



# Fish Passage Center

## Weekly Report #10 - 11

May 28, 2010

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 79% and 134% of average at individual sub-basins over May. Precipitation above The Dalles has been 96% of average over May. Over the 2010 water year, precipitation has ranged between 75% and 89% of average.

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

Location	Water Year 2010 May 1-24		Water Year 2010 October 1, 2009 to May 24, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.40	81	14.05	80
Snake River Above Ice Harbor	1.41	97	11.59	88
Columbia Above The Dalles	1.46	96	14.92	85
Kootenai	1.37	80	14.58	81
Clark Fork	1.30	82	8.91	75
Flathead	1.70	90	13.58	87
Pend Oreille/Spokane	1.59	79	19.76	81
Central Washington	0.57	95	6.27	88
Snake River Plain	1.15	101	7.24	87
Salmon/Boise/Payette	1.46	106	14.0	89
Clearwater	2.19	94	19.57	83
SW Washington Cascades/Cowlitz	3.94	134	54.04	88
Willamette Valley	3.34	122	46.51	88

Table 2 displays the May Final and June Early runoff volume forecasts for multiple reservoirs. The current forecast at The Dalles between January and July is 71300 Kaf (66% of average).

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

Location	May Final		June Early	
	% Average (1971-2000)	Probable Runoff Volume (Kaf)	% Average (1971-2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	66	70900	66	71300
Grand Coulee (Jan-July)	74	46400	72	45600
Libby Res. Inflow, MT (Apr-Aug)	69 77*	4310 4887*	69	4340
Hungry Horse Res. Inflow, MT (Jan-July)	74	1640	71	1570
Lower Granite Res. Inflow (Apr- July)	58	12400	62	13300
Brownlee Res. Inflow (Apr-July)	44	2780	46	2910
Dworshak Res. Inflow (Apr-July)	55 57*	1460 1526*	59	1560

\* 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 53.7 Kcfs from April 3 to May 27 and 80.1 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 May 27 have averaged 168.9 Kcfs at McNary Dam and 105.9 Kcfs at Priest Rapids Dam. Over the last week, flows have averaged 229.2 Kcfs at McNary Dam and 133.9 Kcfs at Priest Rapids Dam.

Grand Coulee Reservoir is at 1264.9 feet (5-27-10) and refilled 2.7 feet over the last week. Outflows at Grand Coulee have ranged between 78.7 and 118.0 Kcfs over the last week. Outflows from Grand Coulee continue to be managed to achieve flows of 125-135 Kcfs at Priest Rapids Dam.

The Libby Reservoir is currently at elevation 2418.5 feet (5-27-10) and has refilled 1.7 feet last week. Outflows at Libby are currently 14.5 Kcfs. The COE released its May Final forecast at Libby Dam on May 7<sup>th</sup>, 2010 which was 4887 Kaf (April-August) which puts Libby in a Tier 2 sturgeon operation in 2010. It is expected that the sturgeon pulse (full powerhouse outflows) will occur in early to middle June. Inflows to Libby have been decreasing over the last week, ranging from 15.5 Kcfs to 36 Kcfs.

Hungry Horse is currently at an elevation of 3538.6 feet (5-27-10) and has refilled 2.3 feet last week. Outflows at Hungry Horse have been approximately 4.0 Kcfs last week. Inflows to Hungry Horse Dam have been decreasing over the last week, ranging between 6.7 Kcfs to 12.5 Kcfs.

Dworshak is currently at an elevation of 1576.2 feet (5-27-10) and has refilled approximately 5.7 feet last week. Outflows from Dworshak have been decreased to minimum outflow (1.2 Kcfs). Inflows to Dworshak have been decreasing over the last week, ranging between 8.1 to 11.3 Kcfs.

The Brownlee Reservoir was at an elevation of 2073.2 feet on May 27, 2010 refilling 1.1 feet last week. Over the last week, outflows at Brownlee have ranged between 18.1-25.0 Kcfs. Inflows to Brownlee have increased from 21.7 Kcfs to 23.4 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.

Project	Day/Night Spill
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

Spill at Lower Granite Dam met the 20 Kcfs instantaneous level over the past week. Spill at Little Goose Dam achieved the 30% of instantaneous flow and has ranged from a daily average of 20.4 Kcfs to 30.6 Kcfs. Spill at Lower Monumental Dam was relatively constant over the past week, near the gas cap of 27 Kcfs. Spill was managed for TDG in the Ice Harbor forebay. 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. Spill at Ice Harbor Dam occurred as 45 Kcfs during daytime hours, and all flow in excess of that required to operate one turbine unit during nighttime hours, or as 30% spill, in two-day blocks. However, due to the transmission limitations in the region last week, the spill schedule was rearranged so that the 45 Kcfs/ gas cap spill level two-day block was exchanged with a 30% two-day block. Since two 30% two-day blocks were already scheduled for this week, this exchange resulted in 30% spill for 6 days, returning to the 45/gas cap spill on May 28, 2010.

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.

Project	Day/Night Spill
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 have been met at McNary Dam. At John Day Dam the testing of 30% spill versus 40% spill occurred in two-day blocks. To address the transmission limitations last week BPA had also requested that, rather than switching to the 30% spill level the project stay at 40% for another two day block. Since two 30% spill blocks were already planned this exchange did not reduce overall planned spill, but resulted in 6 days of 30% spill. The planned spill levels were met at The Dalles over the past week. At Bonneville Dam spill met the 100 Kcfs spill level.

At present, GBT monitoring is being implemented at Lower Granite, Little Goose, Lower Monumental, McNary, Bonneville and Rock Island dams. A few fish were reported with Rank 1 signs of fin GBT this past week at Little Goose (3%) and Lower Monumental (5%) dams. These levels of incidence are well below the action criteria of 15%.

All of the tailrace TDG monitors are reporting TDGS levels well below the State Waiver limits. Some slight exceedences (one day at Ice Harbor forebay and one day at Camas/Washougal) were reported for May 27<sup>th</sup>. These exceedences are less of a direct result of spill levels at upstream projects, but more likely a response to temperature and local biological and physical processes in the vicinity of the forebay monitors.

**Smolt Monitoring:** Subyearling Chinook collections at Snake River dams increased over the past week as the summer migrants began passage. Collections of yearling Chinook and steelhead at SMP Snake River tributary traps have declined with the exception of steelhead collections at the Salmon River Trap. Passage numbers of spring migrants at dams on the Columbia River have increased over the past week. At Rock Island Dam they have taken the unusual step of shutting off the smolt trap 12 hours a day due to high numbers of smolts being collected over the past several days.

The Salmon River Trap, located at River km 103, and operated by Idaho Department of Fish and Game, was out of operation due to high flows and debris between May 19 and May 24. Steelhead collections predominated catch over the past few days of sampling at the trap, with decreasing numbers of yearling Chinook being collected. Small numbers of sockeye smolts were collected over the past three days of sampling, indicating more sockeye are passing downstream. PIT-tag recaptures at the trap show that at least some of these sockeye were released last fall

at Petit and Alturus lakes. The trap is scheduled to end operations in the next few days. Flows in the Salmon River are forecast to peak again on June 1 at about 25 Kcfs. The Grande Ronde Trap operated by the Oregon Department of Fish and Wildlife, has completed collections for the season. The Imnaha River Trap, operated by the Nez Perce Tribe, provides data to the SMP, on their fish collection. The trap has been operating since mid-February. The Imnaha Trap collections have decreased gradually over the past two weeks with the spring migration likely nearing its end in that tributary based on historic sampling.

Collections of yearling Chinook at the Lewiston Trap, operated by IDFG, increased quickly over the past few days. Yearling Chinook collection increased to 983 fish on May 26. Steelhead collections have dropped off over the past week. Collections of sockeye smolts began on May 15 and increased to a collection of 58 smolts on May 22. Flows have dropped to near 50 Kcfs which is about 25 Kcfs below median historic levels for this time of year.

