24	111.4	112.3	113.1	21	112.5	113.3	113.7	24
7/9	105.4	105.7	106.0	24	114.4	115.2	115.8	23	116.4	116.6	116.8	24	111.6	112.6	113.3	23	112.9	113.4	113.7	24
7/10	105.8	106.0	106.2	24	113.9	114.1	114.3	21	115.8	116.1	116.5	24	111.8	112.7	113.7	21	113.1	113.6	113.9	24
7/11	105.8	106.1	106.5	24	114.3	115.0	115.5	21	115.3	115.6	116.2	24	112.1	113.2	114.0	21	113.2	114.0	114.5	24
7/12	106.5	106.9	107.3	23	113.8	114.3	114.8	21	116.0	116.2	116.3	24	112.1	112.9	114.0	21	112.8	113.2	113.4	24
7/13	105.3	106.0	106.2	24	111.2	111.6	112.2	22	115.4	115.5	115.7	24	111.4	112.2	112.6	22	111.0	111.5	111.9	24
7/14	104.7	105.0	105.7	24	110.6	111.4	112.4	20	114.5	115.1	115.2	24	111.1	111.6	112.3	20	110.6	111.1	111.6	24
7/15	105.5	106.0	106.3	23	111.5	112.5	113.5	22	113.9	114.9	115.2	24	112.1	113.0	114.1	22	111.6	112.4	112.7	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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
7/2	111.7	112.2	114.6	24	112.9	113.9	114.5	24	115.1	115.9	116.8	24	115.0	115.7	116.6	24	116.9	117.7	117.9	24
7/3	111.5	112.3	112.8	24	111.2	111.5	112.2	24	112.9	113.4	113.8	24	112.9	113.1	113.2	24	115.1	115.8	116.2	24
7/4	111.8	112.5	113.2	24	111.1	111.8	112.7	24	112.5	113.2	114.0	24	112.2	112.4	112.8	24	114.2	115.1	115.5	24
7/5	110.4	110.6	111.2	24	109.9	110.5	111.3	24	111.4	112.2	113.0	24	110.4	110.7	111.4	24	113.3	114.0	114.3	24
7/6	111.1	111.6	112.1	24	110.2	110.8	111.1	22	111.4	112.1	112.3	22	110.5	111.0	111.5	24	113.0	113.9	114.4	24
7/7	110.9	112.0	112.7	24	111.3	112.2	112.4	24	112.2	113.3	113.7	24	110.7	111.4	111.8	24	113.0	114.3	114.8	24
7/8	112.3	112.7	113.0	24	112.0	112.9	113.3	24	113.1	114.1	114.5	24	111.5	111.9	112.3	24	113.9	114.9	115.2	24
7/9	112.5	113.2	113.6	24	113.3	113.9	114.4	24	115.3	116.1	117.4	24	112.5	112.9	113.2	24	115.5	116.0	116.3	24
7/10	113.7	114.5	115.9	24	113.6	114.2	114.8	24	114.5	115.4	116.1	24	113.4	114.3	114.7	24	114.4	115.5	116.2	24
7/11	113.9	114.5	116.1	24	113.2	113.9	114.6	23	114.2	115.0	115.5	23	114.0	114.1	114.2	24	114.5	115.4	115.9	24
7/12	113.4	114.3	114.7	24	112.2	112.8	113.2	24	113.7	114.0	114.6	24	112.9	113.8	114.2	24	113.9	114.5	115.0	24
7/13	111.1	111.6	112.0	24	109.8	110.3	110.6	24	111.7	112.3	113.6	24	110.0	110.4	111.1	24	112.0	112.5	113.0	24
7/14	110.3	110.8	111.1	24	110.4	111.1	111.7	24	113.6	116.3	117.7	24	110.3	111.0	111.2	24	112.4	113.4	114.0	24
7/15	112.0	112.4	112.6	24	110.9	111.5	112.1	23	113.2	114.0	115.7	23	111.1	111.7	113.1	24	113.3	114.2	115.6	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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
7/2	113.3	114.6	115.3	24	117.3	118.7	119.7	24	114.8	115.8	116.2	24	117.2	118.4	119.8	24	116.7	119.1	123.1	24
7/3	112.2	112.8	113.3	24	116.3	117.3	117.7	24	112.6	113.2	114.7	24	113.5	114.3	118.2	24	115.2	115.9	116.5	24
7/4	110.8	111.0	112.0	24	116.4	116.9	117.1	24	111.7	111.9	112.3	24	112.6	112.9	113.5	24	111.8	112.7	113.1	24
7/5	110.2	110.5	110.8	24	114.8	115.2	116.9	24	112.5	114.4	116.0	24	112.3	112.6	113.0	24	110.9	112.4	114.3	24
7/6	109.6	110.5	111.2	24	113.9	115.0	115.7	24	113.4	114.8	115.5	24	113.1	113.4	114.0	24	112.5	114.0	115.5	24
7/7	110.6	111.2	111.8	24	113.3	115.0	115.5	24	114.8	116.3	118.1	24	113.6	113.9	114.6	24	114.2	115.0	116.5	24
7/8	110.9	111.6	112.4	24	113.7	115.0	115.7	24	115.4	117.0	117.8	24	113.8	114.2	114.7	24	114.6	115.4	117.0	24
7/9	112.1	113.2	114.0	24	115.8	117.4	117.7	24	115.6	116.9	119.7	24	114.8	115.6	117.5	24	114.8	115.6	116.9	24
7/10	111.9	112.5	113.2	24	115.7	116.4	117.1	24	112.9	113.3	114.1	24	113.8	113.9	114.6	24	113.9	114.3	114.5	24
7/11	112.5	113.0	113.3	24	116.2	116.7	117.2	24	113.2	114.3	115.2	24	113.9	114.3	114.8	24	112.6	113.6	115.1	24
7/12	110.8	111.2	112.5	24	115.1	115.5	116.4	24	110.2	111.6	112.7	24	111.8	112.9	115.0	24	110.9	112.1	112.8	24
7/13	109.3	109.5	109.9	24	114.1	114.8	115.0	24	108.6	110.1	111.0	24	110.7	111.3	112.1	24	107.8	109.0	110.3	24
7/14	109.3	110.7	111.6	24	113.6	115.0	116.1	24	---	---	---	0	---	---	---	0	---	---	---	0
7/15	110.9	111.7	112.6	24	115.1	116.1	116.3	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

