



Fish Passage Center

Weekly Report #11 - 13

June 10, 2011

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 102% and 235% of average at individual sub-basins over May. Precipitation above The Dalles has been 153% of average over May. Over the 2011 water year, precipitation has ranged between 109% and 131% 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 2011 May 1-30, 2011		Water Year 2011 October 1, 2010 to May 30, 2011	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	2.54	118	21.49
SNAKE RIVER ABOVE ICE HARBOR	2.96	162	17.83	131
Columbia Above The Dalles	2.92	153	22.21	125
Kootenai	2.55	119	21.66	117
Clark Fork	2.30	116	15.06	123
Flathead	2.42	102	21.01	130
Pend Oreille/ Spokane	3.25	129	30.65	123
Central Washington	1.75	235	8.48	116
SNAKE RIVER PLAIN	2.22	155	11.28	131
Salmon/Boise/ Payette	2.54	147	18.72	116
Clearwater	4.15	141	31.28	129
SW Washington Cascades/Cowlitz	4.76	130	68.56	110
Willamette Valley	4.04	118	58.50	109

Table 2 displays the May Final and June Final runoff volume forecasts for multiple reservoirs. The June Final forecast at The Dalles between January and July is 141000 Kaf (131% 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)	119	128000	131	141000
Grand Coulee (Jan-July)	117	73700	124	78300
Libby Res. Inflow, MT (Apr-Aug)	123	7660 8165*	127	7930 8099*
Hungry Horse Res. Inflow, MT (Jan-July)	149	3310	153	3410
Lower Granite Res. Inflow (Apr- July)	132	28400	156	33700
Brownlee Res. Inflow (Apr-July)	144	9060	177	11200
Dworshak Res. Inflow (Apr-July)	130	3440 3772*	143	3770 3813*

* 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 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 179.4 Kcfs over the last week and 131.4 Kcfs over the spring season.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives are 260 Kcfs at McNary Dam (began April 10th) and 135 Kcfs at Priest Rapids Dam (began April 10th). Flows at McNary Dam have averaged 490.1 Kcfs over the last week and 350.8 Kcfs over the spring season. Flows at Priest Rapids Dam have averaged 320.2 Kcfs over the last week and 212.4 Kcfs over the spring season.

Grand Coulee Reservoir is at 1242.3 feet (6-9-11) and has refilled 7.3 feet over the last week. Outflows at Grand Coulee have ranged between 203.6 and 264.8 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2385.0 feet (6-9-11) and has refilled 14.4 feet last week. Outflows at Libby Dam have been 17.0-23.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3513.4 feet (6-9-11) and has refilled 12.2 feet last week. Outflows at Hungry Horse have been 2.0-8.0 Kcfs last week.

Dworshak is currently at an elevation of 1558.0 feet (6-9-11) and has refilled 15.4 feet last week. Outflows from Dworshak have ranged between 6.8-10.2 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2060.4 feet on June 9th, 2011 refilling 10.2 feet last week. Over the last week, outflows at Brownlee have ranged between 47.4-49.9 Kcfs.

Spill:

Spill for fish passage began on April 3rd at the lower Snake River projects, and on April 10th at the lower Columbia River projects.

Continued high flows in the Snake and Columbia rivers have resulted in uncontrolled spill levels throughout the FCRPS, as flows peak and the system is operated for flood control.

A small amount of spill occurred at Dworshak Dam on June 3rd-5th. Otherwise, the project has been refilling. All units are now operational at Lower Granite Dam. Over the past week, daily average flows at Lower Granite Dam have ranged from 158.2 to 211.2 Kcfs and spill has ranged from 50.1 to 99.5 Kcfs. At

Little Goose Dam, spill has exceeded the 30% level as specified in the Court Order. Daily average spill at Little Goose dam has ranged from 61.5 Kcfs to 111.4 Kcfs. At Lower Monumental Dam spill was in excess of the Court Order and ranged from 43.0 to 104.0 Kcfs.

Beginning April 28th, the Court Order spill operations at Ice Harbor called for an alternating schedule of 45 Kcfs spill during the day and gas cap spill at night versus 30% if instantaneous flow, on 2-day alternating blocks until mid-July. Over the past week spill levels have exceeded the Court Order and, since May 22nd spill has occurred as all flow in excess of powerhouse or generation capacity. Spill has ranged from 81.1 to 134.9 Kcfs.

Project	Day/Night Spill
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3-April 27: 45 Kcfs/gas cap April 28--mid-July: 45 Kcfs/gas cap vs. 30%/30%

Spill for fish passage at the Lower Columbia projects began on April 10th. However, due to high flows spill is also in excess of the Court Ordered spill for fish passage in the lower Columbia. In addition, spill is occurring at Grand Coulee Dam, which is being operated for flood control downriver. The COE is targeting a flood control flow of 480 Kcfs at The Dalles Dam. This flow exceeds the 7Q10 flow, above which Oregon and Washington's water quality standards do not apply.

Spill at McNary Dam has been in excess of the Court Order as a result of flows in excess of hydraulic capacity and unit outages. Spill at McNary Dam has ranged between 67.8% and 70.0% of daily average flow (daily average spill ranged from 329.9 to 356.0 Kcfs) at this project. The planned test at John Day Dam started on the evening of April 27th. Under this test, spill at John Day Dam alternates between 30% and 40% of instantaneous flow, roughly every two days. Spill levels at John Day have exceeded the Court Order this week (daily average spill ranged from 44.7% to 48.4% of total river flow). At The Dalles Dam, spill exceeded the 40% objective this past week, ranging

from 46.9% to 48.9%). Finally, at Bonneville Dam, spill exceeded the 100 Kcfs in the Court Order over the past week and ranged from a daily average of 282.7 Kcfs to 296.3 Kcfs.

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

Most points of compliance, with the exception of the Lower Granite Dam forebay monitor, were exceeding the 115/120% TDG levels this week. The Lower Granite tailrace was in compliance with the 120% waiver limit from June 1st to June 3rd. The Little Goose forebay was in compliance with the 115% waiver limit from June 2nd to June 4th and June 7th to June 8th. Gas Bubble Trauma monitoring at Little Goose Dam resumed this week, with an examination on June 6th, which revealed GBT in 1% of the fish examined. Incidences of GBT at Lower Monumental Dam continued to decrease this week, with only 1% of fish examined showing signs of GBT on the June 8th sample at this site. Gas Bubble Trauma examinations at McNary Dam were done on June 3rd, June 5th, and June 9th. These examinations revealed 5%, 0%, and 1% GBT, respectively. Incidences of GBT at Rock Island Dam has remained high this week. The examination on June 7th revealed a 40% incidence of GBT while the sample on June 9th revealed a 31% incidence of GBT. Total dissolved gas levels in the Mid Columbia River have generally been higher than observed in the Snake and lower Columbia rivers over the past week.