Passage indices for yearling Chinook, coho and steelhead decreased over the past week after peaking on May 21 coinciding with an increase in flows. At the same time sockeye and subyearling Chinook indices have increased. Sockeye passage has remained relatively steady over the past the several days while subyearling Chinook indices have begun to increase from near zero two weeks ago to a weekly average index of 2,100 this week. SMP crews report that a large number of lamprey passed on May 24. According to COE personnel a large number passed over the separator but only 1 fish ended up in the sample. With the sample at very low rate 1% or less a tight cluster of fish can be missed and apparently such was the case for the lamprey on that date. Steelhead predominated in the sample at Lower Granite Dam as well as Little Goose Dam the past week.

Passage at Rock Island Dam has collected an unusually large number of smolts the past few days. 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. Coho and Sockeye were the predominant species being collected at the site the past several days. Over 6,000 sockeye were sampled on May 24. After that the crew has reduced sampling to 12 hours per day and still collections of sockeye and coho have remained unusually high.

At John Day Dam mortality rates have returned to normal levels as the metal panel near the tainter gate

that diverts flow into the elevated bypass flume was repaired. The COE repaired the panel on May 19. The bypass flume was shut down for repairs for several hours on that date. The mortality rate for all species appears to have dropped below 1% over the past week of sampling (when sample sizes were large enough to estimate mortality rate) indicating that the problem was identified and fixed.

At Bonneville Dam the largest collections over the past week have been yearling Chinook followed by steelhead. Coho and sockeye passage indices have been relatively high as well this past week as those species appear to be reaching or just past peak passage.

### **Hatchery Release:**

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. Releases of subyearling fall Chinook surrogates to the Snake River that began in mid-May continued this week. In all, approximately 230,000 fall Chinook surrogates are scheduled for release into the Snake River, near Captain John's Rapids. These surrogates are 100% unmarked, but do have PIT-tags. The surrogate releases to the Snake River are expected to run through the end of May or early June.

In addition to the continued surrogate releases, there were many releases of subyearling fall Chinook this week. Approximately 1.1 million subyearling fall Chinook were released into the Snake River, above Lower Granite Dam, this week. These releases include a release of 500,000 juveniles from the Captain Johns Rapids Acclimation Facility, 400,000 juveniles from the Pittsburg Landing Acclimation Facility, and 200,000 juveniles that were released directly into Couse Creek. Approximately 45% of the subyearlings released into the Snake River this week were unmarked. In addition, approximately 400,000 subyearlings were released into the Grande Ronde River this week. About 500,000 subyearlings were released from the Big Canyon Acclimation Facility into the Clearwater River this week. Of these, approximately 60% are unmarked. Finally, about 200,000 subyearlings were released directly into the Snake River from Lyons Ferry Hatchery, which is below Little Goose Dam. These subyearlings were 100% adipose clipped and tagged with coded-wire-tags.

Approximately 500,000 subyearling fall Chinook are scheduled to be released from the Nez

Perce Tribal Hatchery into the Clearwater River, beginning on or around June 1<sup>st</sup>. Of these, about 40% are unmarked. This is the only release of fall Chinook to this zone that is scheduled to begin over the next two weeks.

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There were no releases of juvenile salmonids scheduled to begin this week in this zone. However, several volitional releases of summer Chinook and coho that began weeks ago are scheduled to end over the next week.

Nearly 10.3 million subyearling fall Chinook are scheduled for release in this river zone over the next two weeks. These fall Chinook subyearlings are to be released directly into the Mid-Columbia River from Ringgold Springs and Priest Rapids hatcheries, both of which are located below Priest Rapids Dam. These releases are volitional and are scheduled to begin on or around June 5<sup>th</sup> and will last until mid to late June. The only other release of juvenile salmonids scheduled to begin over the next two weeks is 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.

**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. There are no new releases of juvenile salmonids scheduled to begin over the next two weeks. However, a volitional release of 212,760 yearling spring Chinook to the Deschutes River that began weeks ago is scheduled to end on or around June 1<sup>st</sup>.

### **Adult Fish Passage:**

Adult counts at Bonneville Dam have been updated through May 27th. Daily adult spring Chinook counts at Bonneville Dam ranged from 728 to 1829 adult salmon per day. Between March 15th and May 27th, 234823 spring Chinook have been counted at Bonneville Dam. In 2009, 108754 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2010 adult spring Chinook count at Bonneville Dam is about 2.16 times greater than the 2009 count. The Bonneville spring Chinook adult count

is about 1.44 times greater than the 10 year average of 162654. The 2010 Bonneville Dam spring Chinook jack count of 11677 is about 18.1% of the 2009 count of 64340 and about 70.9% of the 10 year average of 16476. The 2010 Willamette Falls Dam adult spring Chinook count of 41670 is about 3 times greater than the 2009 count of 13702. At The Dalles Dam the 2010 adult spring Chinook count is 174449 and at McNary Dam 132784 adult spring Chinook have been counted. The McNary Dam 2010 adult spring Chinook count is about 2.41 times greater than the 2009 count of 55115 and is about 1.6 times greater than the 10 year average of 82200. The 2010 McNary Dam jack spring Chinook count of 7233 is 19.9% of the 2009 count and 78.2% of the 10 year average count.

At Little Goose Dam on 5/25/2010 at 8:00 am the TSW was taken out of operation in order to switch from the low crest to the high crest. During this time, spill was at 30% (flat pattern). Once the switch was made, the plan was to maintain the 30% spill (flat pattern) at LGS without the TSW in operation. This operation was to result in increasing adult counts at LGS. This 30% spill (flat pattern with no TSW) was maintained until about noon on 5/27/2010, at which time LGS spill was again 30% (bulk) with the TSW in operation. The daily adult spring Chinook count at LGS on 5/24 was 955, on 5/25 the daily count was 2425, on 5/26 the daily count was 1158 and on 5/27 the daily count was 468. As of 5/28 at Lower Granite Dam, the cumulative 2010 adult spring Chinook count of 76090 is about 2.74 times greater than the 2009 count of 27770 and about 1.77 times greater than the 10 year average count of 43047.

The Bonneville Dam 2010 steelhead count of 7091 is about 1.72 times greater than the 2009 count of 4125. The 2010 steelhead count is about 1.8 times greater than the 10-year average of 3954. At upriver sites, adult steelhead continue to move through the hydro system to reach their tributaries and spawning sites. The majority of these fish over-wintered in pools and will complete their trip to their spawning grounds in March through early May. Daily adult steelhead counts at Lower Granite Dam ranged from 5 to 11 adults per day last week. This year's Lower Granite steelhead count of 10444 is about 96.9% of the 2009 count of 10775 and 1.22 times greater than the 10 year average of 8524. The 2010 Lower Granite wild steelhead count as of May 20th was 4157. At Rock Island Dam, as of May 27th, 112 adult steelhead have been counted and

at Rocky Reach Dam, 343 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2010 count for steelhead was 17133, as of May 26th. This year's steelhead count is about 2.23 times greater than the 2009 count of 7688 at Willamette Falls Dam for the same date range.