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clwrtr-Peck</u>			<u>Anatone</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	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/2	119.0	119.7	120.4	24	114.4	115.0	115.3	24	104.4	105.0	105.3	24	101.8	102.5	103.0	24	103.3	103.8	104.4	24
7/3	116.0	117.0	118.2	24	112.8	113.5	113.9	24	99.2	99.9	104.0	24	100.7	101.6	102.2	23	103.2	104.0	104.8	24
7/4	113.0	113.7	114.4	24	111.4	112.2	112.6	24	98.6	99.0	99.3	24	100.6	101.5	102.1	24	103.3	104.2	104.6	24
7/5	111.7	112.4	113.0	24	109.1	109.9	110.2	24	98.3	98.6	99.0	24	100.6	101.4	102.1	21	102.8	103.3	103.9	24
7/6	113.3	114.0	114.6	24	109.6	111.0	111.9	24	99.9	101.5	104.8	24	100.8	101.3	102.0	23	103.0	104.0	104.7	24
7/7	114.6	114.8	115.3	24	111.3	112.5	113.3	24	100.0	101.4	103.7	24	101.1	101.6	102.2	23	103.2	104.1	104.8	24
7/8	114.5	114.9	115.3	24	112.2	112.9	113.5	24	100.1	101.5	103.6	24	101.2	101.8	102.5	24	103.1	103.9	104.6	24
7/9	116.3	117.2	118.1	24	112.6	113.4	114.1	24	99.9	101.5	103.9	24	101.2	101.8	102.5	24	103.1	103.9	104.6	24
7/10	115.2	115.8	117.3	24	113.1	114.1	114.9	24	98.2	98.5	98.8	24	100.7	101.7	102.6	23	102.8	103.6	104.3	24
7/11	113.5	114.3	114.7	24	112.2	112.9	113.7	24	98.4	98.7	99.0	24	101.0	102.1	102.8	23	102.7	103.7	104.5	24
7/12	112.5	113.3	114.5	24	109.4	109.9	111.2	24	98.5	98.8	99.2	21	101.1	102.0	102.8	22	102.3	103.0	103.6	24
7/13	109.5	110.1	110.6	24	107.1	108.2	109.0	24	97.5	97.7	98.0	24	99.7	100.3	100.9	22	101.4	102.2	102.8	24
7/14	---	---	---	0	107.6	108.9	109.8	24	97.6	97.9	98.1	24	99.9	101.0	101.9	23	102.0	103.2	104.0	24
7/15	---	---	---	0	109.7	111.2	112.0	24	100.5	100.9	101.1	24	101.6	102.8	103.7	23	102.8	103.8	104.6	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clwrtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</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	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/2	101.6	102.6	103.6	23	102.7	102.9	103.0	24	112.0	112.5	113.3	24	109.5	109.8	110.3	24	111.5	111.6	111.7	24
7/3	101.6	102.8	103.6	23	102.0	102.2	102.9	24	112.2	112.6	113.2	24	109.0	109.4	110.2	24	110.9	111.1	111.2	24
7/4	101.8	103.4	104.6	24	101.7	101.8	101.9	24	111.8	112.3	113.2	24	109.3	109.6	109.8	24	111.5	111.8	112.0	24
7/5	101.6	102.7	103.7	22	101.1	101.3	101.6	24	111.7	111.9	112.3	24	107.7	108.0	108.5	24	110.8	111.0	111.2	24
7/6	102.2	104.2	105.8	23	101.1	101.3	101.4	24	112.1	112.7	114.9	24	107.5	108.1	108.9	24	111.3	111.9	112.1	24
7/7	102.5	104.6	106.1	24	101.9	102.1	102.5	24	111.8	112.1	112.6	24	109.1	110.4	112.0	24	111.6	112.1	112.4	24
7/8	102.6	104.7	106.2	24	102.2	102.6	103.1	24	112.2	112.7	113.5	24	110.1	110.3	110.8	24	111.9	112.4	112.6	24
7/9	102.8	105.0	106.5	24	103.2	103.7	104.1	24	113.2	113.8	114.5	24	111.1	112.1	112.4	24	112.6	113.0	113.1	24
7/10	102.6	104.4	105.8	23	103.6	103.8	104.1	24	113.5	114.0	114.5	24	111.9	112.3	112.8	24	112.8	113.0	113.1	24
7/11	102.9	104.9	106.3	23	103.5	103.7	104.1	24	113.5	113.8	114.2	24	112.9	113.4	113.7	24	113.2	113.5	113.8	24
7/12	102.5	104.1	105.4	22	103.1	103.7	104.4	24	114.1	114.4	114.5	24	113.0	113.3	113.5	24	112.8	112.9	113.1	24
7/13	101.0	103.0	103.9	24	101.5	101.7	102.1	24	113.9	114.5	114.8	24	110.4	110.8	111.7	24	112.5	112.9	113.2	24
7/14	101.8	104.3	105.8	24	100.7	101.0	101.4	24	115.0	115.6	115.9	24	108.5	108.7	109.1	24	112.6	113.0	113.3	24
7/15	102.8	105.3	106.7	23	101.0	101.4	102.4	24	113.5	114.1	115.0	24	108.2	108.4	108.7	24	111.6	112.0	112.5	24