The action criteria for GBT with Rank 1 signs of GBT is 15% of the population. However, with the present flows and spill levels the system is in an uncontrolled state and no action would be possible if the criteria were exceeded.

Smolt Monitoring:

Smolt monitoring was ongoing at all SMP sites this past week. There was some concern that due if flows were too high barges may not be able to load fish at Lower Granite and Lower Monumental dams. But the sites both continued fish collections and transportation

was not disrupted. Spring migrant passage indices declined at all sites over the past week, while subyearling Chinook indices increased at Columbia River sites but decreased at Snake River sites.

Subyearling Chinook smolts continued to predominate in the sample this week as at Lower Granite Dam even though the numbers declined. Steelhead, the second most predominant species, had passage numbers continue to decline. Subyearling indices averaged 23,000 per day this week compared to 40,000 per day last week. All spring migrant indices decreased this week, with steelhead indices averaging 13,000 per day this week compared to 23,000 last week; yearling Chinook average weekly indices dropped from 6,000 to 2,000; sockeye indices also dropped from 1,400 per day last week to 800 this week.

Sampling was limited at Little Goose Dam from May 22 to May 28 due to a blown transformer. Repairs on the transformer were completed by June 2, so that operations have gone back to normal. Prior to that date samples were biased due to minimal powerhouse operations. The project spilled about 95% of flows so that very few fish were collected during the outage. Monitoring Lower Monumental Dam found similar patterns to those at Lower Granite Dam, with passage indices for all species declining and subyearling Chinook predominating in collections followed by steelhead.

Sampling at Rock Island Dam is ongoing. Collections at the site have declined rapidly over the past week particularly for coho, sockeye and yearling Chinook. Coho have continued predominated in the sample in the past week with the average index at 900 compared to 2,000 per day last week. Yearling Chinook, steelhead and sockeye collections declined in the past week, while subyearling Chinook indices began to increase. The average daily passage index last week was 330 for subyearling Chinook up from 290 the previous week; the steelhead index dropped to 420 this week from 530 per day last week; yearling Chinook indices decreased this week from an average of 290 per day last week to nearly 60 per day this week.

Sampling at McNary Dam is every other day in the spring. Normal sampling began on April 13. Subyearling Chinook predominated in passage at the site this past week, with the average passage index for subyearling Chinook at 42,000 per day this week compared to 36,000 last week. Indices for

coho remained relatively steady this week at 9,300 per day, while other spring migrant indices decreased. The yearling Chinook index averaged 11,000 per day this week compared to 35,000 per day last week. For steelhead the index averaged 2,400 and for sockeye the index was at 4,000 per day this week compared to 9,300 per day last week.

At John Day Dam passage indices declined for all spring migrant species over the past week. And for the first time this season subyearling Chinook predominated in the sample. The passage index for subyearlings averaged just under 26,000 per day this week compared to 8,000 per day last week. Lamprey collections have declined over the past week. The lamprey collection averaged about 7,000 per day this week compared to 10,000 per day last week.

At Bonneville Dam the screens have been removed at Powerhouse 2 so that collections are lower than normal. Due to debris and high flows the COE was unable to keep the screens clean so that they removed the screens until flows subside. Given the biased collections the largest collections over the past week have been subyearling Chinook.

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. However, the releases of surrogate fall Chinook subyearlings into Couse Creek that began in May were scheduled to end this week. In all, approximately 230,000 fall Chinook surrogates were scheduled to be released into Couse Creek, all of which were unmarked (i.e., no fin clips or coded-wire tags). These fall Chinook surrogates are 100% PIT-tagged. Several releases of subyearling fall Chinook that began in past weeks are scheduled to end over the next two weeks. In addition to these on-going releases, releases of fall Chinook surrogates to the Clearwater River are scheduled to begin on or around June 20th. In all, 98,000 fall Chinook surrogates are scheduled for release into the Clearwater River this year. Like the Snake River surrogates, these Clearwater River surrogates are 100% PIT-tagged, but otherwise unmarked. There are no other new releases scheduled for this zone over the next two weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. A release of nearly 6.8 million subyearling fall

Chinook from Priest Rapids Hatchery was scheduled to begin this week. Approximately 57% of these fall Chinook subyearlings are unmarked. This release is scheduled to run through June 20th. Several releases of juvenile coho that began in past weeks were scheduled to end this week. These coho releases were part of the Yakama Tribal program to reintroduce coho into the Methow, Wenatchee, and Yakima rivers. Several more of these coho releases are scheduled to end over the next two weeks. Beginning on or around June 15th, approximately 3.45 million subyearling fall Chinook will be released from Ringgold Hatchery, into the Mid-Columbia River. This is a volitional release that is scheduled to run through the end of June. There are no other new releases scheduled for this zone over the next two weeks.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. There were no new releases of juvenile salmonids scheduled to begin this week. Approximately 4.5 million subyearling fall Chinook are scheduled for release into the Little White Salmon River, beginning on or around June 16th. There are no other releases of juvenile salmonids scheduled for this zone over the next two weeks.

Adult Passage:

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 1,842 and 2,924 adult summer Chinook in the last week. The 2011 summer Chinook count of 20,903 is about 94.5% of the 2010 count while being 1.30 times greater than the 10 year average. The 2010 Bonneville Dam summer Chinook jack count of 9,479 is 4.30 times greater than the 2010 count and 4.13 times greater than the 10 year average count.

At Willamette Falls 23,324 adult spring Chinook have been counted so far this year. The 2011 adult spring Chinook count at Willamette Falls is about 52.2% of the 2010 count of 44,642. At McNary Dam 101,245 adult spring Chinook have been counted. The 2011 adult spring Chinook count at McNary Dam is about 65.9% of the 2010 count and 99.2% of the 10 year average. The 2011 McNary Dam spring Chinook jack count of 31,750 is about 3.45 times greater than the 2010 count and 2.84 times greater than the 10 year average count. The 2011 adult spring Chinook count at Rock Island Dam of 11,616 is about 42.1% of the 2010 count and 74.3% of the 10 year average.

The 2010 adult spring Chinook count at Lower Granite Dam of 54,193 is about 64.8% of the 2010 count and 92.7% of the 10 year average. The 2010 Lower Granite spring Chinook jack count of 17,267 is about 3.07 times greater than the 2010 count and 2.61 times greater than the 10 year average.