### Hatchery Releases Last Two Weeks

Hatchery Release Summary										
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</b>					<b>230,000</b>					
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2010	400,000	05-24-10	05-24-10	Pittsburg Landing Acclim Pond	Snake River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2010	500,000	05-24-10	05-24-10	Cpt John Acclim Pond Big Canyon (Clearwater	Snake River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2010	500,000	05-25-10	05-25-10	River)	Clearwater River M F	
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2010	500,000	05-15-10	05-15-10	Lapwai Creek	Clearwater River M F	
<b>Nez Perce Tribe Total</b>					<b>1,900,000</b>					
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2010	400,000	05-24-10	05-24-10	Grande Ronde River	Grande Ronde River	
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2010	212,760	04-13-10	06-01-10	Deschutes River	Deschutes River	
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH0	FA	2010	600,000	05-18-10	05-18-10	Umatilla River	Umatilla River	
<b>Oregon Dept. of Fish and Wildlife</b>					<b>1,212,760</b>					
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2010	610,000	04-15-10	05-15-10	Chiwawa River	Wenatchee River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2010	200,000	05-25-10	05-25-10	Couse Creek	Snake River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2010	200,000	05-25-10	05-25-10	Lyons Ferry Hatchery	Snake River	
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2010	50,000	04-10-10	05-15-10	Wenatchee River	Wenatchee River	
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2010	335,000	04-15-10	06-01-10	Wells Hatchery	Mid-Columbia River	
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2010	484,000	05-10-10	05-20-10	Wells Hatchery	Mid-Columbia River	
<b>Washington Dept. of Fish and Wildlife</b>					<b>1,879,000</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>6,120,932</b>					

### Hatchery Releases Next Two Weeks

Agency	Hatchery Release Summary					RelStart	RelEnd	RelSite	RelRiver
	From:	Hatchery	Species	Race	MigYr				
National Marine Fisheries Service <b>National Marine Fisheries Service</b>	Lyons Ferry Hatchery	CH0	FA	2010	230,000	05-11-10	05-29-10	Couse Creek	Snake River
<b>Total</b>					<b>230,000</b>				
Nez Perce Tribe <b>Nez Perce Tribe Total</b>	Nez Perce Tribal Hatchery	CH0	FA	2010	500,000	06-01-10	06-15-10	Nez Perce Tribal Hatchery	Clearwater River M F
<b>Total</b>					<b>500,000</b>				
Oregon Dept. of Fish and Wildlife <b>Oregon Dept. of Fish and Wildlife</b>	Round Butte Hatchery	CH1	SP	2010	212,760	04-13-10	06-01-10	Deschutes River	Deschutes River
<b>Total</b>					<b>212,760</b>				
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2010	6,800,000	06-10-10	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
Washington Dept. of Fish and Wildlife <b>Washington Dept. of Fish and Wildlife Total</b>	Wells Hatchery	CH1	SU	2010	335,000	04-15-10	06-01-10	Wells Hatchery	Mid-Columbia River
<b>Total</b>					<b>11,385,000</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	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	134,850	04-12-10	06-01-10	Lost Creek Acclim 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	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	38,159	04-12-10	06-01-10	Lost Creek Acclim 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 <b>Yakama Tribe Total</b>	Prosser Acclim. Pond	CO	UN	2010	137,659	04-12-10	06-01-10	Prosser Acclim Pond	Yakima River
<b>Grand Total</b>					<b>899,172</b>				
					<b>13,226,932</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
05/14/2010	112.6	0.0	117.0	0.0	122.4	8.6	123.0	0.0	129.6	12.6	136.7	18.7	136.0	23.8
05/15/2010	85.3	0.0	86.6	0.0	98.0	7.2	98.9	0.0	107.8	11.5	116.1	18.5	113.6	23.6
05/16/2010	97.6	0.0	97.0	0.0	107.4	8.2	101.7	0.0	111.7	11.5	109.6	18.4	112.3	24.6
05/17/2010	106.3	0.0	108.4	0.0	123.9	8.8	126.4	0.0	139.6	13.0	139.9	19.3	135.4	24.0
05/18/2010	83.1	0.0	89.1	0.0	110.2	7.5	107.5	0.0	123.2	13.5	127.3	19.0	134.6	23.9
05/19/2010	97.5	0.0	95.7	0.0	115.8	8.0	112.8	0.0	130.7	13.2	136.2	19.5	125.9	24.7
05/20/2010	92.5	0.0	95.6	0.0	118.4	8.4	121.4	0.0	136.8	12.6	137.5	25.6	131.9	25.2
05/21/2010	100.7	0.0	95.6	0.0	123.1	8.8	121.6	0.0	136.2	12.6	148.9	20.0	150.5	25.6
05/22/2010	78.7	0.0	83.7	0.0	102.1	7.6	100.3	0.0	112.4	12.0	119.6	19.1	125.6	26.2
05/23/2010	90.1	0.0	86.4	0.0	105.3	7.8	105.2	0.0	115.8	10.9	125.7	18.9	118.4	23.4
05/24/2010	102.9	0.0	107.5	0.0	130.8	8.9	132.4	0.0	142.4	13.6	149.6	18.7	147.8	25.5
05/25/2010	118.0	0.0	109.9	0.0	125.4	8.7	119.3	0.0	127.9	12.7	137.1	18.0	141.4	24.5
05/26/2010	103.7	0.0	108.4	0.0	124.7	8.5	123.7	0.0	134.0	13.6	134.8	18.5	127.5	24.0
05/27/2010	105.4	0.0	108.7	0.0	116.2	8.5	116.4	0.0	127.4	13.6	125.2	18.4	125.9	24.8

**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
05/14/2010	1.2	0.0	17.9	17.3	52.5	20.3	51.1	15.3	51.8	25.7	52.8	21.7
05/15/2010	1.2	0.0	17.9	20.2	56.4	20.7	55.9	16.6	56.0	25.1	57.2	17.0
05/16/2010	1.3	0.0	18.2	18.8	60.5	20.5	57.4	17.2	57.3	21.4	59.0	42.5
05/17/2010	1.3	0.0	18.5	18.7	65.8	20.6	64.6	19.4	62.9	15.7	64.0	51.3
05/18/2010	1.2	0.0	20.0	18.7	77.4	19.0	76.3	22.8	76.5	14.4	79.4	55.5
05/19/2010	9.3	0.0	22.3	20.1	93.5	19.0	90.1	27.0	89.0	17.1	90.4	62.0
05/20/2010	9.8	0.0	23.1	19.2	106.0	20.6	100.4	30.1	101.3	20.5	105.4	68.0
05/21/2010	9.2	0.0	23.3	19.5	103.8	20.6	102.4	30.6	105.4	26.8	108.3	66.5
05/22/2010	1.2	0.0	23.4	20.9	89.7	20.7	86.1	26.0	85.1	25.6	87.4	37.9
05/23/2010	1.2	0.0	22.8	20.5	80.9	20.6	78.6	23.6	79.9	25.0	80.5	24.2
05/24/2010	1.2	0.0	24.2	22.9	74.1	20.6	72.2	21.5	72.9	25.7	73.4	22.0
05/25/2010	1.3	0.0	22.4	23.7	73.3	20.6	71.8	21.4	72.1	26.0	72.8	21.8
05/26/2010	1.3	0.0	21.7	24.4	69.1	20.5	68.4	20.5	66.8	25.7	68.6	20.5
05/27/2010	1.2	0.0	---	---	70.0	20.6	68.6	20.4	67.9	25.8	68.2	20.5

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
05/14/2010	182.8	73.6	189.1	75.8	177.7	71.1	199.5	89.4	10.2	87.5
05/15/2010	172.9	69.5	173.5	69.4	160.5	64.5	173.2	87.0	0.0	73.9
05/16/2010	174.2	70.0	182.0	58.5	170.6	68.0	184.9	84.4	0.0	88.1
05/17/2010	202.4	81.3	204.1	61.4	196.7	77.2	210.9	80.6	26.6	91.2
05/18/2010	209.4	84.4	197.8	75.6	185.8	73.3	214.7	74.6	35.4	92.3
05/19/2010	228.7	92.4	246.2	98.2	229.3	89.6	245.6	80.0	59.1	94.1
05/20/2010	234.5	94.2	221.3	88.4	209.1	83.4	219.8	90.8	21.2	95.4
05/21/2010	267.8	107.2	276.1	109.9	263.2	102.3	270.8	99.2	64.8	94.3
05/22/2010	240.8	96.8	242.9	79.2	226.6	91.3	244.7	99.5	41.1	91.7
05/23/2010	209.8	84.4	215.8	64.8	207.5	83.1	219.2	99.4	16.8	90.6
05/24/2010	237.4	95.6	248.7	74.7	235.7	92.9	239.5	99.5	30.1	97.5
05/25/2010	219.0	88.3	225.6	67.6	212.6	85.4	235.4	99.4	29.2	94.5
05/26/2010	218.4	87.6	209.4	62.8	195.9	78.2	202.1	99.3	3.2	87.2
05/27/2010	211.1	84.4	218.7	65.6	205.3	81.7	217.3	99.4	10.7	94.8