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</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	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
7/2	112.4	112.6	113.0	24	116.2	116.3	116.5	24	112.9	112.9	113.1	24	115.7	115.9	116.2	24	---	---	---	0
7/3	110.1	110.3	111.1	24	117.5	119.5	131.6	24	111.5	111.8	112.6	24	114.8	115.4	116.5	24	---	---	---	0
7/4	109.4	109.5	109.7	24	115.4	115.6	115.8	24	110.9	111.1	111.2	24	112.9	114.1	114.6	24	---	---	---	0
7/5	108.9	109.0	109.2	24	115.1	115.3	115.6	24	110.4	110.6	110.8	24	114.7	115.3	116.0	24	---	---	---	0
7/6	109.0	109.3	109.6	24	116.2	117.2	120.7	24	110.6	110.8	111.0	24	114.3	114.9	115.7	24	---	---	---	0
7/7	109.8	110.2	110.3	24	128.4	138.9	139.8	24	111.1	111.4	111.6	24	113.1	114.5	116.1	24	---	---	---	0
7/8	110.6	111.2	112.0	24	126.9	137.5	140.5	24	112.3	112.9	113.3	24	112.8	114.2	115.8	24	---	---	---	0
7/9	111.7	112.0	112.4	24	116.2	116.7	117.3	24	113.5	113.9	114.1	24	112.7	113.8	115.7	24	---	---	---	0
7/10	111.7	111.8	111.9	24	116.1	116.3	116.6	24	113.8	113.9	114.1	24	113.9	115.4	115.7	24	---	---	---	0
7/11	112.0	112.7	113.0	24	116.5	116.8	117.3	24	114.6	114.8	115.3	24	113.8	114.8	115.5	24	---	---	---	0
7/12	112.5	112.7	112.8	24	116.4	116.6	117.1	24	114.2	114.6	115.1	24	113.4	114.0	114.4	24	---	---	---	0
7/13	110.1	110.5	111.7	24	115.6	116.3	116.8	24	111.0	111.5	112.9	24	113.5	114.2	114.6	24	---	---	---	0
7/14	108.8	109.0	109.3	23	116.1	116.4	116.8	24	109.9	110.1	110.2	24	123.2	133.4	145.3	24	---	---	---	0
7/15	108.5	109.0	110.6	24	115.6	116.2	116.5	24	109.9	110.5	111.2	24	114.2	115.2	116.1	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	
7/2	113.0	113.3	114.2	24	118.2	118.6	118.8	24	109.6	110.2	111.0	24	116.3	117.5	117.9	24	110.7	111.1	111.8	24
7/3	112.1	112.4	112.7	24	118.0	118.5	118.9	24	107.7	108.0	108.2	24	114.1	115.0	116.2	24	108.7	109.0	109.5	24
7/4	111.9	112.1	112.6	24	117.1	117.3	118.0	24	107.6	107.8	107.9	24	113.7	113.9	114.2	24	107.7	108.0	108.4	24
7/5	110.5	110.8	111.2	24	116.7	116.9	117.2	24	106.5	106.7	107.1	24	114.6	115.5	116.5	24	106.4	106.9	107.6	24
7/6	110.2	110.6	111.7	24	117.1	117.6	118.4	24	106.1	106.6	107.7	24	113.7	115.6	117.5	24	109.6	110.7	111.1	24
7/7	110.7	111.3	112.3	24	123.5	130.1	148.8	24	107.4	108.2	108.9	24	114.4	115.5	116.6	24	111.9	112.2	112.6	24
7/8	111.6	112.7	113.6	24	133.7	145.1	145.9	24	108.9	109.4	110.4	24	114.9	116.2	116.8	24	112.3	112.5	112.7	24
7/9	112.5	113.1	114.1	24	117.6	117.8	118.0	24	110.2	110.9	111.5	24	113.8	114.4	115.1	24	112.7	112.8	113.2	24
7/10	113.3	113.5	113.8	24	117.6	117.9	118.1	24	110.9	111.5	112.1	24	114.6	115.0	115.3	24	110.6	111.2	112.1	24
7/11	113.2	113.5	114.0	24	117.6	117.9	118.1	24	112.0	112.9	113.4	24	114.6	115.1	116.0	24	110.2	110.7	111.2	24
7/12	110.9	111.9	112.3	24	117.8	118.8	125.8	24	110.7	111.5	111.9	24	114.1	114.5	117.3	24	108.1	109.4	110.4	24
7/13	107.3	107.6	108.3	24	116.7	117.0	117.4	24	107.0	107.4	108.5	24	114.3	115.4	116.2	24	106.1	106.9	107.4	24
7/14	105.9	106.4	107.6	24	116.3	116.9	117.3	24	105.5	105.8	106.2	24	113.5	114.4	115.5	24	109.1	109.9	110.3	24
7/15	107.4	108.1	108.7	24	116.2	116.7	117.3	24	106.0	106.2	106.4	24	113.9	114.3	114.7	24	111.0	111.4	111.8	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	
7/2	116.6	117.0	117.7	24	112.1	112.6	113.2	24	113.8	114.3	115.0	24	112.5	112.9	113.7	24	116.6	117.3	119.1	24
7/3	115.2	115.6	115.9	24	110.1	110.3	110.5	24	113.7	114.1	114.8	24	111.9	113.0	114.2	24	117.7	118.1	119.1	24
7/4	114.4	114.8	115.7	24	109.0	109.7	110.3	24	113.9	114.5	114.9	24	111.0	111.4	111.7	24	116.6	117.0	117.5	24
7/5	113.5	113.9	114.3	24	107.3	107.7	108.2	24	112.4	113.3	114.5	24	110.5	110.9	111.4	24	115.1	115.9	118.5	24
7/6	115.7	116.9	117.5	24	108.5	109.5	110.3	24	114.3	114.7	115.8	24	111.3	113.3	114.5	24	115.7	116.8	118.8	24
7/7	117.0	117.6	118.3	24	111.8	112.7	113.7	24	115.7	116.1	116.5	24	111.7	112.7	113.3	24	117.1	117.6	118.9	24
7/8	117.0	117.7	118.5	24	114.7	115.1	115.5	24	116.6	117.1	117.8	24	113.6	115.5	116.6	24	117.0	117.4	117.7	24
7/9	117.5	118.3	118.7	24	115.8	116.1	116.4	24	116.4	116.8	117.0	24	115.6	116.8	117.8	24	116.2	116.9	118.6	24
7/10	116.3	116.6	117.3	24	112.8	113.6	114.4	24	116.4	116.9	117.5	24	114.6	115.7	116.8	24	116.8	117.2	118.6	24
7/11	116.0	116.4	116.6	24	110.6	111.0	111.5	24	114.2	114.9	115.2	24	113.2	114.1	115.2	24	115.5	116.1	117.5	24
7/12	113.8	114.4	116.4	24	107.4	108.0	109.1	24	113.5	114.2	115.5	24	110.4	111.7	112.8	24	116.5	116.8	118.0	24
7/13	113.1	113.7	114.1	24	105.6	106.0	106.3	24	110.7	111.5	112.5	24	111.8	113.2	114.4	24	115.1	115.8	118.2	24
7/14	114.7	115.8	116.3	24	107.6	108.8	109.5	24	114.7	116.3	116.9	24	112.1	114.8	116.7	24	116.9	117.4	118.6	24
7/15	115.9	116.5	116.6	24	111.0	111.9	112.4	24	114.1	114.6	114.7	24	114.6	115.7	116.5	24	115.3	115.9	118.0	24