The Bonneville Dam 2011 steelhead count of 4,822 is about 51.6% of the 2010 count of 9,341 while being about 75.3% of the 10 year average count of 6,404. In the Snake River, daily adult steelhead counts at Lower Granite Dam ranged from 1 to 5 adults per day last week. This year's Lower Granite steelhead count of 12,309 is about 1.17 times greater than the 2010 count of 10,479 and 1.32 times greater than the 10 year average of 9,350. The 2011 Lower Granite wild steelhead count as of June 9th was 5,779. At Willamette Falls Dam, the 2011 count for steelhead was 16,695, as of June 7th. This year's steelhead count is about 76.7% of the 2010 count of 21,755 at Willamette Falls Dam for the same date range.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 6 and 122 last week. The 2011 adult sockeye count at Bonneville Dam of 360 is about 13.6% of the 2010 count of 2,645 and about 19.2% of the 10 year average count of 1,874.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	5/27/2011		to		06/09/11				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH0	SP	2012	300,000	06-01-11	06-01-11	Selway River	Clearwater River M F
Idaho Dept. of Fish and Game Total					300,000				
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2011	230,000	05-16-11	06-06-11	Couse Creek	Snake River
National Marine Fisheries Service Total					230,000				
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2011	400,000	05-23-11	05-31-11	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2011	500,000	05-22-11	05-31-11	Cpt John Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2011	500,000	05-25-11	05-31-11	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	200,000	06-01-11	06-15-11	Cedar Flats Acclim.	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	200,000	06-01-11	06-15-11	Lukes Gulch Acclim.	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	300,000	05-20-11	06-15-11	Clearwater River	Snake River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	500,000	06-01-11	06-15-11	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe Total					2,600,000				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2011	244,342	04-04-11	06-01-11	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife Total					244,342				
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2011	16,608	05-12-11	05-31-11	Parkdale Acclim Pond	Hood River
Warm Springs Tribe Total					16,608				
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2011	200,000	05-20-11	05-31-11	Couse Creek	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2011	200,000	05-20-11	05-31-11	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2011	6,785,432	06-05-11	06-20-11	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					7,185,432				
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,223	05-07-11	06-16-11	Coulter Creek	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,322	05-07-11	06-12-11	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,331	05-07-11	06-07-11	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,339	04-29-11	06-07-11	Beaver Creek Acclim Pond	Wenatchee River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	37,000	04-20-11	06-01-11	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	79,015	04-15-11	06-01-11	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,175	04-20-11	06-01-11	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,942	04-20-11	06-01-11	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	90,498	04-20-11	06-01-11	Easton Pond	Yakima River
Yakama Tribe	Klickitat Hatchery	CH0	FA	2011	4,000,000	06-01-11	06-01-11	Klickitat Hatchery	Klickitat River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	50,000	04-20-11	06-01-11	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,000	04-20-11	06-01-11	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,297	04-20-11	06-01-11	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,671	04-15-11	06-01-11	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	245,455	04-15-11	06-01-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2011	27,365	05-07-11	06-12-11	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	29,279	04-29-11	06-07-11	Beaver Creek Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	49,379	04-29-11	06-14-11	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2011	60,901	05-07-11	06-07-11	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	89,403	05-08-11	06-02-11	Twisp Acclim Pond	Methow River
Yakama Tribe Total					5,513,595				
Grand Total					16,089,977				

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	6/10/2011		to		6/23/2011				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
National Marine Fisheries Service National Marine Fisheries Service Total	Lyons Ferry Hatchery	CH0	FA	2011	98,000	06-20-11	07-08-11	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	200,000	06-01-11	06-15-11	Cedar Flats Acclim.	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	200,000	06-01-11	06-15-11	Lukes Gulch Acclim.	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	300,000	05-20-11	06-15-11	Clearwater River	Snake River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	500,000	06-01-11	06-15-11	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe Total					1,200,000				
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2011	2,000,000	06-16-11	06-16-11	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2011	2,500,000	06-16-11	06-16-11	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service Total					4,500,000				
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2011	6,785,432	06-05-11	06-20-11	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Washington Dept. of Fish and Wildlife Total	Ringold Springs Hatchery	CH0	FA	2011	3,450,000	06-15-11	06-30-11	Ringold Springs Hatchery	Mid-Columbia River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,223	05-07-11	06-16-11	Coulter Creek	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,322	05-07-11	06-12-11	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	27,365	05-07-11	06-12-11	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	49,379	04-29-11	06-14-11	Winthrop Hatchery	Methow River
Yakama Tribe Total					215,289				
Grand Total					16,248,721				

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
05/27/2011	242.5	79.1	241.8	125.2	273.2	119.0	286.7	88.0	279.7	76.5	300.1	164.8	300.9	195.3
05/28/2011	267.7	102.4	273.0	148.0	290.1	131.6	299.7	103.1	290.3	94.3	310.4	174.6	315.5	200.7
05/29/2011	267.7	102.7	274.2	151.4	292.4	142.5	304.6	115.7	297.8	107.7	319.3	191.5	328.5	202.7
05/30/2011	267.6	102.7	270.0	144.5	288.6	141.8	305.2	109.7	299.1	101.2	327.9	202.4	342.2	220.0
05/31/2011	268.1	102.7	270.0	144.5	293.0	133.0	308.3	109.9	308.5	112.2	316.0	185.9	326.1	205.2
06/01/2011	260.8	96.3	258.7	130.0	284.2	129.9	299.4	112.9	317.3	113.4	320.9	203.6	335.0	199.5
06/02/2011	260.8	96.2	262.1	141.8	283.2	129.6	299.9	107.2	295.3	109.4	308.7	187.7	314.2	200.2
06/03/2011	261.9	97.9	267.7	144.6	286.6	133.7	308.1	112.6	299.9	115.8	316.7	183.8	328.0	208.7
06/04/2011	262.7	98.0	273.1	144.8	287.9	132.0	296.6	115.6	292.5	104.8	330.8	196.9	333.6	213.8
06/05/2011	264.8	100.5	269.6	145.1	295.1	149.9	312.7	123.6	310.5	119.8	329.1	199.5	342.4	217.5
06/06/2011	254.9	93.7	260.8	141.5	285.2	146.3	307.9	118.0	304.3	117.0	325.4	193.9	332.1	205.7
06/07/2011	228.5	68.8	233.4	118.8	270.2	137.2	284.1	106.8	282.0	100.1	301.2	167.7	299.8	193.1
06/08/2011	209.9	51.3	222.9	126.1	261.3	127.9	281.7	95.5	276.3	97.4	309.1	167.7	316.7	200.9
06/09/2011	203.6	46.9	201.2	89.7	232.8	96.8	251.1	74.4	253.9	79.1	281.9	143.9	288.8	166.9