## 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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/14	97.2	97.4	97.8	24	106.6	107.3	107.9	24	107.2	107.6	108.1	24	104.1	104.7	105.2	24	104.6	105.0	105.3	24
5/15	97.0	97.2	97.7	24	106.8	107.8	109.3	23	107.2	107.6	108.5	24	104.1	104.8	105.3	23	104.9	105.4	105.7	24
5/16	96.8	97.3	97.5	24	107.2	108.0	109.3	20	107.9	108.2	108.9	24	104.8	105.3	106.0	20	105.0	105.6	105.8	24
5/17	97.3	97.6	97.9	24	107.9	108.6	110.2	21	107.6	107.9	108.9	24	105.1	105.4	105.6	21	105.7	106.2	106.3	24
5/18	97.6	97.9	98.5	24	107.9	108.3	109.0	24	106.7	107.1	107.6	24	104.4	104.7	105.1	24	105.5	105.9	106.0	24
5/19	97.9	98.1	98.4	24	108.5	110.4	114.9	22	106.6	107.4	109.0	24	104.5	105.1	106.1	22	105.5	106.0	106.3	24
5/20	97.4	97.7	98.1	24	107.3	108.3	111.6	24	106.2	106.4	106.6	24	103.9	104.3	105.1	24	104.4	104.6	104.8	24
5/21	98.1	98.8	99.1	23	110.2	111.9	113.6	21	106.7	107.2	107.6	24	103.8	104.4	104.7	21	105.1	105.7	106.1	24
5/22	98.3	98.6	98.8	23	107.9	108.5	110.0	22	107.0	107.1	107.2	24	104.5	105.0	106.3	22	105.4	105.7	106.0	24
5/23	97.3	97.6	98.1	22	107.4	108.0	109.4	20	106.8	106.9	107.1	24	104.7	105.2	105.6	20	104.9	105.4	105.6	24
5/24	97.6	98.0	98.2	24	109.4	111.7	112.7	23	106.5	106.7	107.5	24	104.9	105.3	105.6	23	104.9	105.1	105.3	24
5/25	97.5	97.7	98.1	24	109.8	111.1	111.5	24	106.2	106.5	106.8	23	104.9	105.5	105.7	24	104.9	105.4	105.6	24
5/26	97.9	98.2	98.5	24	108.8	109.0	109.3	22	106.6	106.9	107.9	24	105.2	105.5	105.6	22	105.0	105.1	105.4	24
5/27	97.9	98.1	98.5	23	110.3	111.4	112.4	22	106.5	106.7	107.0	24	104.8	105.1	105.5	22	104.5	104.7	104.9	17

### 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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/14	103.6	104.1	104.4	24	105.2	106.0	106.6	23	106.7	107.6	108.3	23	107.7	108.1	108.4	24	106.9	107.2	107.4	24
5/15	104.3	105.3	105.8	24	105.4	106.2	106.8	24	106.6	107.4	107.8	24	107.9	108.1	108.3	24	107.1	107.3	107.5	24
5/16	105.5	105.8	106.3	24	105.9	106.6	107.0	24	106.7	107.4	107.8	24	108.4	108.7	109.1	24	107.5	108.0	108.3	24
5/17	106.0	106.1	106.2	24	105.8	106.1	106.7	24	107.4	108.0	109.1	24	108.0	108.1	108.3	24	107.2	107.4	107.9	24
5/18	105.9	106.5	106.6	24	105.3	105.7	105.9	24	106.5	106.8	107.1	24	107.2	107.5	107.8	24	106.4	106.7	107.1	24
5/19	105.2	106.1	107.1	24	105.1	106.0	106.4	24	106.6	107.6	108.2	24	106.8	107.1	107.5	24	106.0	106.4	107.1	24
5/20	104.4	104.9	105.6	24	103.9	104.2	104.5	24	105.5	105.9	106.3	24	105.4	105.7	106.2	24	104.8	105.0	105.5	24
5/21	104.8	105.3	106.0	24	104.4	105.2	105.9	23	105.9	106.8	107.5	23	106.0	106.3	106.5	24	105.3	105.6	105.9	24
5/22	105.9	106.6	107.4	24	105.0	105.7	106.4	24	106.6	107.3	107.9	24	106.1	106.2	106.4	24	105.4	105.6	106.0	24
5/23	105.4	105.9	106.4	24	104.9	105.4	106.1	24	106.5	106.8	107.4	24	105.9	106.0	106.2	24	105.3	105.5	105.7	24
5/24	104.5	105.5	106.4	24	104.9	105.5	105.8	24	106.5	107.1	107.3	24	105.9	106.2	106.4	24	105.3	105.5	105.7	24
5/25	105.0	105.5	106.7	24	104.8	105.3	105.7	24	106.2	107.0	107.2	24	106.3	106.5	106.8	24	105.6	105.9	106.2	24
5/26	104.9	105.4	106.3	24	104.9	105.2	105.3	24	106.4	106.6	106.8	24	106.5	106.8	106.9	24	105.9	106.3	106.7	24
5/27	104.5	104.7	105.1	17	104.2	104.4	104.5	24	106.1	106.3	106.4	24	106.3	106.4	106.7	24	105.6	105.9	106.0	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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/14	108.7	112.4	116.4	24	111.8	115.9	123.2	24	108.9	109.6	110.0	24	111.3	111.6	112.2	24	110.5	111.0	111.9	24
5/15	106.9	107.5	108.1	24	110.4	111.4	114.3	24	109.8	110.5	111.0	24	112.3	112.7	113.4	24	111.4	111.9	112.3	24
5/16	107.1	107.5	108.0	24	110.7	111.5	113.3	24	110.8	112.2	113.3	24	112.9	113.4	113.7	24	112.2	112.7	114.2	24
5/17	107.3	107.7	108.1	24	109.5	110.4	112.4	24	110.8	111.0	111.4	24	112.9	113.1	113.8	24	112.4	112.6	113.3	24
5/18	106.2	106.6	107.4	24	109.3	109.9	110.9	24	109.0	110.1	111.1	24	112.0	112.4	113.0	24	110.9	111.6	112.2	24
5/19	106.2	106.6	107.1	24	109.1	109.6	110.4	24	107.8	108.6	109.5	24	111.0	112.0	112.9	24	110.9	112.2	113.6	24
5/20	105.5	105.6	106.0	24	107.8	108.3	109.4	24	106.7	107.2	107.5	24	110.7	111.7	112.9	24	109.5	110.0	111.4	24
5/21	104.6	106.1	106.5	24	108.3	109.0	109.4	24	108.0	108.7	109.3	24	110.0	110.3	112.4	24	111.0	111.2	111.9	24
5/22	105.2	105.4	105.8	23	108.9	109.4	111.9	23	107.2	107.6	108.1	24	110.3	111.1	111.9	24	109.6	110.1	110.7	24
5/23	105.0	105.4	105.8	24	108.1	108.9	109.8	24	106.0	106.4	106.7	24	109.2	109.9	110.7	24	108.0	108.2	108.5	24
5/24	105.1	105.4	105.6	24	107.9	108.5	109.3	24	107.3	107.9	108.4	24	108.8	109.0	109.4	24	108.3	108.5	108.6	24
5/25	105.5	106.1	106.3	24	108.7	109.4	110.2	24	108.3	109.4	110.3	24	109.2	109.5	111.4	24	109.1	109.3	109.7	24
5/26	105.9	106.0	106.1	24	108.8	109.4	111.1	24	107.9	108.2	108.6	24	109.7	110.2	111.4	24	109.6	109.8	109.9	24
5/27	104.9	105.9	106.2	24	108.8	109.5	112.9	24	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst			#	Pasco			#	Dworshak			#	Clrwr-Peck			#	Anatone			#			
	24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
5/14	112.9	113.4	114.1	24	110.7	111.6	112.1	24	106.7	108.0	109.4	23	102.6	103.8	104.8	23	102.1	103.0	103.7	24			
5/15	113.1	113.4	113.7	24	111.1	111.9	112.4	24	106.6	107.6	109.1	24	102.5	103.4	104.4	24	102.4	103.5	104.4	24			
5/16	114.1	114.4	114.8	24	111.8	112.3	112.6	24	106.6	107.6	108.9	24	102.5	103.4	103.9	24	102.4	103.1	104.0	24			
5/17	114.3	114.6	115.0	24	111.5	112.0	112.8	24	106.8	107.9	108.9	24	102.7	103.5	104.2	24	102.4	103.2	103.9	24			
5/18	112.7	113.3	114.1	24	109.7	110.1	110.9	24	105.8	106.3	106.6	24	101.9	102.2	102.7	24	101.6	101.8	102.0	24			
5/19	112.3	113.2	114.0	24	109.5	110.6	111.9	24	97.3	98.6	105.2	24	102.0	103.1	103.9	24	102.8	103.9	104.8	24			
5/20	111.1	111.4	111.8	24	106.2	106.7	107.5	24	95.3	95.5	96.3	24	100.9	101.3	101.6	21	102.8	103.4	103.7	24			
5/21	112.4	112.6	112.8	24	107.9	109.2	109.6	24	96.1	96.7	99.5	24	101.1	101.8	102.2	24	103.7	104.3	104.6	24			
5/22	111.3	111.8	112.3	24	109.0	109.5	110.1	24	106.3	108.7	110.0	24	102.0	102.7	103.2	24	103.3	103.6	104.1	24			
5/23	110.0	110.5	111.1	24	107.4	108.0	108.4	24	106.9	108.2	110.1	24	102.1	103.2	104.2	24	103.4	104.3	104.8	24			
5/24	110.9	111.2	111.4	24	107.6	108.9	109.5	24	106.5	107.4	109.4	24	101.8	102.3	102.7	24	103.3	103.9	104.6	24			
5/25	111.5	111.8	112.1	24	108.9	109.7	110.0	24	107.2	107.4	109.1	14	102.5	103.8	104.5	24	103.2	104.0	104.5	24			
5/26	111.8	112.0	112.3	24	109.2	109.6	109.9	24	105.0	105.0	109.0	12	101.7	102.0	102.5	24	103.0	103.3	103.5	24			
5/27	---	---	---	0	108.2	108.6	109.0	24	107.5	107.9	108.1	24	101.3	101.6	102.2	24	102.5	102.6	102.7	24			