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/02/2010	---	---	---	---	27	14	741	6	204	0	0
07/03/2010	*	---	---	---	0	14	1,658	0	---	0	0
07/04/2010	---	---	---	---	0	29	509	0	207	0	0
07/05/2010	*	---	---	---	0	14	512	0	---	0	715
07/06/2010	---	---	---	---	0	27	184	0	205	112	0
07/07/2010	*	---	---	---	0	23	244	0	---	112	0
07/08/2010	*	---	---	---	15	0	247	---	0	0	0
07/09/2010	*	---	---	---	0	0	349	0	---	112	0
07/10/2010	---	---	---	---	0	0	61	0	0	0	0
07/11/2010	*	---	---	---	0	14	62	0	---	0	220
07/12/2010	*	---	---	---	0	0	0	0	206	0	304
07/13/2010	*	---	---	---	0	0	34	0	---	0	0
07/14/2010	*	---	---	---	0	0	0	0	0	0	0
07/15/2010	*	---	---	---	0	0	6	1	---	0	547
07/16/2010	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	42	135	4,607	7	822	336	1,786
# Days:	0	0	0	0	14	14	14	13	7	14	14
Average:	0	0	0	0	3	10	329	1	117	24	128
YTD	56,130	80,004	27,916	7,995	2,452,510	1,260,442	450,543	11,798	2,093,482	1,034,554	2,301,933