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

Date	Dworshak		Hells Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/27/2011	8.0	0.0	63.0	62.7	201.7	91.2	186.8	181.3	206.8	91.9	209.2	127.6
05/28/2011	2.4	0.0	61.6	62.3	182.3	72.1	167.3	161.6	184.4	68.9	190.9	109.1
05/29/2011	2.4	0.0	62.6	62.1	171.7	61.6	158.7	153.2	171.1	55.4	178.3	95.5
05/30/2011	7.0	0.0	61.0	61.9	162.1	51.7	148.2	142.7	158.4	44.6	163.8	83.6
05/31/2011	6.9	0.0	61.9	62.0	157.2	51.0	142.5	136.9	151.7	58.2	156.4	81.6
06/01/2011	7.8	0.8	61.3	58.2	154.5	44.3	142.9	105.2	154.1	40.8	160.4	79.8
06/02/2011	10.1	1.0	60.1	51.9	154.3	45.4	146.2	56.3	152.0	40.7	157.3	75.9
06/03/2011	10.1	0.4	61.0	51.5	169.6	59.6	161.6	71.5	168.7	55.5	175.2	93.6
06/04/2011	10.2	0.5	59.0	50.5	160.4	51.0	152.8	64.8	158.2	44.0	164.7	84.3
06/05/2011	9.6	0.7	56.3	50.6	158.2	50.1	149.0	63.2	155.0	43.0	159.3	83.0
06/06/2011	6.8	0.0	55.9	50.8	161.8	52.7	151.7	61.5	156.0	48.6	162.1	81.1
06/07/2011	7.0	0.0	58.3	50.8	188.1	77.6	177.1	87.1	185.2	76.2	189.3	105.2
06/08/2011	6.9	0.0	60.3	50.8	211.2	99.5	200.8	111.4	215.2	104.0	214.6	131.5
06/09/2011	6.8	0.0	---	---	206.5	97.1	195.0	105.3	211.2	96.9	215.7	134.9

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
05/27/2011	481.9	331.7	501.7	217.4	486.5	228.5	498.1	280.1	84.3	121.2
05/28/2011	495.5	346.4	507.7	223.3	491.9	234.9	496.2	275.0	86.6	122.2
05/29/2011	499.4	349.9	518.3	236.6	497.3	243.8	501.5	283.5	87.5	118.2
05/30/2011	480.6	337.6	509.1	233.6	494.5	247.4	506.5	293.3	87.6	113.3
05/31/2011	473.5	324.0	512.0	235.0	491.7	243.8	504.0	292.9	87.8	110.8
06/01/2011	476.1	328.0	495.7	235.7	486.5	233.4	501.5	289.8	86.5	112.8
06/02/2011	468.4	319.8	488.5	221.8	480.9	225.3	492.8	284.3	83.3	112.8
06/03/2011	476.7	332.6	498.0	225.6	481.1	225.7	493.8	282.7	82.7	116.0
06/04/2011	486.1	340.4	513.8	230.4	498.4	243.1	502.6	287.6	85.6	117.0
06/05/2011	477.6	329.9	502.5	224.5	493.3	240.0	502.7	290.0	83.0	117.3
06/06/2011	485.8	337.8	505.4	231.6	491.8	240.4	502.7	296.1	77.7	116.6
06/07/2011	493.6	342.9	496.5	230.4	482.4	227.1	499.9	291.5	77.3	118.7
06/08/2011	510.3	356.0	505.6	233.5	492.3	233.3	500.4	292.8	77.1	118.1
06/09/2011	500.9	339.8	506.1	239.5	494.5	238.1	500.5	296.3	75.2	116.5

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>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
5/27	99.7	99.9	100.1	24	128.2	128.9	129.9	23	115.0	115.4	116.0	24	139.1	139.6	140.4	23	125.1	126.8	129.9	24
5/28	99.5	99.7	99.9	23	128.5	129.3	130.1	20	116.3	116.9	117.5	24	143.4	143.8	144.2	20	134.2	135.5	135.8	24
5/29	99.4	99.6	99.9	24	129.1	130.5	131.3	23	117.6	118.3	118.8	24	143.5	143.8	144.2	23	138.6	139.7	140.1	24
5/30	99.2	99.5	99.9	23	129.0	129.9	130.8	20	117.9	118.2	118.8	24	144.0	144.2	144.7	20	138.9	139.3	139.8	24
5/31	98.9	99.1	99.4	24	128.8	129.3	129.7	21	117.3	117.5	118.2	24	143.7	143.9	144.1	21	138.2	138.5	139.0	24
6/1	99.3	99.5	99.7	24	129.4	129.8	130.2	24	117.6	118.0	118.5	24	141.7	143.2	143.7	24	138.7	139.1	139.4	24
6/2	99.7	99.8	100.0	24	129.5	129.6	129.9	20	118.1	118.3	118.4	24	140.5	140.7	141.1	20	139.4	139.9	140.2	24
6/3	99.1	99.4	99.9	24	128.9	129.4	129.9	24	117.0	117.4	118.2	24	140.0	140.2	140.9	24	137.4	137.6	137.7	24
6/4	98.6	98.7	98.8	24	129.5	130.0	130.6	23	117.2	117.7	118.3	24	140.2	140.5	140.6	23	138.0	138.7	139.2	24
6/5	99.5	100.0	100.4	23	129.6	130.1	130.3	22	118.4	119.0	119.2	24	141.5	142.4	142.9	22	139.0	139.5	139.9	24
6/6	99.7	100.0	100.3	23	130.1	130.3	130.9	21	120.0	120.5	121.2	24	141.7	142.7	143.5	21	139.5	140.2	140.5	24
6/7	99.6	99.7	99.9	24	129.9	130.5	131.2	22	120.5	120.7	120.9	24	138.9	139.4	139.6	22	139.7	140.2	140.6	24
6/8	100.3	101.1	101.9	24	130.1	130.4	131.1	19	119.1	119.4	119.9	24	134.3	135.4	137.2	19	135.4	136.3	137.9	24
6/9	101.1	101.3	101.8	20	131.5	131.7	132.3	19	119.2	119.5	120.0	24	132.6	133.0	133.2	19	133.5	134.0	134.6	24

