



# Fish Passage Center

## Weekly Report #10 - 13

June 11, 2010

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 214% and 657% of average at individual sub-basins over June. Precipitation above The Dalles has been 337% of average over June. Over the 2010 water year, precipitation has ranged between 87% and 105% of 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 2010 June 1-9		Water Year 2010 October 1, 2009 to June 9, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.68	235	16.45	87
Snake River Above Ice Harbor	1.77	404	13.95	99
Columbia Above The Dalles	1.81	337	17.53	95
Kootenai	1.81	246	16.90	88
Clark Fork	1.40	242	11.20	87
Flathead	1.70	214	16.75	99
Pend Oreille/Spokane	2.29	349	23.5	91
Central Washington	1.00	519	7.89	105
Snake River Plain	0.95	329	8.65	97
Salmon/Boise/Payette	2.18	495	16.75	101
Clearwater	3.18	426	23.81	95
SW Washington Cascades/Cowlitz	3.21	362	58.68	92
Willamette Valley	4.44	657	52.48	97

Table 2 displays the May Final and June Final runoff volume forecasts for multiple reservoirs. The June Final Runoff Volume Forecasts remained similar to the May Final Forecasts at Upper Columbia locations; however increased between 8-14% relative to the May Final forecasts at Snake River locations. The current forecast at The Dalles between January and July is 74000 Kaf (69% of average).

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

Location	May Final		June Final	
	% Average (1971 -2000)	Probable Runoff Volume (Kaf)	% Average (1971 -2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	66	70900	69	74000
Grand Coulee (Jan-July)	74	46400	74	46400
Libby Res. Inflow, MT (Apr-Aug)	69 77*	4310 4887*	71	4420
Hungry Horse Res. Inflow, MT (Jan-July)	74	1640	75	1660
Lower Granite Res. Inflow (Apr- July)	58	12400	68	14600
Brownlee Res. Inflow (Apr-July)	44	2780	58	3670
Dworshak Res. Inflow (Apr-July)	55 57*	1460 1526*	63	1670

\* Denotes COE Forecast

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast, the flow objective this spring is 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 70.7 Kcfs from April 3 to June 10 and 190.1 Kcfs last week.

The Biological Opinion flow period began on April 10th in the mid and lower Columbia River (Priest Rapids and McNary Dams). According to the April Final Water Supply Forecast, the flow objective this spring is 220 Kcfs at McNary and 135 Kcfs at Priest Rapids. Flows from April 10 to June 10 have averaged 192.8 Kcfs at McNary Dam and 112.1 Kcfs at Priest Rapids Dam. Over the last week, flows have averaged 337.6 Kcfs at McNary Dam and 142.2 Kcfs at Priest Rapids Dam.

Grand Coulee Reservoir is at 1285.2 feet (6-10-10) and refilled 9.4 feet over the last week. Outflows at Grand Coulee have ranged between 53.7 and 173.6 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2423.3 feet (6-10-10) and has refilled 2.1 feet last week. The sturgeon pulse has begun at Libby Dam with full powerhouse outflows (27 Kcfs) beginning on June 9<sup>th</sup>, 2010. Outflows at Libby are currently 34.0 Kcfs, which includes 7.0 Kcfs of spill as part of the spill test. Inflows to Libby have ranged between 26.2 Kcfs to 31.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3550.7 feet (6-10-10) and has refilled 5.6 feet last week. Outflows at Hungry Horse have been approximately 4.0 Kcfs last week. Inflows to Hungry Horse Dam have ranged between 13.2 Kcfs to 16.6 Kcfs over the last week.

Dworshak is currently at an elevation of 1596.4 feet (6-10-10) and has refilled approximately 8.8 feet last week. Outflows from Dworshak have been 7.4 Kcfs. Inflows to Dworshak have ranged between 15.4 to 21.2 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2076.2 feet on June 10, 2010 refilling 1.0 foot last week. Over the last week, outflows at Brownlee have ranged between 28.7-50.2 Kcfs. Inflows to Brownlee have ranged between 38.3 Kcfs and 50.2 Kcfs over the last week.

**Spill:**

The 2010 planned spring spill program at the lower Snake River Projects began on April 3 at 0001 hours. The following table shows the planned

operations for spring 2010.

<b>Project</b>	<b>Day/Night Spill</b>
Lower Granite	20Kcfs/20Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3-April 28: 45 Kcfs/Gas Cap April 29-June 20: 30%/30% vs. 45 Kcfs/Gas Cap

Recent rain and snow melt significantly increased flows in the Snake River over the past week. Spill occurred as both planned spill and unplanned (in excess of hydraulic or generation capacity) spill. At Lower Granite Dam the project is operating with limited hydraulic capacity due to Unit 3 being out of service. Consequently, spill at Lower Granite Dam was well in excess of the 20 Kcfs instantaneous level over the past week. Daily average spill ranged from 69.4 Kcfs to 115.6 Kcfs. Spill at Little Goose Dam exceeded the 30% of instantaneous flow over the past week, ranging from 26 to 45% of daily average flow; 39.2 to 88.9 Kcfs. Spill at Lower Monumental Dam has occurred as all flow in excess of hydraulic capacity, and has ranged from a daily average of 41 to 97 Kcfs. 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. However, it was difficult at the recent high flows to implement the simulated test conditions, and spill at Ice Harbor Dam occurred as excess hydraulic capacity spill. Spill ranged from a daily average of 83 Kcfs to 136 Kcfs.

The 2010 spill program at the lower Columbia River projects began at 0001 hours on April 10<sup>th</sup>. The following table shows the planned operations for spring 2010.

<b>Project</b>	<b>Day/Night Spill</b>
McNary	40%/40%
John Day	<b>Pre-test:</b> 30%/30% <b>Testing:</b> 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

The planned spill levels of 40% of instantaneous

flows were exceeded at McNary Dam due to the higher flow levels. Spill ranged from 46 to 58% of average daily flow. At John Day Dam the testing of 30% spill versus 40% spill occurred in two-day blocks. The objectives of the study were slightly exceeded on the planned 30% spill days, but not met on the 40% days when the gas cap implemented by the COE prevented the project from meeting the 40% spill level. The planned spill levels were not met at The Dalles over the past week where again, the gas cap implemented by the COE did not allow for the project to meet the objective. At Bonneville Dam spill met, or exceeded, the 100 Kcfs spill level, except for June 4th, when the spill was reduced to address the TDG levels at the Camas/Washougal TDG gage, which is not a required point of compliance.

The high flows and uncontrolled spill levels in the Snake River has resulted in total dissolved gas levels exceeding the State's water quality waiver levels throughout the lower Snake hydrosystem. TDG levels below Lower Granite Dam have been near 130% and have remained in the high 120's through the river reach. There is less uncontrolled spill occurring in the lower and Mid Columbia rivers, and TDG levels are below, or close to, the waiver standards.

At present, GBT monitoring is being implemented at Lower Granite, Little Goose, Lower Monumental, McNary, Bonneville and Rock Island dams. The high levels of TDG in the Snake River are reflected by the increase in fish observed with signs of GBT. Approximately, 6% of fish sampled at Little Goose Dam and 4% of fish sampled at Lower Monumental Dam were reported with signs of fin GBT this past week. At Bonneville Dam, 1% of sampled fish showed signs of GBT. These levels of incidence are well below the action criteria of 15%.

#### **Smolt Monitoring:**

Smolt collections at Snake River dams increased over the past week as the late Spring migrants appeared to be pushed out by the rising flows in the Snake River. Subyearling Chinook passage indices increased at all sites this past week as peak passage for summer migrants approaches. With the high flows and concomitant debris buildup at dams descaling and mortality has increased at several COE dams.