COMBINED SUBYEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/02/2010	---	---	---	---	8,315	9,291	15,183	233	193,067	43,493	95,835
07/03/2010	*	---	---	---	7,222	12,233	11,467	176	---	61,688	94,676
07/04/2010	---	---	---	---	4,849	5,790	4,723	179	268,485	68,446	111,114
07/05/2010	*	---	---	---	3,956	3,739	11,598	267	---	41,715	94,795
07/06/2010	---	---	---	---	4,202	4,385	4,955	506	121,878	41,734	94,396
07/07/2010	*	---	---	---	5,112	18,238	14,260	54	---	49,924	76,028
07/08/2010	*	---	---	---	5,718	11,054	8,339	---	184,953	50,362	68,907
07/09/2010	*	---	---	---	5,534	5,193	6,132	335	---	65,389	78,546
07/10/2010	---	---	---	---	4,351	6,248	2,179	229	373,056	65,456	94,127
07/11/2010	*	---	---	---	3,651	3,933	926	215	---	63,240	117,740
07/12/2010	*	---	---	---	4,068	4,494	1,496	427	101,917	65,975	220,061
07/13/2010	*	---	---	---	4,663	4,421	765	328	---	46,309	67,344
07/14/2010	*	---	---	---	5,385	4,652	1,411	287	34,851	36,194	62,859
07/15/2010	*	---	---	---	6,504	4,778	894	193	---	27,720	54,677
07/16/2010	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	73,530	98,449	84,328	3,429	1,278,207	727,645	1,331,105
# Days:	0	0	0	0	14	14	14	13	7	14	14
Average:	0	0	0	0	5,252	7,032	6,023	264	182,601	51,975	95,079
YTD	0	42	28	1,275	953,368	1,229,477	697,199	11,754	3,003,433	1,914,465	4,499,212