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>				<u>Wells</u>				<u>Wells Dwnstrm</u>				<u>Rocky Reach</u>				<u>Rocky R. Tlwr</u>			
	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
5/27	120.0	120.8	121.9	24	119.5	119.8	120.5	21	129.9	131.0	131.8	21	123.4	125.0	126.7	24	127.1	128.3	129.4	24
5/28	121.7	122.5	123.2	24	122.5	124.8	125.9	23	132.1	134.0	134.4	23	128.5	129.8	130.1	24	130.6	133.1	134.5	24
5/29	122.1	122.5	123.3	24	125.9	126.8	127.1	24	134.7	135.2	135.8	24	132.0	132.7	133.3	24	132.7	133.5	134.3	24
5/30	121.8	122.1	122.8	24	126.1	126.6	126.9	24	135.5	137.3	138.8	24	132.8	133.7	134.5	24	131.9	132.2	132.6	24
5/31	122.7	123.6	124.2	24	125.6	126.3	127.1	24	133.5	134.1	135.2	24	131.0	131.5	133.7	24	131.4	132.4	133.7	24
6/1	121.0	121.8	122.7	24	126.6	127.1	127.5	23	135.4	135.9	137.3	23	132.3	133.2	134.1	24	132.1	133.0	133.8	24
6/2	121.5	122.7	124.0	24	126.9	127.3	127.8	24	137.2	137.8	138.4	24	133.3	133.9	134.2	24	132.2	132.9	133.4	24
6/3	122.1	122.9	123.4	24	125.3	126.3	127.2	23	135.3	135.6	136.3	23	132.1	132.6	133.1	24	132.2	133.1	133.6	24
6/4	121.2	121.6	122.0	24	127.9	129.1	129.9	24	136.4	137.3	137.7	24	132.5	133.3	133.9	24	132.2	133.0	133.6	24
6/5	119.4	120.8	122.7	24	126.4	127.0	127.3	24	136.5	137.3	138.2	24	134.2	134.6	135.3	24	134.5	135.4	136.5	24
6/6	118.5	119.0	119.5	24	126.1	126.6	127.0	23	136.2	136.7	137.7	23	133.7	134.4	135.4	24	133.5	134.1	134.8	24
6/7	117.6	118.1	118.9	24	124.5	124.8	125.5	24	133.8	135.5	137.6	24	131.8	132.2	132.7	24	129.0	129.6	131.9	24
6/8	116.7	117.1	117.8	24	120.5	121.5	123.0	24	130.1	131.7	135.3	24	128.0	128.8	130.5	24	126.5	127.0	128.1	24
6/9	116.2	117.3	118.5	24	121.2	121.9	122.1	23	128.2	129.6	132.4	23	127.5	128.9	129.9	24	125.0	125.8	127.2	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>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
5/27	122.3	123.3	124.3	24	125.5	126.5	127.6	24	120.4	120.7	120.8	24	127.7	128.1	128.3	24	122.0	123.3	123.6	24
5/28	126.2	127.4	129.2	24	128.6	129.9	131.2	24	122.1	123.6	124.6	24	128.9	129.8	130.7	24	123.5	124.3	125.1	24
5/29	128.9	129.4	130.0	24	131.1	131.2	131.6	24	125.3	126.2	127.1	24	131.1	131.6	132.8	24	126.1	126.8	127.5	24
5/30	129.2	129.5	129.9	24	131.1	131.3	131.5	24	127.1	128.0	128.3	24	133.4	134.4	135.2	24	126.9	128.5	129.9	24
5/31	128.8	129.2	129.5	24	131.0	131.3	131.5	24	127.4	127.8	128.3	24	131.9	133.2	134.8	24	128.1	128.9	129.7	24
6/1	129.0	129.6	130.1	24	131.4	131.8	132.2	24	127.8	128.2	129.0	24	135.0	135.9	136.6	24	131.2	132.4	132.7	24
6/2	129.0	129.1	129.2	24	132.3	133.0	133.2	24	125.4	126.6	127.1	24	131.7	134.0	137.0	24	127.4	128.7	130.5	24
6/3	128.7	129.4	129.8	24	132.7	133.2	133.4	24	126.3	128.7	129.7	24	129.9	130.7	132.7	24	125.2	126.5	127.1	24
6/4	129.0	129.8	130.2	24	131.8	132.3	132.9	24	130.1	131.5	132.7	34	133.0	135.0	148.2	28	126.8	128.5	128.8	34
6/5	130.6	131.3	131.8	24	133.9	134.6	135.0	24	130.8	131.4	131.9	34	148.3	148.3	149.2	10	129.4	130.4	130.6	34
6/6	130.0	130.4	131.2	24	133.1	133.3	133.5	24	130.9	132.0	133.8	24	131.4	131.7	133.4	16	129.9	131.5	133.3	24
6/7	127.4	128.0	128.5	24	131.1	131.5	132.4	24	125.0	125.9	127.2	24	128.8	129.5	130.2	24	123.5	124.9	126.5	24
6/8	125.1	125.6	126.6	24	129.7	130.4	131.2	24	122.7	123.8	125.2	24	127.7	128.1	128.9	24	124.3	125.8	126.4	24
6/9	124.8	125.1	125.2	24	128.6	129.0	129.3	24	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clrwtr-Peck</u>			<u>Anatone</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>	#	<u>24 h</u>	<u>12 h</u>	#		
	Avg	Avg		High	Avg		Avg	High		Avg	Avg		High	Avg		Avg	High		Avg	Avg
5/27	124.4	125.3	125.6	24	97.9	98.6	98.8	24	101.1	101.7	104.4	24	103.0	103.2	103.4	24	108.0	108.3	108.7	24
5/28	125.8	126.3	126.5	24	99.6	101.2	103.2	24	101.7	102.3	102.8	24	103.0	103.9	104.4	24	107.7	108.3	109.0	24
5/29	126.6	126.9	127.3	24	101.7	102.2	102.7	24	101.8	102.3	103.2	24	102.3	102.8	103.3	24	107.2	107.5	108.0	24
5/30	127.0	127.8	128.6	24	102.9	104.2	105.7	24	101.9	102.8	105.0	24	102.0	102.3	102.7	24	106.8	107.2	107.6	24
5/31	127.0	127.2	127.4	24	105.3	106.2	107.0	24	101.8	102.7	104.7	24	101.8	102.2	102.5	24	107.0	107.6	108.1	24
6/1	128.2	128.9	129.2	24	108.3	113.0	116.7	24	102.4	102.7	104.8	14	101.9	102.3	103.3	24	106.6	106.8	107.0	24
6/2	126.2	126.8	127.6	24	115.4	116.5	117.4	24	101.2	101.2	109.3	11	101.8	102.5	103.2	24	105.4	105.7	106.4	24
6/3	126.3	127.1	127.5	24	113.8	114.3	115.2	24	101.6	102.8	109.9	22	102.2	102.9	103.4	24	105.8	106.6	107.1	24
6/4	126.8	128.2	128.8	34	114.4	115.0	115.6	24	101.9	103.3	106.9	24	102.7	103.5	104.1	24	106.2	107.1	107.7	24
6/5	127.9	129.0	129.4	34	113.6	114.0	114.8	24	102.7	104.3	107.8	24	102.9	103.5	103.8	24	106.4	106.9	107.5	24
6/6	128.2	128.9	129.7	24	113.4	113.9	114.3	24	103.9	103.9	105.2	7	102.8	103.3	103.6	24	106.0	106.3	106.4	24
6/7	125.2	125.8	126.9	24	108.4	110.3	112.0	24	100.6	100.6	101.1	11	103.2	103.6	104.0	24	106.9	107.6	108.1	24
6/8	125.1	125.8	126.4	24	104.2	105.4	107.2	24	101.1	102.0	104.3	24	103.4	103.8	104.1	24	107.9	108.4	108.7	24
6/9	---	---	---	0	108.6	109.2	109.7	23	100.8	101.7	104.4	24	102.9	103.1	103.4	24	108.8	109.5	110.0	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-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>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
5/27	102.1	102.5	102.9	24	106.4	106.5	106.6	24	128.9	130.0	131.2	24	116.6	118.0	119.4	24	135.7	138.6	141.5	24
5/28	102.2	103.1	103.9	24	106.8	107.2	107.4	24	124.9	126.1	128.5	24	119.7	119.9	120.2	24	129.8	131.3	135.1	24
5/29	101.8	102.3	103.3	24	107.4	107.7	107.8	24	122.8	124.2	127.9	24	119.4	119.7	120.0	24	128.1	128.6	129.7	24
5/30	101.5	102.2	102.8	24	106.7	106.9	107.4	24	120.2	120.4	121.0	24	117.1	117.6	118.8	24	127.2	127.3	127.5	24
5/31	101.4	102.1	102.9	24	106.2	106.4	106.6	24	119.1	121.2	123.5	24	115.4	115.7	116.4	24	127.2	127.4	127.6	24
6/1	100.9	101.1	101.4	24	106.3	106.6	106.8	24	117.8	119.3	119.6	24	114.5	115.2	115.8	24	124.5	127.1	127.8	24
6/2	101.0	101.6	102.1	24	105.9	106.4	106.7	24	117.6	118.8	120.1	24	113.1	114.1	114.7	24	120.5	121.7	122.7	24
6/3	101.6	102.5	103.1	24	104.4	104.5	104.9	24	121.2	121.5	121.7	24	110.4	110.6	110.8	24	123.3	124.3	125.2	24
6/4	102.3	103.4	104.0	24	105.2	106.1	106.7	24	119.2	120.2	121.2	24	113.1	114.9	116.3	24	122.6	123.2	124.0	24
6/5	102.4	103.2	103.9	24	107.0	107.3	107.6	24	119.4	120.5	122.0	24	116.7	117.1	117.2	24	122.2	123.5	124.7	24
6/6	101.8	102.0	102.4	24	107.3	107.4	107.6	24	120.6	123.0	124.1	24	116.1	116.4	116.8	24	122.3	124.2	125.1	24
6/7	102.3	102.9	103.5	24	105.6	106.0	106.9	24	126.1	128.3	129.6	24	113.5	114.3	115.0	24	126.0	127.4	128.4	24
6/8	102.8	103.1	103.6	24	105.2	105.5	105.8	24	130.7	132.3	132.4	24	113.4	114.5	116.6	24	129.0	129.6	130.2	24
6/9	102.7	103.0	103.7	24	106.7	107.2	107.5	24	129.9	130.4	130.6	24	119.7	121.2	122.7	24	129.0	129.1	129.7	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>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
5/27	135.8	139.3	140.2	24	126.0	127.7	128.8	24	122.1	123.4	123.8	24	127.6	129.7	130.5	24	---	---	---	0
5/28	136.5	137.8	138.4	24	123.7	124.9	127.1	24	125.0	126.3	126.9	24	125.4	127.5	130.0	24	---	---	---	0
5/29	134.0	135.5	137.5	24	122.4	123.0	124.4	24	126.5	126.7	127.1	24	123.4	124.1	125.2	24	---	---	---	0
5/30	131.4	132.0	132.8	24	120.5	121.1	121.6	24	124.4	124.9	126.2	24	121.5	122.0	123.1	24	---	---	---	0
5/31	130.6	130.9	131.2	24	121.8	124.0	131.0	24	123.6	123.9	124.3	24	121.5	122.3	124.3	24	---	---	---	0
6/1	130.6	130.9	131.7	24	119.2	121.2	122.0	24	123.9	124.3	124.9	24	121.8	122.6	123.8	24	---	---	---	0
6/2	126.8	130.6	131.7	24	118.5	121.0	121.2	24	122.2	123.2	123.5	24	121.4	121.8	122.0	24	---	---	---	0
6/3	118.9	119.6	120.5	24	121.1	121.8	123.0	24	118.5	119.2	120.1	24	122.7	123.7	125.3	24	---	---	---	0
6/4	124.4	125.3	125.6	24	119.8	121.3	122.5	24	118.7	119.1	119.8	24	121.5	122.5	122.9	24	---	---	---	0
6/5	124.5	124.9	125.4	24	119.9	120.9	121.9	24	121.3	121.9	122.1	24	121.2	121.7	122.5	24	---	---	---	0
6/6	124.6	125.1	125.5	24	120.9	121.8	124.2	24	121.4	121.8	121.9	24	122.0	122.6	122.7	24	---	---	---	0
6/7	121.6	122.6	123.9	24	124.2	125.6	126.6	24	118.1	118.8	119.7	24	124.3	125.6	126.4	24	---	---	---	0
6/8	126.0	128.2	129.6	24	126.5	127.5	128.7	24	118.2	119.5	120.9	24	128.4	129.4	133.9	24	---	---	---	0
6/9	131.2	132.5	132.8	24	126.1	126.7	128.4	24	124.1	125.6	126.0	24	129.3	130.6	135.4	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	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
5/27	115.4	116.0	116.2	24	129.3	129.9	130.8	24	119.3	120.3	120.9	24	128.5	129.0	129.7	24	120.3	121.0	121.4	24
5/28	116.0	116.7	117.9	24	130.3	130.9	131.5	24	116.8	117.5	118.0	24	129.1	129.8	130.3	24	119.0	119.6	120.3	24
5/29	118.2	119.2	120.3	24	130.7	131.0	131.4	24	117.7	118.3	118.7	24	129.6	130.1	130.5	24	118.6	119.3	119.7	24
5/30	118.6	118.9	119.2	24	129.9	130.3	130.7	24	118.1	119.0	119.8	24	129.1	129.5	130.0	24	119.9	121.0	121.5	24
5/31	118.9	119.7	120.4	24	128.5	129.8	130.1	24	121.6	122.3	122.7	24	130.0	130.7	132.0	24	122.3	123.3	124.4	24
6/1	120.1	120.6	121.2	24	129.0	129.4	131.3	24	123.4	124.2	124.7	24	128.9	129.4	130.2	24	122.6	123.1	124.0	24
6/2	117.9	118.8	120.0	24	128.4	130.5	131.5	24	120.7	122.6	124.1	24	128.1	129.5	131.3	24	120.5	121.1	121.4	24
6/3	116.7	117.0	117.2	24	129.6	131.7	133.0	24	118.2	118.8	119.3	24	128.5	129.1	129.6	24	120.7	122.3	123.1	24
6/4	118.4	119.7	120.4	24	129.5	130.2	130.5	24	118.8	119.7	120.2	24	129.2	129.7	130.1	24	121.8	122.7	123.2	24
6/5	121.2	121.8	122.0	24	129.4	130.5	133.5	24	123.7	125.8	126.7	24	129.0	129.4	130.1	24	123.2	124.3	125.3	24
6/6	121.6	122.0	122.1	24	130.0	130.4	131.1	24	126.7	127.3	127.8	24	129.5	129.9	130.6	24	122.6	123.3	123.6	24
6/7	117.5	119.3	120.7	24	130.8	132.2	135.3	24	119.8	121.6	124.1	24	128.7	129.2	129.5	24	119.8	120.4	120.7	24
6/8	114.2	114.8	115.3	24	138.4	139.4	141.0	24	114.4	115.3	116.6	24	129.1	129.3	129.6	24	118.3	118.7	119.1	24
6/9	116.2	117.3	118.7	23	135.6	137.4	138.4	23	114.3	115.5	117.5	24	129.3	129.8	130.6	24	119.8	121.1	121.8	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>CamasWashougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High		<u>24h</u>	<u>12h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
5/27	122.9	123.4	123.9	24	121.2	121.3	121.5	24	128.0	128.3	128.7	24	125.4	125.8	126.0	24	---	---	---	0
5/28	121.9	122.5	123.0	24	121.2	121.4	121.7	24	127.5	127.7	127.9	24	126.3	126.6	127.1	24	---	---	---	0
5/29	122.3	122.7	123.2	24	119.3	119.9	120.6	24	126.7	127.0	127.6	24	125.2	125.3	125.7	24	---	---	---	0
5/30	122.8	123.7	124.5	24	119.8	121.0	121.9	24	127.5	128.5	129.1	24	125.8	126.6	127.3	24	---	---	---	0
5/31	124.2	124.7	125.4	24	122.5	122.7	122.8	24	129.2	129.5	130.9	24	127.5	128.0	128.3	24	---	---	---	0
6/1	124.3	124.7	125.0	24	121.8	122.1	122.3	24	128.6	128.9	129.0	24	127.2	127.6	128.1	24	---	---	---	0
6/2	123.0	123.6	124.0	24	119.2	119.7	120.8	24	127.3	127.6	128.2	24	125.9	126.1	126.3	24	---	---	---	0
6/3	123.3	124.5	124.9	24	121.4	122.3	122.9	24	128.5	129.0	129.3	24	126.1	126.9	127.1	24	---	---	---	0
6/4	124.5	124.9	125.4	24	123.6	124.2	124.7	24	129.5	129.9	130.2	24	127.0	127.8	128.0	24	---	---	---	0
6/5	125.2	125.8	126.2	24	124.0	124.3	124.7	24	130.0	130.2	130.4	24	128.6	129.3	129.8	24	---	---	---	0
6/6	124.5	125.2	125.6	24	121.1	122.6	123.6	24	129.0	129.7	130.2	24	127.7	128.1	128.3	24	---	---	---	0
6/7	122.7	123.2	123.6	24	117.0	117.5	117.9	24	126.6	126.9	127.5	24	124.6	125.0	125.8	24	---	---	---	0
6/8	121.9	122.3	123.0	24	118.1	118.6	119.2	24	127.2	127.6	128.0	24	124.7	125.2	125.5	24	---	---	---	0
6/9	123.3	124.2	124.5	24	120.8	122.0	122.6	24	129.4	130.3	132.4	24	127.1	128.3	129.8	24	---	---	---	0