At Lower Granite Dam passage indices for all spring migrants increased and reached a late season peak near June 5 coinciding with the high flow event that saw flows rise from 74 Kcfs on May 31 to 207 Kcfs on June 6. Steelhead predominated in the spring migrant

indices while subyearling Chinook predominated overall. Steelhead passage indices peaked on June 5 at 102,000 and the average index rose to 32,000 per day this week compared to a daily average of 11,000 last week. Indices for subyearling Chinook averaged 70,000 per day this week compared to less than 16,000 per day last week. The index for subyearling Chinook reached 115,000 on June 5.

Coinciding with the high flows at Little Goose Dam there was a spike in juvenile lamprey passage this past week with SMP sampling 138 fish on June 7. The COE reported counting over 100,000 juvenile lamprey in the raceway tail-water screens between June 4 and June 9, with the peak number of 47,000 estimated on June 7, which coincided with the peak SMP sample.

Rock Island Dam bypass trap has collected an unusually large number of smolts the past two weeks. The crew had to take the unusual step of diverting water away from the trap 12 hours a day due to high numbers of fish in the trap. The site switched back to 24 hour sampling on June 2. Coho and, for the first time this year, subyearling Chinook predominated in the sample this week. The passage indices for coho and subyearling Chinook both increased over the past week and for coho that increase was likely due to increasing flows pushing out late migrants, while for subyearling Chinook it reflects the seasonal increase in passage.

At McNary Dam sockeye and subyearling Chinook predominated over the past week. Indices for sockeye were down from last week when the index averaged 270,000 per day compared to 32,000 per day this week. For subyearling Chinook the index averaged 29,000 per day this week compared to 5,000 per day last week. Descaling in sockeye and mortality has increased in the sample at McNary Dam since June 2. The percent of sockeye descaled rose from 7% on June 2 up to 21% on June 8. Mortality also rose from less than 1% on June 2 up to nearly 6% on June 10. The COE has been cleaning screens at the project to reduce debris load on the vertical barrier screens. High flows and winds have brought in debris to the project—especially tumble weeds which are a particular problem at the site.

At Bonneville Dam the largest collections over the past week have been sockeye and yearling Chinook followed by subyearling Chinook. Yearling Chinook indices increased slightly this past week with the index average 22,000 this week compared to 19,000 per day last week. For sockeye the passage index averaged 29,000 this week compared to 46,000 last week. Subyearling Chinook indices were up from last

week; the passage index averaged 15,000 per day this week compared to 5,000 per day last week. Bonneville Dam has also seen descaling and mortality increase in the past week as a result of increased debris in the vertical barrier screens. Sockeye mortality rose over 15% on June 6 and has averaged 10% in the sample for the past week. Descaling rates for sockeye peaked at 33% also on June 6. The COE has been cleaning screens in an attempt to reduce the debris load. There efforts have been hampered by winds that do not allow them to remove the screens from the gatewells, so that cleaning has had to occur in place. Sockeye passage is decreasing rapidly and that may alleviate the descaling and mortality problem as sockeye are quite susceptible to descaling and injury in bypass systems.

#### **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 new releases of juvenile salmonids scheduled to begin this week in this zone. However, between June 1<sup>st</sup> and June 15<sup>th</sup>, approximately 500,000 subyearlings were scheduled to be released from the Nez Perce Tribal Hatchery into the Clearwater River. About 40% of these subyearlings are unmarked.

Three releases of subyearling fall Chinook juveniles to the Clearwater River and its tributaries are scheduled to take place next week. In all, these releases total approximately 498,000 juveniles. Of these, 400,000 are production fall Chinook that will be released from the Cedar Flats and Lukes Gulch acclimation facilities in mid-June. All of these production subyearlings are marked with either an adipose fin clip or a coded-wire-tag. The remaining 98,000 subyearlings are fall Chinook surrogates. These Clearwater River surrogate releases are scheduled to begin next week and run through early July. As with the Snake Rive surrogates, the Clearwater River surrogates are 100% unmarked but are tagged with PIT-tags. Finally, about 400,000 spring Chinook parr from the Nez Perce Tribal Hatchery are scheduled for release into the Clearwater River on or around June 21<sup>st</sup>. These spring Chinook parr are 100% unmarked and are not expected to out-migrate until spring of 2011.

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Beginning this week, approximately 10.25 million subyearling fall Chinook juveniles were scheduled for release into the Mid-Columbia River from Ringgold

Springs and Priest Rapids hatcheries, both of which are located below Priest Rapids Dam. These releases are scheduled to run through mid- to late June. The only other release of juvenile salmonids scheduled to begin this week was a release of 800,000 subyearling summer Chinook from Turtle Rock Hatchery into the Mid-Columbia River. Of these subyearling summer Chinook, about 75% are unmarked. This release is also expected to run through mid-June. There are no releases of juvenile salmonids to this zone that are expected to begin 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 to begin this week in this zone. On June 17<sup>th</sup>, approximately 4.5 million subyearling fall Chinook will be released from Little White Salmon NFH into the Little White Salmon River. There are no other releases of juvenile salmonids to this zone that are expected to begin 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 1438 and 2729 adult summer Chinook in the last week. The 2010 summer Chinook count of 23999 is about 1.13 times greater than the 2009 count and 1.49 times greater than the 10 year average. The 2010 Bonneville Dam summer Chinook jack count of 2124 is only about 25.1% of the 2009 and about 96.3% of the 10 year average count.

At Willamette Falls Dam, 44258 adult spring Chinook have been counted so far this year. The 2010 adult spring Chinook count at Willamette Falls Dam is 2.28 times greater than the 2009 count of 19394. At McNary Dam 153246 adult spring Chinook have been counted. The 2010 adult spring Chinook count at McNary Dam is about 2.18 times greater than the 2009 count and about 1.65 times greater than the 10 year average. The 2010 McNary Dam spring Chinook jack count of 9178 is only about 21.2% of the 2009 count and is only about 80.9% of the 10 year average count. The 2010 adult spring Chinook count at Rock Island Dam of 27767 is about 2.74 times greater than the 2009 count and 1.93 times greater than the 10 year average. The 2010 adult spring Chinook count at Lower Granite Dam of 83703 is about 2 times greater than the 2009 count and about 1.5 times greater than the 10 year average. The 2010 Lower Granite spring Chinook jack count of 5639 is only about 20.6% of the 2009 count and about 79.3% of

the 10 year average.

The Bonneville Dam 2010 steelhead count of 9494 is about 1.47 times greater than the 2009 count of 6471. The 2010 steelhead count is about 1.53 times greater than of the 10 year average of 6221. In the Snake River, this year's Lower Granite steelhead count of 10481 is about 97% of the 2009 count. The 2010 LGR steelhead count is about 1.22 times greater than the 10 year average count of 8560. The 2010 LGR wild steelhead count as of June 10th was 4178. At Rock Island Dam, as of June 9th, 117 adult steelhead had been counted and at Rocky Reach Dam 359 adult steelhead had been counted. At Willamette Falls Dam, the 2010 count for steelhead was 19462, as of June 9th. This year's steelhead count is only about 1.85 times greater than the 2009 count of 10527 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 230 and 563 last week. The 2010 adult sockeye count at Bonneville Dam of 3206 is about 74.8% of the 2009 count. However, the 2010 Bonneville adult sockeye is about 1.21 times greater than the 10 year average count.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	5/28/2010		to		06/10/10				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2010	230,000	05-11-10	05-29-10	Couse Creek	Snake River
<b>National Marine Fisheries Service Total</b>					<b>230,000</b>				
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2010	500,000	06-01-10	06-15-10	Nez Perce Tribal Hatchery	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>500,000</b>				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2010	265,050	04-13-10	06-01-10	Deschutes River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>265,050</b>				
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2010	22,430	05-12-10	06-03-10	Parkdale Acclim Pond	Hood River
<b>Warm Springs Tribe Total</b>					<b>22,430</b>				
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2010	6,800,000	06-09-10	06-20-10	Priest Rapids Hatchery Ringold Springs	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2010	3,450,000	06-05-10	06-15-10	Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH0	SU	2010	800,000	06-10-10	06-20-10	Turtle Rock Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>11,050,000</b>				
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	15,846	04-07-10	06-01-10	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	37,806	04-12-10	06-01-10	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	45,060	04-12-10	06-01-10	Prosser Acclim Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	134,850	04-12-10	06-01-10	Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	135,086	04-12-10	06-01-10	Naches River	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	205,926	04-12-10	06-01-10	Easton Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	38,159	04-12-10	06-01-10	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	74,342	04-07-10	06-01-10	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	74,438	04-12-10	06-01-10	Naches River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	137,659	04-12-10	06-01-10	Prosser Acclim Pond	Yakima River
<b>Yakama Tribe Total</b>					<b>899,172</b>				
<b>Grand Total</b>					<b>12,966,652</b>				

### Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	6/11/2010		to		6/24/2010				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2010	98,000	06-15-10	07-03-10	Big Canyon (Clearwater River)	Clearwater River M F
<b>National Marine Fisheries Service Total</b>					<b>98,000</b>				
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2010	200,000	06-12-10	06-12-10	Lukes Gulch Acclim.	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2010	200,000	06-15-10	06-15-10	Cedar Flats Acclim. Nez Perce Tribal	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2010	500,000	06-01-10	06-15-10	Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	SP	2011	400,000	06-21-10	06-25-10	Meadow Creek - CLES	S Fk Clearwater River
<b>Nez Perce Tribe Total</b>					<b>1,300,000</b>				
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2010	2,000,000	06-17-10	06-17-10	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2010	2,500,000	06-17-10	06-17-10	Little White Salmon Hatchery	Little White Salmon River
<b>U.S. Fish and Wildlife Service Total</b>					<b>4,500,000</b>				
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2010	6,800,000	06-09-10	06-20-10	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2010	3,450,000	06-05-10	06-15-10	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH0	SU	2010	800,000	06-10-10	06-20-10	Turtle Rock Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>11,050,000</b>				
<b>Grand Total</b>					<b>16,948,000</b>				

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
05/28/2010	97.5	0.0	101.8	0.0	113.2	8.3	110.5	0.0	122.0	12.8	112.8	19.2	107.6	26.0
05/29/2010	80.2	0.2	82.2	0.0	103.9	8.1	105.5	0.0	117.5	10.9	120.9	20.1	118.3	27.2
05/30/2010	69.4	0.1	74.2	0.0	92.5	7.1	93.5	0.0	104.1	10.9	109.5	20.0	111.4	27.1
05/31/2010	75.7	0.2	76.8	0.0	95.2	7.5	96.4	0.0	108.1	12.8	109.1	19.9	111.7	26.6
06/01/2010	121.5	0.2	106.4	0.6	128.7	8.5	127.8	0.0	138.7	12.2	140.0	20.1	132.6	26.5
06/02/2010	86.6	0.2	99.7	0.5	123.5	8.8	126.4	0.0	141.6	13.6	154.0	26.6	158.4	27.4
06/03/2010	64.3	0.1	74.1	0.0	104.6	7.9	107.2	0.0	121.7	12.6	132.3	19.0	128.5	24.5
06/04/2010	73.7	0.2	74.1	0.0	98.2	7.0	100.5	0.0	114.2	12.6	120.3	18.3	121.1	23.9
06/05/2010	53.7	0.2	51.5	0.0	70.2	6.1	73.7	0.0	88.1	10.7	114.9	18.0	112.0	22.9
06/06/2010	66.8	0.2	77.1	0.0	96.5	7.4	97.1	0.0	107.7	9.8	104.4	16.0	101.2	23.9
06/07/2010	106.6	4.3	97.8	18.4	116.2	7.5	114.5	0.0	126.5	12.6	105.5	19.1	111.2	22.2
06/08/2010	141.6	17.8	134.7	63.4	155.2	9.6	153.4	1.4	164.9	15.5	166.9	41.1	146.9	30.5
06/09/2010	145.4	15.9	150.7	51.5	175.4	15.1	180.8	46.6	192.2	32.0	195.5	64.2	194.0	57.6
06/10/2010	173.6	36.5	158.9	103.0	185.5	18.1	185.4	56.9	194.3	60.9	204.0	75.2	208.4	85.0

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/28/2010	1.2	0.0	21.8	23.0	71.5	20.6	70.0	20.9	70.3	26.1	71.8	45.7
05/29/2010	1.2	0.0	21.5	22.4	73.8	20.8	71.6	21.5	70.3	26.9	71.4	53.2
05/30/2010	1.2	0.0	20.5	22.5	75.9	20.7	75.4	22.6	74.9	25.9	77.1	53.4
05/31/2010	1.3	0.0	20.8	22.0	73.8	20.7	72.7	21.7	73.2	26.9	74.8	53.9
06/01/2010	1.2	0.0	21.0	22.0	78.8	20.7	77.0	23.0	76.5	26.2	77.3	32.8
06/02/2010	1.2	0.0	22.7	21.5	89.7	20.8	86.6	25.9	87.8	27.0	90.2	26.8
06/03/2010	1.2	0.0	25.6	28.4	128.6	41.4	122.5	35.4	123.8	31.3	124.3	55.2
06/04/2010	1.2	0.0	38.3	28.4	160.9	69.4	148.6	39.2	157.2	41.4	162.9	82.9
06/05/2010	1.2	0.0	45.2	32.0	196.5	104.9	187.0	78.9	197.3	81.3	195.3	114.0
06/06/2010	1.2	0.0	49.6	47.9	207.2	115.6	198.6	88.9	212.8	97.0	216.4	135.8
06/07/2010	1.3	0.0	50.2	53.1	200.1	108.9	192.9	83.8	205.0	90.3	204.9	123.7
06/08/2010	7.4	2.0	46.6	54.0	204.0	112.1	195.3	86.5	207.5	92.1	210.4	127.7
06/09/2010	7.4	0.6	45.3	49.6	181.5	90.5	174.9	63.8	183.2	68.4	187.6	105.0
06/10/2010	7.4	0.3	---	---	180.2	89.1	173.6	62.1	179.6	64.7	182.8	99.4

**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
05/28/2010	186.1	74.7	181.1	68.5	168.1	67.1	189.0	99.6	3.3	73.7
05/29/2010	175.1	70.3	166.5	66.6	153.4	61.1	171.9	99.6	5.7	54.2
05/30/2010	217.5	87.5	226.5	72.9	214.2	85.6	218.6	99.6	12.7	93.9
05/31/2010	194.5	78.2	197.2	59.3	185.0	74.7	212.5	99.6	15.0	85.5
06/01/2010	202.8	81.3	207.3	78.9	198.0	79.6	213.3	99.6	7.7	93.6
06/02/2010	233.2	93.7	230.5	92.2	213.8	85.4	227.1	96.4	26.4	91.9
06/03/2010	275.0	116.4	298.2	110.5	281.7	104.5	281.7	97.7	60.9	110.8
06/04/2010	305.4	141.3	310.6	121.8	299.0	114.8	317.8	95.9	83.7	125.8
06/05/2010	320.3	165.9	334.5	124.9	318.9	117.5	331.0	105.6	84.1	128.8
06/06/2010	320.6	156.3	345.2	125.0	334.8	110.9	343.1	124.9	83.5	122.3
06/07/2010	321.6	157.7	352.5	112.4	343.2	107.1	336.2	122.0	82.4	119.3
06/08/2010	341.2	176.4	361.6	116.1	343.0	112.0	363.7	153.1	75.7	122.5
06/09/2010	364.1	200.0	385.2	124.8	368.0	112.8	375.1	169.2	73.4	120.1
06/10/2010	389.8	226.6	389.4	125.0	371.7	117.7	380.0	178.0	73.1	116.4