Two-Week Summary of Passage Indices

COMBINED COHO											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/02/2010	---	---	---	---	53	29	0	29	6	0	0
07/03/2010 *	---	---	---	---	28	29	0	7	---	0	302
07/04/2010	---	---	---	---	58	29	73	11	0	0	0
07/05/2010 *	---	---	---	---	0	0	0	5	---	0	0
07/06/2010	---	---	---	---	0	23	0	21	0	0	0
07/07/2010 *	---	---	---	---	0	11	0	0	---	0	0
07/08/2010 *	---	---	---	---	0	14	0	---	206	0	0
07/09/2010 *	---	---	---	---	0	0	0	21	---	0	0
07/10/2010	---	---	---	---	0	29	0	13	0	0	789
07/11/2010 *	---	---	---	---	0	0	0	17	---	0	0
07/12/2010 *	---	---	---	---	0	0	0	12	0	0	304
07/13/2010 *	---	---	---	---	0	0	0	27	---	0	0
07/14/2010 *	---	---	---	---	0	0	0	11	0	0	0
07/15/2010 *	---	---	---	---	0	0	0	6	---	0	0
07/16/2010	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	139	164	73	180	212	0	1,395
# Days:	0	0	0	0	14	14	14	13	7	14	14
Average:	0	0	0	0	10	12	5	14	30	0	100
YTD	0	0	0	104	40,115	53,857	13,581	41,307	85,552	111,146	524,743

COMBINED STEELHEAD											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/02/2010	---	---	---	---	187	186	26	29	208	0	0
07/03/2010 *	---	---	---	---	83	273	0	3	---	0	0
07/04/2010	---	---	---	---	29	129	145	12	0	0	29
07/05/2010 *	---	---	---	---	58	129	0	11	---	144	238
07/06/2010	---	---	---	---	60	139	31	0	205	0	0
07/07/2010 *	---	---	---	---	45	69	29	0	---	0	0
07/08/2010 *	---	---	---	---	60	172	31	---	4	0	241
07/09/2010 *	---	---	---	---	30	29	29	2	---	0	0
07/10/2010	---	---	---	---	47	29	0	1	205	96	263
07/11/2010 *	---	---	---	---	31	57	0	0	---	0	220
07/12/2010 *	---	---	---	---	16	23	0	0	0	96	0
07/13/2010 *	---	---	---	---	17	24	0	1	---	0	0
07/14/2010 *	---	---	---	---	0	14	54	3	0	0	0
07/15/2010 *	---	---	---	---	34	7	6	1	---	0	0
07/16/2010	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	697	1,280	351	63	622	336	991
# Days:	0	0	0	0	14	14	14	13	7	14	14
Average:	0	0	0	0	50	91	25	5	89	24	71
YTD	4,385	27,688	4,051	11,795	2,045,720	1,593,972	427,782	17,297	448,039	594,716	942,227

Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/02/2010	---	---	---	---	0	29	26	0	0	167	0
07/03/2010 *	---	---	---	---	0	0	0	2	---	83	0
07/04/2010	---	---	---	---	0	14	0	0	207	0	0
07/05/2010 *	---	---	---	---	0	14	0	1	---	0	0
07/06/2010	---	---	---	---	0	11	0	0	0	0	0
07/07/2010 *	---	---	---	---	0	0	29	0	---	0	0
07/08/2010 *	---	---	---	---	0	0	0	---	103	0	0
07/09/2010 *	---	---	---	---	0	57	0	0	---	0	0
07/10/2010	---	---	---	---	0	14	0	0	205	0	0
07/11/2010 *	---	---	---	---	0	0	0	0	---	0	0
07/12/2010 *	---	---	---	---	0	0	0	0	411	0	0
07/13/2010 *	---	---	---	---	0	0	0	0	---	0	0
07/14/2010 *	---	---	---	---	0	0	0	0	0	0	0
07/15/2010 *	---	---	---	---	0	14	0	4	---	0	0
07/16/2010	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	0	153	55	7	926	250	0
# Days:	0	0	0	0	14	14	14	13	7	14	14
Average:	0	0	0	0	0	11	4	1	132	18	0
YTD	80	0	0	188	8,688	12,799	2,177	36,483	1,468,623	655,958	803,092