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

Date	Clrwr-Lewiston			#	Lower Granite			#	L. Granite Tlwr			#	Little Goose			#	L. Goose Tlwr			#			
	24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
5/14	102.1	104.2	105.7	23	102.5	102.9	103.2	24	110.8	111.1	111.9	24	112.1	112.5	113.0	23	116.2	116.5	117.0	23			
5/15	102.0	103.6	104.9	23	102.8	103.0	103.3	24	111.2	111.8	113.4	24	113.5	114.1	115.3	24	116.1	116.3	116.5	24			
5/16	101.3	102.6	103.7	22	103.5	103.9	104.1	24	110.3	110.7	111.2	24	115.5	116.2	116.9	24	116.6	116.9	117.3	24			
5/17	101.1	102.3	103.1	23	103.7	103.8	104.0	24	110.2	110.4	110.7	24	116.1	116.6	117.3	24	115.8	116.4	116.8	24			
5/18	99.4	100.0	100.8	22	103.1	103.6	104.0	24	109.2	109.9	110.8	24	113.2	114.5	116.1	24	112.8	113.9	115.8	24			
5/19	101.3	102.6	103.4	24	102.4	102.8	103.9	24	109.0	109.7	110.1	24	110.2	110.7	111.3	24	112.4	113.1	113.6	24			
5/20	100.5	100.7	101.6	20	101.2	101.5	102.1	24	109.3	109.4	109.6	24	107.0	107.5	108.5	24	112.7	113.1	113.3	24			
5/21	101.4	102.0	102.7	20	102.6	103.1	103.3	24	109.7	110.0	110.2	24	106.0	106.3	106.8	24	113.1	113.5	113.7	24			
5/22	101.7	102.6	103.5	22	102.6	102.7	102.8	24	109.5	109.7	109.9	24	105.5	105.8	106.1	24	111.9	112.3	112.4	24			
5/23	102.1	103.4	104.3	23	102.6	103.0	103.1	24	109.6	109.8	110.0	24	104.8	105.2	105.5	24	111.3	111.5	111.8	24			
5/24	102.1	103.3	104.7	23	102.5	102.6	102.8	24	109.6	109.8	109.9	24	105.2	105.6	106.2	24	111.9	112.6	113.1	24			
5/25	102.5	104.2	105.2	23	103.1	103.5	104.0	24	109.7	109.8	110.1	24	106.0	106.5	107.2	24	110.8	111.8	112.6	24			
5/26	101.9	102.6	103.6	24	103.7	103.8	103.9	24	110.2	110.3	110.6	24	107.6	108.0	108.5	24	109.7	110.5	110.9	24			
5/27	100.8	101.4	102.0	24	103.4	103.8	104.0	24	110.0	110.3	110.4	24	108.6	108.9	109.2	24	110.0	110.7	111.0	24			

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

Date	Lower Mon.			#	L. Mon. Tlwr			#	Ice Harbor			#	Ice Harbor Tlwr			#	McNary-Oregon			#			
	24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
5/14	112.1	112.4	112.5	23	118.0	118.7	119.4	23	117.7	117.9	118.0	24	113.4	113.8	114.7	24	---	---	---	0			
5/15	112.8	113.4	113.8	24	118.3	119.0	119.5	24	118.5	118.9	119.2	24	113.8	114.6	117.5	24	---	---	---	0			
5/16	113.9	114.8	115.4	24	116.9	118.6	119.5	24	119.5	119.7	120.1	24	115.0	115.7	116.1	24	---	---	---	0			
5/17	116.0	116.6	117.0	24	114.3	115.3	116.5	24	119.4	119.6	119.8	24	115.6	115.9	116.4	24	---	---	---	0			
5/18	116.0	116.6	117.0	24	115.2	115.9	116.8	24	117.2	118.3	119.0	24	116.1	116.3	116.7	24	---	---	---	0			
5/19	114.0	114.4	114.9	24	114.1	114.8	115.3	24	114.2	114.5	115.2	24	116.7	117.5	119.7	24	---	---	---	0			
5/20	110.7	111.1	112.6	24	115.3	116.9	118.9	24	112.0	112.3	112.8	24	117.8	119.4	119.8	24	---	---	---	0			
5/21	111.4	112.1	112.7	24	118.9	119.0	119.5	24	111.4	111.7	112.0	24	117.9	119.2	120.1	24	---	---	---	0			
5/22	112.7	112.8	113.0	24	118.7	119.2	119.9	24	112.1	112.4	112.6	24	115.2	116.2	117.8	24	---	---	---	0			
5/23	111.4	111.8	112.3	24	118.6	119.4	119.7	24	111.9	112.1	112.3	24	114.0	114.2	114.5	24	---	---	---	0			
5/24	110.4	110.5	110.8	24	118.7	119.3	119.5	24	111.7	111.9	112.1	24	114.1	114.4	114.6	24	---	---	---	0			
5/25	110.7	111.1	111.5	24	118.6	119.0	119.9	24	112.8	113.4	113.8	24	114.5	114.8	115.0	24	---	---	---	0			
5/26	111.7	111.8	112.0	24	118.2	118.7	119.1	24	114.3	114.6	114.8	24	115.0	115.4	115.8	24	---	---	---	0			
5/27	112.0	112.3	112.5	24	117.9	118.6	119.1	24	114.9	115.4	115.8	24	113.9	115.1	115.4	24	---	---	---	0			