## 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	Hungry H. Dnst			#	Boundary			#	Grand Coulee			#	Grand C. Tlwr			#	Chief Joseph			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/28	98.1	98.6	99.0	24	109.4	110.0	110.5	23	106.2	106.4	106.8	24	104.5	104.9	105.7	23	103.9	104.2	104.4	24
5/29	97.3	97.6	97.8	23	109.4	109.6	109.9	20	105.7	105.9	106.2	24	103.9	104.3	105.3	20	103.8	104.3	104.5	24
5/30	97.8	97.9	98.1	24	109.8	110.4	110.7	24	106.2	106.5	106.8	24	104.0	104.7	105.2	24	104.1	104.6	104.9	24
5/31	98.4	98.8	99.1	24	109.8	110.1	110.4	24	106.6	106.7	107.2	24	104.9	105.4	105.8	24	104.2	105.4	105.7	24
6/1	99.6	100.8	102.2	24	110.8	111.8	112.3	23	106.3	106.5	106.9	23	105.3	105.7	106.5	23	105.1	105.6	105.9	24
6/2	103.7	105.3	105.8	24	113.3	114.8	115.9	24	107.2	107.5	107.9	24	105.2	105.5	106.0	24	105.8	106.2	106.3	24
6/3	104.5	104.8	105.3	23	115.7	117.0	117.6	21	106.8	107.0	107.3	24	104.2	104.7	105.6	21	105.1	105.6	105.8	24
6/4	104.5	104.8	105.0	24	117.1	117.2	117.4	24	107.2	107.5	107.6	24	105.0	105.6	106.7	24	104.9	105.3	105.6	24
6/5	103.7	104.0	104.2	24	118.9	120.3	120.8	24	105.9	106.1	106.2	24	103.7	104.1	104.5	24	103.4	104.4	104.6	24
6/6	103.6	104.1	104.7	24	120.1	120.7	121.2	22	106.2	106.3	106.5	24	104.1	104.6	104.9	22	103.9	104.7	105.0	24
6/7	104.3	104.6	105.1	24	120.5	121.3	122.6	23	106.2	106.3	106.5	23	104.8	105.5	106.1	23	104.9	105.7	106.0	24
6/8	104.9	105.2	105.6	23	123.4	123.8	124.3	20	106.3	106.5	106.9	24	106.4	107.5	109.2	20	105.9	106.6	106.8	24
6/9	105.3	105.5	105.8	24	123.7	124.0	124.4	24	106.9	107.0	107.4	24	106.7	107.0	107.5	24	106.3	106.6	107.0	24
6/10	104.9	105.4	105.7	24	123.6	123.8	124.1	23	106.4	106.7	107.1	24	107.8	109.4	112.9	23	106.4	107.5	108.0	24

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

Date	Chief J. Dnst			#	Wells			#	Wells Dwnstrm			#	Rocky Reach			#	Rocky R. Tlwr			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/28	104.0	104.5	105.0	24	103.7	103.9	104.2	24	105.5	105.8	106.2	24	105.9	106.0	106.4	24	105.3	105.5	105.7	24
5/29	103.9	104.3	105.2	24	103.7	104.2	104.5	24	105.6	106.2	106.5	24	105.4	105.6	105.8	24	104.7	104.9	105.1	24
5/30	104.3	104.9	105.7	24	104.4	105.1	105.4	24	106.0	106.6	106.8	24	105.8	106.2	106.4	24	105.3	105.7	105.8	24
5/31	105.0	105.9	106.7	24	105.2	105.8	106.0	24	106.8	107.3	107.6	24	106.5	106.9	107.1	24	105.9	106.2	106.4	24
6/1	105.0	105.6	106.2	24	105.4	105.8	106.1	24	107.2	107.6	107.8	24	106.5	106.7	106.8	24	106.0	106.2	106.4	24
6/2	106.4	107.1	109.4	24	105.7	106.1	106.4	24	107.5	107.9	108.2	24	107.3	107.6	107.8	24	106.6	106.9	107.0	24
6/3	105.1	105.7	106.3	24	105.0	105.3	105.7	21	106.4	107.0	107.4	21	106.8	107.0	107.2	24	106.0	106.3	106.5	24
6/4	105.3	106.0	106.9	23	105.3	105.8	106.6	23	106.9	107.3	107.5	23	106.6	106.9	107.1	24	105.8	106.2	106.7	24
6/5	104.6	105.4	106.4	24	104.7	105.4	106.4	24	106.1	106.6	106.9	24	105.8	106.3	107.3	24	104.9	105.2	105.7	24
6/6	104.8	105.5	106.5	24	104.8	105.1	105.4	24	106.1	106.8	106.9	24	106.1	106.3	106.5	24	105.4	105.7	105.9	24
6/7	108.2	112.5	115.5	24	105.1	105.6	106.1	24	106.7	107.2	107.6	24	106.3	106.5	106.9	24	105.6	105.9	106.2	24
6/8	115.6	117.1	118.1	24	106.5	108.1	109.9	24	108.0	109.2	110.6	24	106.4	107.2	107.6	24	105.9	106.7	107.5	24
6/9	115.1	115.3	116.5	24	111.0	111.8	112.3	24	112.8	114.1	116.1	24	108.1	108.5	109.1	24	115.7	118.8	121.0	24
6/10	120.2	123.0	124.8	24	109.3	110.3	112.8	24	111.6	113.1	116.7	24	110.7	111.4	111.8	24	119.6	119.8	120.1	24