* 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:

7/16/10 10:17 AM

		07/02/10 TO 07/16/10					
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	48,900	30	100	480		49,510
	Sum of NumberBarged	48,788	30	100	479		49,397
	Sum of NumberBypassed	0	0	0	0		0
	Sum of Numbertrucked	0	0	0	0		0
	Sum of SampleMorts	51	0	0	0		51
	Sum of FacilityMorts	61	0	0	1		62
	Sum of ResearchMorts	0	0	0	0		0
	Sum of TotalProjectMorts	112	0	0	1		113
LGS	Sum of NumberCollected	68,655	95	114	893	108	69,865
	Sum of NumberBarged	68,524	94	114	890	108	69,730
	Sum of NumberBypassed	6	0	0	0	0	6
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	22	0	0	1	0	23
	Sum of FacilityMorts	103	1	0	2	0	106
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	125	1	0	3	0	129
LMN	Sum of NumberCollected	58,651	3,262	50	235	40	62,238
	Sum of NumberBarged	58,425	3,254	50	231	40	62,000
	Sum of NumberBypassed	123	8	0	1	0	132
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	14	0	0	0	0	14
	Sum of FacilityMorts	89	0	0	3	0	92
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	103	0	0	3	0	106
MCN	Sum of NumberCollected	622,053	400	103	304	450	623,310
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	621,614	400	100	300	450	622,864
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	36	0	0	0	0	36
	Sum of FacilityMorts	403	0	3	4	0	410
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	439	0	3	4	0	446
Total Sum of NumberCollected		798,259	3,787	367	1,912	598	804,923
Total Sum of NumberBarged		175,737	3,378	264	1,600	148	181,127
Total Sum of NumberBypassed		621,743	408	100	301	450	623,002
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		123	0	0	1	0	124
Total Sum of FacilityMorts		656	1	3	10	0	670
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		779	1	3	11	0	794

YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/16/10 10:17 AM

TO: 07/16/10

Site	Data	Species					Grand Total
		CH0	CH1	CO	SO	ST	
LGR	Sum of NumberCollected	573,983	1,622,312	28,325	5,750	1,358,113	3,588,483
	Sum of NumberBarged	572,271	1,428,753	28,315	5,735	1,309,452	3,344,526
	Sum of NumberBypassed	700	191,860	0	10	48,344	240,914
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	112	54	0	0	19	185
	Sum of FacilityMorts	900	1,230	10	5	281	2,426
	Sum of ResearchMorts	0	415	0	0	17	432
	Sum of TotalProjectMorts	1,012	1,699	10	5	317	3,043
LGS	Sum of NumberCollected	805,819	873,143	36,872	8,859	1,085,466	2,810,159
	Sum of NumberBarged	800,309	791,467	36,871	8,858	1,025,761	2,663,266
	Sum of NumberBypassed	66	81,373	0	0	59,473	140,912
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	65	29	1	0	10	105
	Sum of FacilityMorts	5,379	274	0	1	222	5,876
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	5,444	303	1	1	232	5,981
LMN	Sum of NumberCollected	474,298	304,977	8,775	1,510	239,870	1,029,430
	Sum of NumberBarged	473,515	303,494	8,775	1,409	234,648	1,021,841
	Sum of NumberBypassed	320	1,472	0	0	5,000	6,792
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	25	9	0	0	10	44
	Sum of FacilityMorts	457	200	0	1	313	971
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	482	209	0	1	323	1,015
MCN	Sum of NumberCollected	1,493,173	1,223,919	47,335	848,650	259,940	3,873,017
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,490,488	1,222,563	47,275	847,904	259,728	3,867,958
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	159	121	5	96	16	397
	Sum of FacilityMorts	2,526	1,235	55	650	196	4,662
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2,685	1,356	60	746	212	5,059
Total Sum of NumberCollected		3,347,273	4,024,351	121,307	864,769	2,943,389	11,301,089
Total Sum of NumberBarged		1,846,095	2,523,714	73,961	16,002	2,569,861	7,029,633
Total Sum of NumberBypassed		1,491,574	1,497,268	47,275	847,914	372,545	4,256,576
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		361	213	6	96	55	731
Total Sum of FacilityMorts		9,262	2,939	65	657	1,012	13,935
Total Sum of ResearchMorts		0	415	0	0	17	432
Total Sum of TotalProjectMorts		9,623	3,567	71	753	1,084	15,098