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	McNary-Wash			#	McNary Tlwr			#	John Day			#	John Day Tlwr			#	The Dalles			#
	24 h	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	
5/14	111.4	111.8	112.1	24	115.7	116.5	117.2	24	107.3	108.0	109.0	24	112.4	113.2	114.2	24	113.1	113.3	113.6	24
5/15	112.7	113.1	113.4	24	117.2	118.2	118.7	24	108.8	110.4	110.8	24	112.7	113.1	114.1	24	112.8	112.9	113.1	24
5/16	113.7	114.1	114.5	24	117.7	118.6	118.9	24	111.2	111.8	112.3	24	114.2	114.8	115.0	24	113.2	113.6	113.8	24
5/17	114.3	115.0	116.6	24	116.6	117.8	118.9	24	112.2	113.0	113.7	24	113.2	114.1	114.7	24	113.0	113.2	113.3	24
5/18	112.5	113.3	114.0	24	115.5	116.2	118.0	24	112.3	112.7	113.0	24	113.6	114.4	115.7	24	110.6	111.4	112.2	24
5/19	110.6	111.2	112.4	24	114.8	115.5	115.9	24	111.6	112.0	112.7	24	115.0	115.7	116.1	24	111.8	113.0	113.6	24
5/20	108.1	108.4	109.0	24	114.5	115.0	115.3	24	110.3	110.5	110.8	24	114.2	116.2	116.8	24	110.1	110.6	111.3	24
5/21	109.1	109.8	111.0	24	114.6	114.9	115.2	24	110.3	110.5	110.7	24	117.6	118.1	118.4	24	112.2	113.0	113.4	24
5/22	108.5	108.8	109.3	24	114.6	114.9	115.3	24	108.3	108.8	109.6	24	113.8	114.9	117.2	24	109.7	110.5	112.2	24
5/23	108.0	108.2	108.3	24	113.6	113.7	114.1	24	106.5	106.6	106.9	24	112.9	113.4	113.8	24	107.1	107.5	107.9	24
5/24	107.9	108.2	108.3	24	113.8	114.2	114.4	24	106.0	106.3	106.6	24	114.5	115.2	115.5	24	108.2	108.9	109.5	24
5/25	108.7	109.0	109.8	24	113.9	114.5	115.3	24	106.9	107.5	107.9	24	112.9	113.2	113.3	24	109.5	109.6	109.8	24
5/26	109.7	110.0	110.2	24	114.7	115.4	116.7	24	107.1	107.2	107.5	24	113.6	114.0	114.9	24	109.3	109.6	109.7	24
5/27	110.0	110.4	110.6	24	114.2	114.7	115.6	24	106.8	107.1	107.3	24	113.8	114.4	115.6	24	109.0	109.1	109.2	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	
5/14	115.5	116.1	116.6	24	113.9	115.0	115.3	24	115.6	116.6	117.1	24	114.3	116.2	117.1	24	116.4	116.5	117.0	24
5/15	114.7	115.2	115.6	24	115.6	116.1	116.5	24	116.7	117.2	117.6	24	115.9	117.8	118.8	24	115.6	116.1	116.4	24
5/16	115.1	115.8	116.6	24	115.6	116.0	116.3	24	116.4	116.8	117.2	24	116.6	117.5	118.3	24	115.2	115.3	115.4	24
5/17	115.5	116.3	116.9	24	115.7	116.0	116.5	24	116.3	116.9	117.6	24	116.0	117.3	118.8	24	115.6	115.8	116.0	24
5/18	113.3	114.1	114.4	24	113.2	113.9	114.9	24	114.4	114.8	115.2	24	113.8	114.4	114.8	24	115.2	115.5	116.0	24
5/19	115.4	116.3	117.3	24	111.9	112.2	112.5	24	113.1	113.5	113.9	24	111.6	112.0	112.5	24	116.1	116.3	116.7	24
5/20	114.2	114.6	114.9	24	110.9	111.9	112.5	24	113.6	114.6	115.6	24	109.6	110.7	111.4	24	116.1	117.2	117.8	24
5/21	116.9	117.9	118.4	24	113.9	114.3	114.7	24	115.4	115.5	115.7	24	112.8	114.0	114.5	24	118.5	118.7	118.9	24
5/22	115.8	116.5	117.6	24	112.0	112.7	113.5	24	115.1	115.4	115.6	24	112.9	113.4	114.0	24	117.9	118.2	118.6	24
5/23	114.2	114.4	114.6	24	110.2	110.3	110.5	24	114.8	115.2	115.8	24	112.3	112.8	113.1	24	117.4	117.5	117.6	24
5/24	114.9	115.4	115.8	24	110.8	111.5	111.7	24	115.0	115.3	115.5	24	112.9	113.9	114.6	24	117.7	118.1	118.4	24
5/25	116.0	116.5	117.0	24	113.2	114.1	114.4	24	115.5	116.1	116.2	24	112.6	113.7	114.0	24	117.9	118.0	118.1	24
5/26	115.6	116.1	116.4	24	113.9	114.1	114.3	24	116.6	116.8	117.0	24	114.3	115.0	115.4	24	117.2	117.3	117.5	24
5/27	115.3	115.8	116.2	24	113.1	113.4	113.6	24	116.4	116.7	117.0	24	114.8	115.7	116.6	24	117.3	117.5	117.6	24

## 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>											
	05/17/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/24/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>											
	05/17/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/24/10	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
<b>Lower Monumental Dam</b>											
	05/19/10	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	05/26/10	Chinook + Steelhead	100	5	5	5.00%	0.00%	5	0	0	0
<b>McNary Dam</b>											
	05/20/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/24/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	05/18/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/22/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/25/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	05/18/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/20/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/25/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/28/2010 9:41

### Two-Week Summary of Passage Indices

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

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

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

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

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/14/2010	*	32	194	422	45	59,096	37,005	1,035	482	---	27,672	65,956
05/15/2010	*	44	172	262	69	60,049	30,305	3,164	215	108,450	17,737	48,269
05/16/2010	*	56	157	228	42	41,714	26,720	1,366	179	---	15,988	35,938
05/17/2010	*	30	79	202	29	28,945	32,840	11,236	209	80,434	16,661	41,139
05/18/2010	*	25	87	518	164	40,741	20,507	29,024	321	---	29,387	36,604
05/19/2010	*	---	---	344	246	56,446	68,725	60,950	430	273,940	45,843	40,089
05/20/2010	*	---	---	75	142	71,125	127,501	45,333	326	---	26,820	62,737
05/21/2010	*	---	---	156	173	85,493	72,664	42,913	370	277,936	44,674	72,615
05/22/2010	*	---	28	86	200	49,236	51,591	45,085	331	---	58,879	59,243
05/23/2010	*	---	54	62	71	31,872	19,205	33,609	360	119,608	43,443	76,330
05/24/2010	*	---	31	33	25	18,456	16,221	15,175	277	---	19,971	83,524
05/25/2010	*	36	34	0	684	17,880	13,216	7,343	188	113,327	19,845	100,306
05/26/2010	*	33	33	0	983	11,434	10,576	10,875	173	---	15,804	60,458
05/27/2010	*	18	---	0	373	8,370	13,763	3,504	234	42,358	12,889	35,331
05/28/2010	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>274</b>	<b>869</b>	<b>2,388</b>	<b>3,246</b>	<b>580,857</b>	<b>540,839</b>	<b>310,612</b>	<b>4,095</b>	<b>1,016,053</b>	<b>395,613</b>	<b>818,539</b>
<b># Days:</b>		<b>8</b>	<b>10</b>	<b>14</b>	<b>14</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>34</b>	<b>87</b>	<b>171</b>	<b>232</b>	<b>41,490</b>	<b>38,631</b>	<b>22,187</b>	<b>293</b>	<b>145,150</b>	<b>28,258</b>	<b>58,467</b>
<b>YTD</b>		<b>56,077</b>	<b>79,825</b>	<b>27,916</b>	<b>7,689</b>	<b>2,397,785</b>	<b>1,113,927</b>	<b>360,114</b>	<b>9,669</b>	<b>1,879,118</b>	<b>810,366</b>	<b>1,975,728</b>