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

Date	Rock Island			#	Rock I. Tlwr			#	Wanapum			#	Wanapum Tlwr			#	Priest Rapids			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/28	105.0	105.3	105.6	24	107.3	108.8	112.9	24	106.8	107.2	107.5	24	110.4	111.2	113.0	24	108.7	108.8	109.1	24
5/29	104.8	105.1	105.2	24	106.8	107.8	108.4	24	104.7	104.9	105.3	24	109.3	109.9	111.6	24	108.0	108.1	108.4	24
5/30	105.1	105.5	105.6	24	108.2	109.0	110.3	24	105.1	105.6	106.3	24	109.9	110.2	110.8	24	108.9	109.8	110.5	24
5/31	105.8	105.9	105.9	24	109.5	110.1	112.2	24	107.1	107.7	108.3	24	110.5	110.8	112.2	24	110.4	110.7	111.1	24
6/1	101.6	105.7	105.9	19	109.0	109.5	110.1	24	107.3	108.2	108.5	24	110.0	110.5	111.6	24	110.3	110.7	111.2	24
6/2	---	---	---	0	108.8	109.4	110.1	24	108.7	108.9	109.3	24	110.9	111.4	114.8	24	110.5	110.7	110.9	24
6/3	105.8	105.8	106.7	10	109.5	110.7	112.9	24	107.5	108.0	108.4	24	110.0	110.7	112.0	24	109.3	109.7	110.0	24
6/4	106.0	106.4	106.6	24	109.6	111.2	114.4	24	107.2	107.7	108.2	24	110.2	111.4	112.5	24	109.8	110.4	110.7	24
6/5	104.9	105.1	105.2	24	108.9	110.0	111.2	24	107.5	109.6	112.0	24	109.1	110.1	110.8	24	108.5	108.9	109.6	24
6/6	105.2	105.3	105.4	24	109.2	110.5	112.6	24	108.7	109.8	110.8	24	109.8	110.7	111.4	24	109.5	109.8	110.3	24
6/7	101.5	105.2	105.2	23	109.0	109.8	112.7	24	---	---	---	0	---	---	---	0	---	---	---	0
6/8	104.3	104.3	106.5	11	108.0	108.6	109.3	24	---	---	---	0	---	---	---	0	---	---	---	0
6/9	106.7	106.8	106.9	24	112.0	114.6	120.5	24	---	---	---	0	---	---	---	0	---	---	---	0
6/10	109.9	113.1	113.7	24	119.0	120.4	122.0	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					
5/28	110.9	111.3	111.7	24	106.8	107.1	107.4	24	107.8	108.5	109.5	24	101.6	102.2	102.7	24	102.4	102.9	103.3	24
5/29	110.2	110.5	110.8	24	106.5	107.5	108.2	24	106.6	106.8	106.9	24	101.5	102.3	102.7	24	102.8	103.6	104.0	24
5/30	110.3	110.8	111.2	24	107.8	109.0	109.5	24	106.9	108.1	109.7	24	102.9	104.0	104.8	24	103.5	104.2	104.6	24
5/31	111.9	112.3	112.6	24	108.8	109.4	110.1	24	106.8	108.3	109.8	24	102.0	102.3	102.7	24	103.1	103.4	103.6	24
6/1	112.5	112.7	113.0	24	109.0	109.7	110.1	24	107.8	108.1	108.3	24	101.9	102.7	103.1	24	103.0	103.6	103.9	24
6/2	112.4	112.7	113.0	24	108.8	109.1	109.3	24	106.3	106.6	107.0	24	101.9	102.3	102.5	24	103.3	103.7	104.7	24
6/3	110.4	110.7	111.1	24	107.9	109.3	109.8	24	102.7	104.7	105.5	24	102.8	104.2	104.8	24	103.1	103.8	104.1	24
6/4	111.1	111.8	112.4	24	108.6	109.0	109.4	24	98.3	99.0	99.6	24	103.3	103.6	104.2	24	104.6	105.0	105.5	24
6/5	110.1	110.9	111.5	24	107.9	108.7	109.0	24	97.4	98.3	99.1	24	104.2	105.6	106.2	24	106.9	108.9	109.6	24
6/6	111.3	112.0	112.8	24	108.7	109.1	109.4	24	97.1	97.7	98.2	24	103.6	104.0	104.3	24	109.3	109.5	109.7	24
6/7	---	---	---	0	108.6	109.7	110.6	24	97.4	98.4	99.8	24	102.9	103.4	103.8	24	109.2	109.5	110.0	24
6/8	---	---	---	0	109.4	110.3	110.8	24	104.2	106.4	106.5	24	104.0	105.0	105.5	24	109.6	109.9	110.9	17
6/9	---	---	---	0	109.4	109.9	110.4	24	99.8	101.9	106.1	24	102.2	102.7	103.8	24	108.6	108.9	109.5	23
6/10	---	---	---	0	109.4	110.4	111.0	24	98.2	99.5	100.9	24	101.9	102.3	102.7	24	107.9	108.1	108.5	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					
5/28	101.5	102.7	103.5	22	102.5	102.9	103.1	24	109.3	109.4	109.5	24	108.6	108.8	109.0	24	109.8	110.2	110.4	24
5/29	101.3	102.1	102.6	22	101.0	101.2	101.6	24	109.1	109.3	109.5	24	107.3	107.4	107.8	24	109.4	109.7	109.9	24
5/30	102.9	104.4	105.6	24	101.1	101.5	102.3	24	109.8	110.0	110.1	24	107.3	107.8	108.1	24	109.9	110.2	110.5	24
5/31	102.0	102.7	103.3	24	102.6	102.8	103.0	24	110.1	110.1	110.3	24	108.1	108.6	108.9	24	109.9	110.1	110.3	24
6/1	101.6	102.6	103.8	24	103.5	103.8	104.3	24	110.3	110.5	110.5	24	108.3	108.7	108.9	24	110.3	110.4	110.8	24
6/2	101.4	101.7	102.2	24	103.7	104.1	104.5	24	110.6	110.7	110.7	24	108.9	109.1	109.2	24	111.4	111.8	111.9	24
6/3	101.6	102.6	103.0	24	102.4	102.7	102.9	24	115.8	121.1	127.4	24	108.4	108.9	109.6	24	114.3	116.6	121.5	24
6/4	102.9	103.3	103.7	24	102.9	103.0	103.2	24	124.7	125.7	127.5	24	108.3	108.7	109.0	24	115.6	116.9	119.4	24
6/5	102.8	104.2	104.6	24	103.0	103.7	104.1	24	130.1	131.7	132.4	24	114.5	116.2	116.5	24	123.9	126.0	126.7	24
6/6	102.8	103.1	103.8	24	106.4	107.6	108.0	24	130.8	131.5	132.6	24	122.3	124.4	124.7	24	126.3	127.8	128.3	24
6/7	102.0	102.5	102.9	24	107.7	107.8	108.0	24	130.1	130.8	133.8	24	124.4	124.9	125.1	24	126.1	126.7	127.9	24
6/8	103.1	104.3	104.8	24	108.0	108.7	109.0	24	130.5	130.8	131.5	24	124.2	125.1	125.9	24	126.5	126.8	127.1	24
6/9	102.1	102.7	103.7	24	109.0	109.3	109.7	24	128.8	129.6	130.2	24	125.6	126.0	126.2	24	122.9	123.8	125.6	24
6/10	101.2	101.8	102.6	24	107.1	107.7	108.4	24	128.7	129.8	130.6	24	121.0	122.2	124.0	24	123.2	124.5	142.6	24

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</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					
5/28	110.0	110.3	110.9	24	117.7	118.2	118.4	24	113.9	114.1	114.3	24	115.1	115.5	115.7	24	---	---	---	0
5/29	108.7	108.9	109.2	24	118.0	118.1	118.3	24	112.2	112.5	112.9	24	115.4	115.7	116.0	24	---	---	---	0
5/30	109.3	109.7	110.1	24	118.0	118.4	118.5	24	112.0	112.4	113.0	24	115.9	116.0	116.1	24	---	---	---	0
5/31	110.5	110.7	110.9	24	118.7	118.8	119.1	24	113.5	113.9	114.2	24	115.8	116.0	116.1	24	---	---	---	0
6/1	111.1	111.3	111.4	24	118.3	118.8	119.0	24	114.0	114.2	114.3	24	115.2	115.5	116.2	24	---	---	---	0
6/2	111.5	111.6	111.7	24	118.7	119.1	119.4	24	114.6	114.9	115.1	24	116.1	116.6	116.8	24	---	---	---	0
6/3	110.9	111.3	111.8	24	118.5	118.8	119.9	24	113.7	114.0	114.3	24	118.0	119.8	122.4	24	---	---	---	0
6/4	113.4	114.2	116.0	24	118.5	118.8	119.9	24	114.1	114.3	114.7	24	120.7	121.7	123.1	24	---	---	---	0
6/5	113.8	115.9	122.3	24	123.4	126.3	128.0	24	114.3	115.4	116.6	24	125.0	127.6	128.2	24	---	---	---	0
6/6	127.7	128.6	129.5	24	125.9	126.8	127.3	24	120.4	122.0	123.2	24	128.4	129.2	130.4	24	---	---	---	0
6/7	127.3	128.2	129.6	24	125.6	126.7	127.7	24	123.6	123.8	124.3	24	127.0	127.8	128.2	24	---	---	---	0
6/8	127.8	128.5	129.7	24	125.7	126.2	126.5	24	124.1	125.0	125.6	24	127.6	128.2	128.9	24	---	---	---	0
6/9	128.1	129.1	129.7	24	122.3	123.6	126.2	24	124.5	125.2	125.7	24	124.9	126.2	127.5	24	---	---	---	0
6/10	122.2	122.7	124.7	24	121.3	122.3	122.7	24	120.6	121.5	123.0	24	123.9	124.5	125.0	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	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/28	108.6	109.0	109.3	24	113.9	114.4	115.0	24	106.7	106.8	106.9	24	113.2	114.1	114.5	24	107.6	108.3	109.0	24
5/29	106.2	106.5	107.1	24	114.5	115.0	115.3	24	106.2	106.4	107.0	24	112.5	113.2	113.9	24	106.7	107.2	107.5	24
5/30	106.6	107.1	107.6	24	113.8	114.1	114.9	24	106.5	107.0	107.2	24	113.3	113.7	114.2	24	109.5	111.1	111.8	24
5/31	108.2	108.5	108.6	24	113.6	114.0	114.7	24	107.0	107.1	107.3	24	113.8	114.1	114.5	24	110.2	110.5	111.0	24
6/1	109.3	109.9	110.0	24	114.0	114.5	115.3	24	106.4	106.6	106.7	24	114.8	115.5	116.3	24	109.6	110.0	110.4	24
6/2	110.2	110.4	110.8	24	114.5	114.9	115.7	24	106.9	107.2	107.5	24	115.6	117.3	117.6	24	111.6	112.1	112.3	24
6/3	109.1	109.5	109.8	24	115.2	116.4	117.1	24	107.0	107.7	108.4	24	117.2	118.6	119.3	24	110.2	111.1	112.1	24
6/4	109.1	109.6	110.2	24	117.4	117.6	117.8	24	108.8	109.0	109.2	24	117.8	118.3	118.4	24	110.9	111.4	112.0	24
6/5	109.6	110.6	111.4	24	118.9	120.4	121.0	24	108.1	108.6	109.1	24	118.2	118.6	119.0	24	111.3	113.1	113.7	24
6/6	112.7	114.4	116.0	24	118.6	119.0	119.4	24	109.6	109.8	109.9	24	118.4	118.7	118.9	24	111.8	112.2	113.1	24
6/7	115.7	116.1	116.7	24	118.5	119.0	119.1	24	109.4	109.5	109.7	24	118.1	118.5	118.9	24	111.0	111.5	112.1	24
6/8	114.7	116.1	117.0	24	119.6	120.1	120.4	24	111.8	113.6	114.5	24	118.0	118.9	119.6	24	111.8	113.3	114.2	24
6/9	116.7	117.3	117.8	24	121.2	121.7	122.0	24	113.9	114.5	114.7	24	118.9	119.2	119.8	24	113.5	113.9	114.2	24
6/10	112.2	113.6	115.2	24	122.6	122.9	123.2	24	111.4	111.8	112.6	24	118.3	118.6	118.8	24	110.9	111.4	112.2	24