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
Lower Granite Dam											
	06/02/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/09/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	06/06/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Lower Monumental Dam											
	05/28/11	Chinook + Steelhead	100	24	23	23.00%	1.00%	19	3	1	0
	06/01/11	Chinook + Steelhead	100	4	4	4.00%	0.00%	3	1	0	0
McNary Dam											
	06/01/11	Chinook + Steelhead	100	5	5	5.00%	0.00%	5	0	0	0
	06/03/11	Chinook + Steelhead	100	5	5	5.00%	0.00%	4	1	0	0
	06/05/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/09/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	05/28/11	Chinook + Steelhead	63	2	2	3.17%	0.00%	2	0	0	0
	05/31/11	Chinook + Steelhead	45	0	0	0.00%	0.00%	0	0	0	0
	06/04/11	Chinook + Steelhead	35	1	1	2.86%	0.00%	1	0	0	0
	06/07/11	Chinook + Steelhead	49	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	05/31/11	Chinook + Steelhead	100	41	37	37.00%	3.00%	27	7	3	0
	06/02/11	Chinook + Steelhead	100	61	60	60.00%	2.00%	44	14	2	0
	06/07/11	Chinook + Steelhead	100	41	40	40.00%	3.00%	25	12	3	0
	06/09/11	Chinook + Steelhead	100	33	31	31.00%	0.00%	21	10	0	0