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											
	07/05/10	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
	07/12/10	Chinook + Steelhead	41	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	07/07/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/07/10	Chinook + Steelhead	31	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/09/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/11/10	Chinook + Steelhead	75	0	0	0.00%	0.00%	0	0	0	0
	07/15/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/06/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/10/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/13/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/06/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/10/10	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	07/15/10	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0

Cumulative Adult Passage at Mainstem Dams Through: 07/15

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2010		2009		10-Yr Avg.		2010		2009		10-Yr Avg.		2010		2009		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	07/15	244362	12613	114525	66631	167834	17301	90192	14245	75120	34497	72919	11484	0	0	0	0	0	0
TDA	07/15	189839	11546	93908	53646	121486	13792	73553	11192	73031	25365	63054	8615	0	0	0	0	0	0
JDA	07/14	179446	11794	76806	49733	101283	12037	63731	10611	58876	28929	55990	8790	0	0	0	0	0	0
MCN	07/14	153246	9178	70413	43328	93119	11340	57859	6526	50216	18729	51176	7082	0	0	0	0	0	0
IHR	07/15	101188	6047	55435	28223	64058	7222	27741	3134	21734	8996	14315	3153	0	0	0	0	0	0
LMN	07/14	97334	5899	66931	20009	63381	6004	33112	4027	21512	10393	14373	2604	0	0	0	0	0	0
LGS	07/14	92991	5461	52642	24331	58937	6617	30288	3582	18283	10095	11572	3091	0	0	0	0	0	0
LGR	07/15	94100	6390	49667	31064	59309	8137	27149	4639	13427	14549	11085	3682	0	0	0	0	0	0
PRD	07/13	30539	932	13469	2910	19097	834	33152	439	38972	1644	37047	1286	0	0	0	0	0	0
RIS	07/13	29684	1513	12634	6003	15841	1581	27886	1602	30850	4364	30902	2748	0	0	0	0	0	0
RRH	07/13	8660	523	6090	1086	6208	510	16193	509	20124	2696	18767	1471	0	0	0	0	0	0
WEL	07/09	7555	661	6307	1867	4866	487	6527	138	10323	732	7671	297	0	0	0	0	0	0
WFA	06/30	58599	1299	23424	2203	-	-	-	-	-	-	-	-	0	0	0	0	-	-

DAM	Coho						Sockeye			Steelhead					
	2010		2009		10-Yr Avg.		2010		2009	10-Yr Avg.	2010		2009	10-Yr Avg.	Wild 2010
	Adult	Jack	Adult	Jack	Adult	Jack	2010	2009	Avg.	2010	2009	Avg.			
BON	0	0	0	0	0	0	382343	175798	92988	101092	38407	45630	50180		
TDA	0	0	0	0	0	0	320569	153383	79037	54383	19449	22405	28773		
JDA	0	0	0	0	0	0	317068	152424	83670	34922	20515	18145	17494		
MCN	0	0	0	0	0	0	268959	118028	66797	19231	10373	10870	8162		
IHR	0	0	0	0	0	0	1096	822	169	12812	7892	6810	4529		
LMN	3	1	0	0	0	0	1305	1039	201	12213	9477	6339	4880		
LGS	0	0	0	0	0	0	1158	945	177	7421	7702	4542	3101		
LGR	0	0	0	0	0	0	1509	1014	207	14560	12875	10091	5635		
PRD	0	2	0	0	0	0	314391	137287	78707	1623	500	796	0		
RIS	0	0	0	0	0	0	277392	134089	69215	940	335	566	555		
RRH	0	0	0	0	1	0	230471	100913	49060	812	599	526	473		
WEL	0	0	0	0	0	0	125808	54761	29132	214	134	117	146		
WFA	0	0	0	0	-	-	-	-	-	25918	14283	-	0		

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

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BON counts from January 1, 2009 to March 14, 2010 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2010	39	0	2,318	657
2009	19	-1	321	109