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

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island			#
	24 h	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/28	114.0	114.4	115.2	24	109.7	110.5	111.3	24	115.0	115.4	115.9	24	111.8	112.3	113.4	24	116.6	116.9	117.2	24
5/29	113.2	113.6	113.9	24	107.5	107.8	108.1	24	115.1	115.5	115.8	24	111.2	112.5	113.8	24	116.4	116.5	116.7	24
5/30	115.3	116.3	116.9	24	109.5	110.7	111.2	24	115.3	115.7	115.9	24	113.9	114.6	115.2	24	117.1	117.5	117.6	24
5/31	115.8	116.1	116.5	24	112.8	113.5	113.9	24	116.1	116.7	117.1	24	113.3	114.2	114.9	24	117.3	117.6	117.8	24
6/1	115.6	115.9	116.1	24	113.6	114.0	114.2	24	116.5	116.8	117.1	24	114.7	115.7	116.3	24	116.9	117.4	117.7	24
6/2	116.5	117.2	117.6	24	112.9	113.2	113.5	24	115.5	116.6	116.8	24	113.7	114.3	114.8	24	117.4	117.8	118.0	24
6/3	115.4	115.8	116.5	24	112.4	113.3	114.5	24	114.6	114.9	115.5	24	112.5	113.9	114.6	24	118.8	120.0	120.8	24
6/4	116.1	116.9	117.4	24	113.6	114.4	114.9	24	114.6	115.3	115.9	24	112.5	112.9	113.3	24	119.5	120.1	121.0	24
6/5	116.4	117.0	117.5	24	113.6	114.6	115.7	24	114.7	115.9	117.1	24	113.1	114.4	115.0	24	119.7	120.6	121.4	24
6/6	115.9	116.3	117.4	24	116.3	116.5	116.6	24	117.4	117.8	118.0	24	115.4	116.2	116.8	24	121.0	121.3	121.6	24
6/7	114.8	115.4	116.5	24	113.7	114.1	115.3	24	115.8	116.2	116.5	24	114.9	115.4	115.7	24	120.6	121.2	121.6	24
6/8	115.8	116.5	117.5	24	114.2	114.5	114.9	24	117.7	118.5	119.0	24	115.5	116.3	116.5	24	121.6	122.2	122.5	24
6/9	116.4	116.7	117.1	24	114.8	115.1	115.3	24	118.7	118.9	119.0	24	116.5	116.9	117.3	24	122.3	122.4	122.6	24
6/10	114.9	115.2	115.5	24	112.6	113.3	114.1	24	117.8	118.1	118.4	24	115.2	115.3	115.5	24	122.2	122.3	122.4	24

Two-Week Summary of Passage Indices

<b>COMBINED YEARLING CHINOOK</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/28/2010	*	53	21	---	306	6,105	9,446	797	90	---	13,058	27,977
05/29/2010	*	---	30	---	---	5,799	13,224	1,524	97	30,571	17,892	23,404
05/30/2010	*	---	31	---	---	3,945	11,848	2,005	100	---	14,440	23,285
05/31/2010	*	---	7	---	---	3,324	7,260	2,967	75	40,035	9,188	21,454
06/01/2010	*	---	11	---	---	2,762	4,545	2,322	46	---	10,540	14,653
06/02/2010	*	---	10	---	---	744	3,560	1,272	26	40,764	8,785	13,492
06/03/2010	*	---	---	---	---	1,674	6,644	2,440	58	---	14,045	10,103
06/04/2010	*	---	---	---	---	4,242	5,375	6,131	83	49,558	15,753	28,004
06/05/2010	*	---	---	---	---	7,201	9,836	8,012	124	---	16,844	33,224
06/06/2010	*	---	---	---	---	6,814	7,536	7,904	45	18,113	23,457	40,966
06/07/2010	*	---	---	---	---	3,108	10,014	4,420	58	---	18,158	17,612
06/08/2010	*	---	---	---	---	1,329	15,621	8,508	66	11,571	9,592	16,396
06/09/2010	*	---	0	---	---	1,085	10,531	5,723	100	---	6,163	13,066
06/10/2010	*	---	2	---	---	791	8,103	6,343	189	4,798	4,485	6,547
06/11/2010		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>53</b>	<b>112</b>	<b>0</b>	<b>306</b>	<b>48,923</b>	<b>123,543</b>	<b>60,368</b>	<b>1,157</b>	<b>195,410</b>	<b>182,400</b>	<b>290,183</b>
<b># Days:</b>		<b>1</b>	<b>8</b>	<b>0</b>	<b>1</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>53</b>	<b>14</b>	<b>0</b>	<b>306</b>	<b>3,495</b>	<b>8,825</b>	<b>4,312</b>	<b>83</b>	<b>27,916</b>	<b>13,029</b>	<b>20,727</b>
<b>YTD</b>		<b>56,130</b>	<b>79,953</b>	<b>27,916</b>	<b>7,995</b>	<b>2,446,708</b>	<b>1,237,470</b>	<b>420,482</b>	<b>10,826</b>	<b>2,074,528</b>	<b>992,766</b>	<b>2,265,911</b>