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/27/2011	*	---	---	---	9,652	---	---	392	38,984	63,026	2,767	
05/28/2011	*	---	---	---	11,264	0	12,645	762	---	50,106	2,036	
05/29/2011	*	---	---	---	5,816	319	7,134	228	49,194	42,640	3,799	
05/30/2011	*	---	3	---	7,325	371	5,217	196	---	40,531	2,441	
05/31/2011	*	---	1	---	3,751	0	7,545	158	30,409	30,260	1,716	
06/01/2011	*	---	4	---	2,009	0	2,725	221	---	23,964	2,130	
06/02/2011	*	---	0	---	1,838	885	1,834	62	21,522	22,164	1,544	
06/03/2011	*	---	1	---	2,478	2,219	1,701	56	---	16,887	1,796	
06/04/2011	*	---	---	---	3,081	2,510	581	69	16,998	12,684	1,547	
06/05/2011	*	---	---	---	2,109	1,039	405	65	---	7,634	1,018	
06/06/2011	*	---	---	---	1,968	346	499	29	9,129	8,699	1,257	
06/07/2011	*	---	---	---	1,832	1,210	709	48	---	7,741	776	
06/08/2011	*	---	---	---	1,246	1,210	379	73	7,249	4,517	416	
06/09/2011	*	---	---	---	3,339	4,060	618	49	---	5,288	562	
06/10/2011	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	9	0	57,708	14,169	41,992	2,408	173,485	336,141	23,805	
# Days:		0	5	0	14	13	13	14	7	14	14	
Average:		0	2	0	4,122	1,090	3,230	172	24,784	24,010	1,700	
YTD		31,090	30,143	12,492	18,836	3,813,198	2,500,823	1,228,731	26,046	1,964,391	2,902,585	1,314,669

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)	
05/27/2011	*	---	---	---	40,708	---	---	282	21,300	10,280	5,906	
05/28/2011	*	---	---	---	65,617	7,270	7,087	668	---	8,524	4,072	
05/29/2011	*	---	---	---	29,403	8,930	11,536	259	34,734	7,874	3,811	
05/30/2011	*	---	1	---	29,300	28,727	13,114	214	---	3,987	1,835	
05/31/2011	*	---	0	---	32,112	17,890	15,747	167	41,985	9,473	3,284	
06/01/2011	*	---	0	---	37,160	28,089	14,790	276	---	7,676	2,305	
06/02/2011	*	---	0	---	43,125	26,180	9,874	192	47,577	11,130	2,966	
06/03/2011	*	---	0	---	35,208	45,210	14,032	377	---	14,216	2,915	
06/04/2011	*	---	---	---	21,724	101,263	9,146	202	55,700	30,370	3,696	
06/05/2011	*	---	---	---	22,258	38,467	6,746	185	---	33,082	4,903	
06/06/2011	*	---	---	---	18,443	54,613	5,557	150	41,037	28,998	9,889	
06/07/2011	*	---	---	---	17,324	23,712	4,729	454	---	17,978	7,700	
06/08/2011	*	---	---	---	21,450	36,080	4,965	561	29,990	24,795	9,104	
06/09/2011	*	---	---	---	25,472	93,818	8,272	412	---	29,086	12,827	
06/10/2011	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	1	0	439,304	510,249	125,595	4,399	272,323	237,469	75,213	
# Days:		0	5	0	14	13	13	14	7	14	14	
Average:		0	0	0	31,379	39,250	9,661	314	38,903	16,962	5,372	
YTD		9	36	12	163	585,109	523,776	127,638	6,510	437,869	2,724,114	