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)	
05/14/2010	*	0	0	1	28	0	0	15	---	---	0	162,815
05/15/2010	*	0	0	5	25	161	0	13	0	---	0	23,696
05/16/2010	*	0	0	4	27	158	0	7	---	---	0	9,093
05/17/2010	*	0	3	1	20	0	0	5	170	---	0	6,462
05/18/2010	*	0	0	6	41	288	0	24	13	---	29	5,649
05/19/2010	*	---	---	0	87	0	0	23	2,465	---	30	5,439
05/20/2010	*	---	---	0	78	1,252	0	32	---	---	95	7,480
05/21/2010	*	---	---	0	122	3,706	0	42	3,046	---	401	6,252
05/22/2010	*	---	0	0	160	4,040	0	140	67	---	575	6,090
05/23/2010	*	---	0	0	101	2,107	0	295	57	4,070	875	6,509
05/24/2010	*	---	0	0	58	1,628	0	304	72	---	477	3,350
05/25/2010	*	0	0	0	51	1,116	0	73	4,337	---	833	5,872
05/26/2010	*	0	0	0	69	706	929	63	---	---	1,035	4,827
05/27/2010	*	0	---	0	94	1,702	2,939	163	117	5,757	1,552	3,425
05/28/2010	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>3</b>	<b>17</b>	<b>961</b>	<b>16,864</b>	<b>3,868</b>	<b>926</b>	<b>599</b>	<b>19,845</b>	<b>5,902</b>	<b>256,959</b>
<b># Days:</b>		<b>8</b>	<b>10</b>	<b>14</b>	<b>14</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>1</b>	<b>69</b>	<b>1,205</b>	<b>276</b>	<b>66</b>	<b>43</b>	<b>2,835</b>	<b>422</b>	<b>18,354</b>
<b>YTD</b>		<b>0</b>	<b>41</b>	<b>28</b>	<b>1,171</b>	<b>28,340</b>	<b>3,940</b>	<b>1,068</b>	<b>2,028</b>	<b>22,008</b>	<b>5,960</b>	<b>1,807,897</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)	
05/14/2010	*	0	0	0	2	842	717	21	255	---	3,300	18,449
05/15/2010	*	0	0	0	1	482	1,719	134	111	1,194	1,138	10,093
05/16/2010	*	0	0	0	1	158	572	72	111	---	1,728	10,825
05/17/2010	*	0	0	0	0	754	859	149	125	852	2,299	12,241
05/18/2010	*	0	0	0	2	1,582	287	293	109	---	3,057	11,072
05/19/2010	*	---	---	0	0	2,572	4,009	886	391	1,954	2,529	9,904
05/20/2010	*	---	---	0	1	6,011	7,012	0	430	---	1,342	16,408
05/21/2010	*	---	---	0	2	5,683	4,291	397	634	2,200	2,074	13,465
05/22/2010	*	---	0	0	0	3,030	3,439	562	1,168	---	3,906	9,689
05/23/2010	*	---	0	0	0	2,371	1,146	442	2,313	5,601	1,034	10,763
05/24/2010	*	---	0	0	0	271	573	152	5,086	---	526	13,846
05/25/2010	*	0	0	0	0	0	1,143	160	3,361	5,020	950	12,477
05/26/2010	*	0	0	0	0	847	1,429	485	3,020	---	561	7,092
05/27/2010	*	0	---	0	0	142	502	0	4,217	3,725	722	6,691
05/28/2010	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>24,745</b>	<b>27,698</b>	<b>3,753</b>	<b>21,331</b>	<b>20,546</b>	<b>25,166</b>	<b>163,015</b>
<b># Days:</b>		<b>8</b>	<b>10</b>	<b>14</b>	<b>14</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>1</b>	<b>1,768</b>	<b>1,978</b>	<b>268</b>	<b>1,524</b>	<b>2,935</b>	<b>1,798</b>	<b>11,644</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>	<b>31,181</b>	<b>31,857</b>	<b>4,479</b>	<b>23,000</b>	<b>33,642</b>	<b>46,009</b>	<b>412,080</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)	
05/14/2010	*	39	1,478	151	223	22,561	25,883	2,630	241	---	13,560	24,907
05/15/2010	*	110	1,636	81	328	20,552	16,976	3,778	212	9,220	10,481	26,768
05/16/2010	*	103	2,237	57	132	22,595	12,717	2,913	261	---	7,150	23,814
05/17/2010	*	111	1,892	89	204	19,146	23,711	5,841	453	19,454	6,817	24,563
05/18/2010	*	83	1,332	243	570	20,947	14,626	8,763	832	---	6,316	15,139
05/19/2010	*	---	---	253	758	38,959	27,775	14,084	1,173	18,015	6,464	15,580
05/20/2010	*	---	---	36	1,211	65,490	180,876	7,394	1,052	---	7,393	11,823
05/21/2010	*	---	---	151	179	130,216	86,685	22,516	1,339	16,084	7,430	18,995
05/22/2010	*	---	348	65	83	92,411	107,483	26,124	1,129	---	15,594	18,548
05/23/2010	*	---	345	46	171	57,949	60,762	18,573	1,007	14,082	13,012	32,695
05/24/2010	*	---	209	31	106	48,583	28,041	13,354	699	---	10,130	27,469
05/25/2010	*	134	195	0	150	49,493	28,146	6,704	531	21,957	6,118	24,954
05/26/2010	*	159	140	0	100	19,198	41,663	9,003	185	---	5,362	11,683
05/27/2010	*	102	---	0	36	23,409	65,878	6,846	237	16,092	7,046	22,675
05/28/2010	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>841</b>	<b>9,812</b>	<b>1,203</b>	<b>4,251</b>	<b>631,509</b>	<b>721,222</b>	<b>148,523</b>	<b>9,351</b>	<b>114,904</b>	<b>122,873</b>	<b>299,613</b>
<b># Days:</b>		<b>8</b>	<b>10</b>	<b>14</b>	<b>14</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>105</b>	<b>981</b>	<b>86</b>	<b>304</b>	<b>45,108</b>	<b>51,516</b>	<b>10,609</b>	<b>668</b>	<b>16,415</b>	<b>8,777</b>	<b>21,401</b>
<b>YTD</b>		<b>4,137</b>	<b>26,171</b>	<b>4,050</b>	<b>11,762</b>	<b>1,703,442</b>	<b>1,169,546</b>	<b>260,717</b>	<b>13,672</b>	<b>390,485</b>	<b>443,985</b>	<b>681,473</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)
05/14/2010 *	23	0	0	0	0	0	0	161	---	19,109	5,535
05/15/2010 *	2	0	0	3	0	0	0	73	63,851	7,292	6,582
05/16/2010 *	2	0	0	4	0	0	0	64	---	13,711	9,526
05/17/2010 *	0	0	0	4	0	0	0	65	36,475	21,503	3,612
05/18/2010 *	1	0	0	3	575	0	0	121	---	41,212	10,846
05/19/2010 *	---	---	0	5	257	716	0	349	50,217	21,558	21,926
05/20/2010 *	---	---	0	20	376	3,148	0	501	---	24,021	33,540
05/21/2010 *	---	---	0	48	988	858	0	1,035	20,990	18,867	38,953
05/22/2010 *	---	0	0	58	0	0	140	2,172	---	16,373	21,316
05/23/2010 *	---	0	0	20	263	0	147	1,933	12,380	8,749	17,728
05/24/2010 *	---	0	0	6	0	430	0	7,730	---	3,631	9,603
05/25/2010 *	27	0	0	3	279	286	160	7,978	20,735	4,717	8,318
05/26/2010 *	12	0	0	6	423	214	162	2,330	---	3,535	5,142
05/27/2010 *	5	---	0	6	426	287	0	2,106	96,361	4,636	5,170
05/28/2010 *	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>72</b>	<b>0</b>	<b>0</b>	<b>186</b>	<b>3,587</b>	<b>5,939</b>	<b>609</b>	<b>26,618</b>	<b>301,009</b>	<b>208,914</b>	<b>197,797</b>
<b># Days:</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>14</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>9</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>256</b>	<b>424</b>	<b>44</b>	<b>1,901</b>	<b>43,001</b>	<b>14,922</b>	<b>14,128</b>
<b>YTD</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>186</b>	<b>3,604</b>	<b>5,939</b>	<b>609</b>	<b>33,552</b>	<b>491,507</b>	<b>307,115</b>	<b>241,334</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:

5/28/10 9:42 AM

05/14/10 TO 05/28/10

Site	Data	Species					Grand Total
		CH0	CH1	CO	ST	SO	
<b>LGR</b>	Sum of NumberCollected	12,900	419,951	19,000	474,349	2,700	928,900
	Sum of NumberBarged	12,883	399,196	18,999	465,375	2,700	899,153
	Sum of NumberBypassed	0	20,296	0	8,852	0	29,148
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	16	0	6	0	22
	Sum of FacilityMorts	17	350	1	111	0	479
	Sum of ResearchMorts	0	93	0	5	0	98
	Sum of TotalProjectMorts	17	459	1	122	0	599
<b>LGS</b>	Sum of NumberCollected	2,700	377,780	19,350	503,747	4,150	907,727
	Sum of NumberBarged	2,699	377,689	19,350	503,657	4,150	907,545
	Sum of NumberBypassed	1	0	0	0	0	1
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	10	0	7	0	17
	Sum of FacilityMorts	0	81	0	83	0	164
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	91	0	90	0	181
<b>LMN</b>	Sum of NumberCollected	620	230,969	2,665	104,365	400	339,019
	Sum of NumberBarged	619	230,913	2,665	104,219	399	338,815
	Sum of NumberBypassed	0	98	0	102	0	200
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	6	0	5	0	11
	Sum of FacilityMorts	0	152	1	139	1	293
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	158	1	144	1	304
<b>MCN</b>	Sum of NumberCollected	11,703	598,611	12,108	67,667	177,278	867,367
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	11,701	598,402	12,099	67,636	177,225	867,063
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	39	1	1	13	54
	Sum of FacilityMorts	2	170	8	30	40	250
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	209	9	31	53	304
Total Sum of NumberCollected		27,923	1,627,311	53,123	1,150,128	184,528	3,043,013
Total Sum of NumberBarged		16,201	1,007,798	41,014	1,073,251	7,249	2,145,513
Total Sum of NumberBypassed		11,702	618,796	12,099	76,590	177,225	896,412
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		0	71	1	19	13	104
Total Sum of FacilityMorts		19	753	10	363	41	1,186
Total Sum of ResearchMorts		0	93	0	5	0	98
Total Sum of TotalProjectMorts		19	917	11	387	54	1,388

**YTD Transportation Summary**

Source: Fish Passage Center

Updated:

5/28/10 9:42 AM

TO: 05/28/10

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	20,258	1,588,427	23,050	2,710	1,160,678	2,795,123
	Sum of NumberBarged	19,519	1,395,275	23,045	2,700	1,116,126	2,556,665
	Sum of NumberBypassed	700	191,481	0	10	44,357	236,548
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	51	0	0	11	64
	Sum of FacilityMorts	37	1,205	5	0	167	1,414
	Sum of ResearchMorts	0	415	0	0	17	432
	Sum of TotalProjectMorts	39	1,671	5	0	195	1,910
<b>LGS</b>	Sum of NumberCollected	2,750	777,462	22,250	4,150	816,472	1,623,084
	Sum of NumberBarged	2,748	695,939	22,250	4,150	756,891	1,481,978
	Sum of NumberBypassed	1	81,373	0	0	59,473	140,847
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	25	0	0	8	34
	Sum of FacilityMorts	0	125	0	0	100	225
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	150	0	0	108	259
<b>LMN</b>	Sum of NumberCollected	660	245,434	2,875	400	137,162	386,531
	Sum of NumberBarged	659	244,031	2,875	399	132,289	380,253
	Sum of NumberBypassed	0	1,433	0	0	4,816	6,249
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	8	0	0	7	15
	Sum of FacilityMorts	0	160	1	1	149	311
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	168	1	1	156	326
<b>MCN</b>	Sum of NumberCollected	12,976	1,104,910	19,790	289,022	229,352	1,656,050
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	12,971	1,104,528	19,778	288,939	229,251	1,655,467
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	104	2	30	14	150
	Sum of FacilityMorts	5	278	10	53	87	433
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	5	382	12	83	101	583
Total Sum of NumberCollected		36,644	3,716,233	67,965	296,282	2,343,664	6,460,788
Total Sum of NumberBarged		22,926	2,335,245	48,170	7,249	2,005,306	4,418,896
Total Sum of NumberBypassed		13,672	1,378,815	19,778	288,949	337,897	2,039,111
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		3	188	2	30	40	263
Total Sum of FacilityMorts		42	1,768	16	54	503	2,383
Total Sum of ResearchMorts		0	415	0	0	17	432
Total Sum of TotalProjectMorts		45	2,371	18	84	560	3,078

Cumulative Adult Passage at Mainstem Dams Through: 05/27

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	05/27	234823	11677	108754	64340	162654	16476	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/27	174449	10138	82692	49929	113685	12540	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/27	161847	10325	65579	44777	93102	10673	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/27	132784	7233	55115	36411	82200	9248	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/27	89971	5096	38827	21775	53354	5327	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/27	85565	4775	46210	11171	50218	3868	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/27	79780	4068	30957	15753	44407	4114	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/26	76090	4519	27770	18518	43047	4643	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/26	25965	690	8641	2042	16142	533	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/26	24389	864	7043	3148	11964	787	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/26	7329	279	3032	480	4482	185	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/26	5024	279	1537	358	2301	93	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/26	41670	917	13702	865	-	-	-	-	-	-	-	-	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							
BON	0	0	0	0	0	0	16	6	3	7091	4125	3954	1902
TDA	0	0	0	0	0	0	6	1	0	2346	1261	1300	1142
JDA	0	0	0	0	0	0	0	0	0	2528	3022	2913	1435
MCN	0	0	0	0	0	0	0	5	0	2310	2386	2006	1231
IHR	0	0	0	0	0	0	0	0	0	3062	3083	2268	1275
LMN	0	0	0	0	0	0	0	0	0	4067	4709	2579	2183
LGS	0	0	0	0	0	0	0	0	0	3105	5371	2683	1570
LGR	0	0	0	0	0	0	0	0	0	10444	10775	8524	4157
PRD	0	0	0	0	0	0	0	0	9	86	52	16	0
RIS	0	0	0	0	0	0	0	0	1	112	95	62	77
RRH	0	0	0	0	0	0	0	0	0	343	402	198	261
WEL	0	0	0	0	0	0	0	0	0	89	66	40	72
WFA	0	0	0	0	-	-	-	-	-	17133	7688	-	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: 05/28/2010

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