<b>COMBINED SUBYEARLING CHINOOK</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/28/2010	*	0	0	---	104	4,259	572	2,311	93	---	2,805	4,700
05/29/2010	*	---	0	---	---	5,799	3,860	1,283	109	5,110	2,635	2,367
05/30/2010	*	---	1	---	---	12,043	790	1,283	75	---	3,733	3,162
05/31/2010	*	---	0	---	---	8,172	2,595	2,655	35	4,083	5,845	5,893
06/01/2010	*	---	0	---	---	14,560	1,682	3,173	29	---	3,995	7,612
06/02/2010	*	---	0	---	---	16,289	2,486	1,011	46	6,792	3,636	6,658
06/03/2010	*	---	---	---	---	50,552	10,668	1,536	105	---	5,618	7,518
06/04/2010	*	---	---	---	---	67,709	24,107	7,221	287	10,276	9,817	13,103
06/05/2010	*	---	---	---	---	115,033	49,023	13,757	200	---	9,817	19,839
06/06/2010	*	---	---	---	---	84,041	87,208	15,243	140	20,470	14,198	16,699
06/07/2010	*	---	---	---	---	77,252	67,235	28,821	230	---	9,079	14,310
06/08/2010	*	---	---	---	---	38,915	90,230	47,973	311	26,496	7,587	15,576
06/09/2010	*	---	0	---	---	62,259	109,311	71,877	314	---	14,415	13,785
06/10/2010	*	---	0	---	---	42,533	96,863	96,735	656	58,866	15,548	12,731
06/11/2010		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>104</b>	<b>599,416</b>	<b>546,630</b>	<b>294,879</b>	<b>2,630</b>	<b>132,093</b>	<b>108,728</b>	<b>143,953</b>
<b># Days:</b>		<b>1</b>	<b>8</b>	<b>0</b>	<b>1</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>104</b>	<b>42,815</b>	<b>39,045</b>	<b>21,063</b>	<b>188</b>	<b>18,870</b>	<b>7,766</b>	<b>10,282</b>
<b>YTD</b>		<b>0</b>	<b>42</b>	<b>28</b>	<b>1,275</b>	<b>627,756</b>	<b>550,570</b>	<b>295,923</b>	<b>4,658</b>	<b>154,101</b>	<b>114,688</b>	<b>1,951,850</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)	
05/28/2010	*	0	0	---	0	71	787	0	2,565	---	257	12,086
05/29/2010	*	---	0	---	---	70	286	0	1,567	3,913	254	2,630
05/30/2010	*	---	0	---	---	277	646	80	1,083	---	492	3,191
05/31/2010	*	---	0	---	---	346	215	156	1,167	6,112	1,432	3,776
06/01/2010	*	---	0	---	---	759	1,002	232	600	---	386	4,372
06/02/2010	*	---	0	---	---	270	1,512	149	753	8,831	895	4,916
06/03/2010	*	---	---	---	---	451	4,496	274	1,053	---	7,156	4,229
06/04/2010	*	---	---	---	---	326	1,932	817	1,136	8,633	4,314	11,048
06/05/2010	*	---	---	---	---	1,800	1,967	2,419	766	---	4,128	14,341
06/06/2010	*	---	---	---	---	909	2,017	2,258	417	5,452	3,499	10,559
06/07/2010	*	---	---	---	---	0	2,131	354	801	---	7,805	6,329
06/08/2010	*	---	---	---	---	442	1,420	0	506	4,485	4,295	3,826
06/09/2010	*	---	0	---	---	1,085	0	336	706	---	3,777	2,607
06/10/2010	*	---	0	---	---	396	0	317	1,034	3,256	1,595	3,658
06/11/2010	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7,202</b>	<b>18,411</b>	<b>7,392</b>	<b>14,154</b>	<b>40,682</b>	<b>40,285</b>	<b>87,568</b>
<b># Days:</b>		<b>1</b>	<b>8</b>	<b>0</b>	<b>1</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>514</b>	<b>1,315</b>	<b>528</b>	<b>1,011</b>	<b>5,812</b>	<b>2,878</b>	<b>6,255</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>	<b>38,383</b>	<b>50,268</b>	<b>11,871</b>	<b>37,154</b>	<b>74,324</b>	<b>86,294</b>	<b>499,648</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)	
05/28/2010	*	248	229	---	33	25,911	18,750	4,143	172	---	9,247	32,453
05/29/2010	*	---	163	---	---	10,060	26,234	1,363	118	10,768	5,016	36,026
05/30/2010	*	---	186	---	---	6,991	9,191	5,212	120	---	5,380	30,177
05/31/2010	*	---	120	---	---	11,704	12,103	2,187	112	6,667	5,364	38,984
06/01/2010	*	---	173	---	---	7,796	6,191	1,935	90	---	3,995	32,951
06/02/2010	*	---	180	---	---	6,827	6,906	2,190	151	5,946	2,911	17,505
06/03/2010	*	---	---	---	---	6,053	23,069	2,824	203	---	2,876	11,513
06/04/2010	*	---	---	---	---	14,194	13,174	6,403	403	6,321	5,103	8,221
06/05/2010	*	---	---	---	---	102,071	47,639	12,547	346	---	4,461	8,844
06/06/2010	*	---	---	---	---	36,342	43,453	25,217	118	5,650	14,301	5,848
06/07/2010	*	---	---	---	---	38,626	53,009	26,169	114	---	14,654	2,477
06/08/2010	*	---	---	---	---	16,963	74,540	17,741	141	9,226	13,600	6,148
06/09/2010	*	---	34	---	---	10,847	26,677	23,277	171	---	15,408	2,817
06/10/2010	*	---	21	---	---	5,341	16,819	15,224	182	3,732	9,867	3,194
06/11/2010	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>248</b>	<b>1,106</b>	<b>0</b>	<b>33</b>	<b>299,726</b>	<b>377,755</b>	<b>146,432</b>	<b>2,441</b>	<b>48,310</b>	<b>112,183</b>	<b>237,158</b>
<b># Days:</b>		<b>1</b>	<b>8</b>	<b>0</b>	<b>1</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>248</b>	<b>138</b>	<b>0</b>	<b>33</b>	<b>21,409</b>	<b>26,983</b>	<b>10,459</b>	<b>174</b>	<b>6,901</b>	<b>8,013</b>	<b>16,940</b>
<b>YTD</b>		<b>4,385</b>	<b>27,487</b>	<b>4,050</b>	<b>11,795</b>	<b>2,003,168</b>	<b>1,547,301</b>	<b>407,149</b>	<b>16,113</b>	<b>438,795</b>	<b>556,168</b>	<b>918,631</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)
05/28/2010 *	1	0	---	2	0	1,217	0	653	---	13,550	3,581
05/29/2010 *	---	0	---	---	279	1,644	0	163	380,251	33,862	6,048
05/30/2010 *	---	0	---	---	415	287	80	84	---	33,769	17,936
05/31/2010 *	---	0	---	---	416	215	156	28	153,003	34,789	53,183
06/01/2010 *	---	0	---	---	345	501	155	24	---	27,578	82,578
06/02/2010	---	0	---	---	338	100	119	42	275,286	19,135	95,262
06/03/2010 *	---	---	---	---	64	487	192	211	---	27,154	63,201
06/04/2010 *	---	---	---	---	163	141	136	586	47,618	37,754	40,594
06/05/2010 *	---	---	---	---	360	703	0	282	---	21,529	76,248
06/06/2010 *	---	---	---	---	1,363	0	0	118	31,645	12,141	47,926
06/07/2010 *	---	---	---	---	0	0	0	198	---	11,150	17,612
06/08/2010 *	---	---	---	---	442	710	0	82	36,470	8,303	7,651
06/09/2010 *	---	0	---	---	0	0	168	134	---	10,438	2,907
06/10/2010 *	---	0	---	---	0	0	0	122	12,303	7,076	10,050
06/11/2010	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4,185</b>	<b>6,005</b>	<b>1,006</b>	<b>2,727</b>	<b>936,576</b>	<b>298,228</b>	<b>524,777</b>
<b># Days:</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>1</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>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>299</b>	<b>429</b>	<b>72</b>	<b>195</b>	<b>133,797</b>	<b>21,302</b>	<b>37,484</b>
<b>YTD</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>7,789</b>	<b>11,944</b>	<b>1,615</b>	<b>36,279</b>	<b>1,428,083</b>	<b>605,343</b>	<b>766,111</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:

6/11/10 10:40 AM

		05/28/10	TO	06/11/10			
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	328,600	30,052	4,150	168,521	2,450	533,773
	Sum of NumberBarged	306,465	29,252	3,945	162,363	2,446	504,471
	Sum of NumberBypassed	0	379	0	3,559	0	3,938
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	27	2	0	7	0	36
	Sum of FacilityMorts	647	19	5	87	4	762
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	674	21	5	94	4	798
<b>LGS</b>	Sum of NumberCollected	328,628	80,056	12,120	236,403	4,110	661,317
	Sum of NumberBarged	264,739	74,731	12,119	225,511	4,110	581,210
	Sum of NumberBypassed	16	0	0	0	0	16
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	11	4	1	1	0	17
	Sum of FacilityMorts	2,406	141	0	99	0	2,646
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2,417	145	1	100	0	2,663
<b>LMN</b>	Sum of NumberCollected	177,650	37,337	4,600	87,324	670	307,581
	Sum of NumberBarged	116,483	33,288	4,400	77,480	570	232,221
	Sum of NumberBypassed	70	17	0	114	0	201
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	1	0	3	0	6
	Sum of FacilityMorts	134	40	0	139	0	313
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	136	41	0	142	0	319
<b>MCN</b>	Sum of NumberCollected	63,418	109,567	22,128	26,132	540,669	761,914
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	63,069	109,027	22,099	26,076	540,139	760,410
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	6	13	1	2	43	65
	Sum of FacilityMorts	343	527	28	54	487	1,439
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	349	540	29	56	530	1,504
Total Sum of NumberCollected		898,296	257,012	42,998	518,380	547,899	2,264,585
Total Sum of NumberBarged		687,687	137,271	20,464	465,354	7,126	1,317,902
Total Sum of NumberBypassed		63,155	109,423	22,099	29,749	540,139	764,565
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		46	20	2	13	43	124
Total Sum of FacilityMorts		3,530	727	33	379	491	5,160
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		3,576	747	35	392	534	5,284

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/11/10 10:40 AM

TO: 06/11/10

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	348,858	1,618,479	27,200	5,160	1,329,199	3,328,896
	Sum of NumberBarged	325,984	1,424,527	26,990	5,146	1,278,489	3,061,136
	Sum of NumberBypassed	700	191,860	0	10	47,916	240,486
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	29	53	0	0	18	100
	Sum of FacilityMorts	684	1,224	10	4	254	2,176
	Sum of ResearchMorts	0	415	0	0	17	432
	Sum of TotalProjectMorts	713	1,692	10	4	289	2,708
<b>LGS</b>	Sum of NumberCollected	331,378	857,518	34,370	8,260	1,052,875	2,284,401
	Sum of NumberBarged	267,487	770,670	34,369	8,260	982,402	2,063,188
	Sum of NumberBypassed	17	81,373	0	0	59,473	140,863
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	12	29	1	0	9	51
	Sum of FacilityMorts	2,406	266	0	0	199	2,871
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2,418	295	1	0	208	2,922
<b>LMN</b>	Sum of NumberCollected	178,290	282,771	7,475	1,070	224,486	694,092
	Sum of NumberBarged	117,142	277,319	7,275	969	209,769	612,474
	Sum of NumberBypassed	70	1,450	0	0	4,930	6,450
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	9	0	0	10	21
	Sum of FacilityMorts	134	200	0	1	288	623
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	136	209	0	1	298	644
<b>MCN</b>	Sum of NumberCollected	76,394	1,214,477	41,918	829,691	255,484	2,417,964
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	76,040	1,213,555	41,877	829,078	255,327	2,415,877
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	6	117	3	73	16	215
	Sum of FacilityMorts	348	805	38	540	141	1,872
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	354	922	41	613	157	2,087
Total Sum of NumberCollected		934,920	3,973,245	110,963	844,181	2,862,044	8,725,353
Total Sum of NumberBarged		710,613	2,472,516	68,634	14,375	2,470,660	5,736,798
Total Sum of NumberBypassed		76,827	1,488,238	41,877	829,088	367,646	2,803,676
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		49	208	4	73	53	387
Total Sum of FacilityMorts		3,572	2,495	48	545	882	7,542
Total Sum of ResearchMorts		0	415	0	0	17	432
Total Sum of TotalProjectMorts		3,621	3,118	52	618	952	8,361



Cumulative Adult Passage at Mainstem Dams Through: 06/10

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	06/10	244362	12613	114525	66631	167834	17301	23999	2421	21239	9660	16135	2515	0	0	0	0	0	0
TDA	06/10	189839	11546	93908	53646	121486	13792	15647	1404	13511	4590	9543	1357	0	0	0	0	0	0
JDA	06/10	179446	11794	76806	49733	101283	12037	9357	897	7909	3075	5762	774	0	0	0	0	0	0
MCN	06/10	153246	9178	70413	43328	93119	11340	3590	297	2263	903	1995	302	0	0	0	0	0	0
IHR	06/10	101135	6047	54363	27828	63272	7092	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/10	95058	5817	62640	18734	60909	5668	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/10	87742	5093	45668	22111	55178	6007	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/10	83703	5639	41594	27427	53982	7108	0	0	0	0	0	0	0	0	0	0	0	0
PRD	06/08	29074	909	11675	2735	18010	783	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/09	27767	1362	10120	5229	14379	1382	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/09	8309	476	4729	861	5526	434	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/09	6718	549	2511	1549	3124	355	0	0	0	0	0	0	0	0	0	0	0	0
WFA	06/09	44258	1043	19394	1742	-	-	-	-	-	-	-	-	0	0	0	0	0	-

DAM	Coho						Sockeye			Steelhead			Wild 2010
	2010		2009		10-Yr Avg.		2010	2009	10-Yr Avg.	2010	2009	10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	0	0	0	0	0	0	3206	4283	2656	9494	6471	6221	2572
TDA	0	0	0	0	0	0	2008	2480	1389	3108	1798	1877	1313
JDA	0	0	0	0	0	0	1386	1462	926	2998	3665	3413	1569
MCN	0	0	0	0	0	0	392	341	295	2588	2644	2296	1299
IHR	0	0	0	0	0	0	0	9	0	3098	3169	2348	1279
LMN	0	0	0	0	0	0	0	3	0	4163	4825	2646	2214
LGS	0	0	0	0	0	0	0	0	0	3160	5428	2720	1591
LGR	0	0	0	0	0	0	0	0	0	10481	10802	8560	4178
PRD	0	0	0	0	0	0	35	4	21	90	59	29	0
RIS	0	0	0	0	0	0	10	2	2	117	108	76	82
RRH	0	0	0	0	0	0	4	0	0	359	435	216	275
WEL	0	0	0	0	0	0	0	0	0	103	80	43	85
WFA	0	0	0	0	0	0	-	-	-	19462	10527	-	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.

Page last updated on: 06/05/2010

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

## 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>Lower Granite Dam</b>											
	06/07/10	Chinook + Steelhead	73	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>											
	06/07/10	Chinook + Steelhead	100	6	6	6.00%	1.00%	5	0	1	0
<b>Lower Monumental Dam</b>											
	06/02/10	Chinook + Steelhead	100	4	4	4.00%	0.00%	4	0	0	0
	06/09/10	Chinook + Steelhead	101	4	4	3.96%	0.00%	4	0	0	0
<b>McNary Dam</b>											
	06/03/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/07/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	06/01/10	Chinook + Steelhead	80	0	0	0.00%	0.00%	0	0	0	0
	06/05/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/08/10	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Rock Island Dam</b>											
	06/02/10	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/03/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/08/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/10/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0