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)	
05/27/2011	*	---	---	---	---	1,967	---	---	1,858	9,927	18,358	2,726
05/28/2011	*	---	---	---	---	2,503	0	2,521	3,968	---	9,171	2,116
05/29/2011	*	---	---	---	---	1,454	319	1,518	1,788	10,494	12,603	3,606
05/30/2011	*	---	0	---	---	916	0	1,410	1,949	---	14,936	1,831
05/31/2011	*	---	0	---	---	1,200	0	656	1,627	6,425	8,421	1,908
06/01/2011	*	---	0	---	---	861	0	135	1,866	---	7,301	2,170
06/02/2011	*	---	0	---	---	283	0	0	1,610	7,621	10,749	1,596
06/03/2011	*	---	0	---	---	866	123	142	1,569	---	8,263	896
06/04/2011	*	---	---	---	---	462	717	290	965	15,659	6,220	1,610
06/05/2011	*	---	---	---	---	509	173	0	1,026	---	4,848	1,706
06/06/2011	*	---	---	---	---	73	346	71	760	5,754	6,887	1,641
06/07/2011	*	---	---	---	---	153	691	0	551	---	5,118	608
06/08/2011	*	---	---	---	---	356	346	0	991	6,451	7,282	603
06/09/2011	*	---	---	---	---	477	1,128	39	444	---	4,457	625
06/10/2011	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	12,080	3,843	6,782	20,972	62,331	124,614	23,642
# Days:		0	5	0	0	14	13	13	14	7	14	14
Average:		0	0	0	0	863	296	522	1,498	8,904	8,901	1,689
YTD		0	0	0	218	78,626	78,443	18,481	44,139	169,417	447,874	432,441

		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)	
05/27/2011	*	---	---	---	---	24,960	---	---	472	8,991	47,045	1,569
05/28/2011	*	---	---	---	---	37,904	909	55,739	1,207	---	43,109	2,395
05/29/2011	*	---	---	---	---	27,303	638	24,894	485	15,093	40,066	3,352
05/30/2011	*	---	43	---	---	21,975	1,114	28,343	408	---	44,438	2,813
05/31/2011	*	---	10	---	---	19,057	829	16,731	321	6,236	31,838	2,181
06/01/2011	*	---	19	---	---	12,769	0	8,228	419	---	25,274	2,422
06/02/2011	*	---	21	---	---	14,705	2,050	4,091	374	4,254	31,011	1,252
06/03/2011	*	---	4	---	---	11,952	6,370	7,371	449	---	17,616	1,598
06/04/2011	*	---	---	---	---	15,099	6,186	3,484	507	3,431	16,100	1,144
06/05/2011	*	---	---	---	---	14,693	6,063	2,226	484	---	15,754	1,157
06/06/2011	*	---	---	---	---	10,643	10,163	3,562	324	1,054	13,653	853
06/07/2011	*	---	---	---	---	11,982	5,532	4,256	324	---	10,735	1,028
06/08/2011	*	---	---	---	---	13,618	5,360	2,674	467	2,657	7,527	831
06/09/2011	*	---	---	---	---	14,596	8,910	4,175	401	---	6,950	479
06/10/2011	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	97	0	0	251,256	54,124	165,774	6,642	41,716	351,116	23,074
# Days:		0	5	0	0	14	13	13	14	7	14	14
Average:		0	19	0	0	17,947	4,163	12,752	474	5,959	25,080	1,648
YTD		1,080	13,770	4,071	2,934	4,049,290	1,958,689	817,089	23,142	597,630	2,544,381	237,452

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/27/2011	*	---	---	---	3,343	---	---	465	4,281	12,805	2,767
05/28/2011	*	---	---	---	1,788	909	3,026	695	---	9,819	1,996
05/29/2011	*	---	---	---	1,131	1,276	3,643	293	14,734	4,625	2,557
05/30/2011	*	---	0	---	1,373	743	2,961	266	---	7,574	1,622
05/31/2011	*	---	0	---	750	948	2,296	107	8,673	6,316	1,859
06/01/2011	*	---	0	---	861	0	1,490	101	---	5,429	1,564
06/02/2011	*	---	0	---	848	838	1,270	110	9,473	6,278	1,077
06/03/2011	*	---	0	---	1,732	1,356	1,559	51	---	4,252	900
06/04/2011	*	---	---	---	924	717	1,016	21	7,283	2,805	729
06/05/2011	*	---	---	---	582	693	472	50	---	2,303	1,216
06/06/2011	*	---	---	---	510	866	356	10	2,259	2,657	789
06/07/2011	*	---	---	---	534	691	394	12	---	1,873	567
06/08/2011	*	---	---	---	1,335	173	297	16	2,494	1,628	416
06/09/2011	*	---	---	---	572	564	541	27	---	982	375
06/10/2011	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	16,283	9,774	19,321	2,224	49,197	69,346	18,434
# Days:		0	5	0	14	13	13	14	7	14	14
Average:		0	0	0	1,163	752	1,486	159	7,028	4,953	1,317
YTD		0	0	1	110,574	37,807	28,035	16,623	308,090	349,690	106,371

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR† (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
05/27/2011	*	---	---	---	0	---	---	0	4,200	13,343	330
05/28/2011	*	---	---	---	0	0	0	0	---	10,592	440
05/29/2011	*	---	---	---	0	20	0	0	2,300	4,543	425
05/30/2011	*	---	0	---	0	4	0	2	---	5,500	78
05/31/2011	*	---	0	---	0	0	0	1	12,250	4,429	153
06/01/2011	*	---	0	---	0	0	0	0	---	10,400	80
06/02/2011	*	---	0	---	0	0	0	1	9,400	19,300	74
06/03/2011	*	---	0	---	0	0	0	1	---	15,067	73
06/04/2011	*	---	---	---	0	0	0	1	5,350	9,400	88
06/05/2011	*	---	---	---	50	0	0	0	---	8,600	80
06/06/2011	*	---	---	---	0	200	0	1	2,550	7,600	40
06/07/2011	*	---	---	---	0	0	0	1	---	4,066	25
06/08/2011	*	---	---	---	0	0	0	1	1,325	2,417	90
06/09/2011	*	---	---	---	250	0	0	3	---	1,080	45
06/10/2011	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	300	224	0	12	37,375	116,337	2,021
# Days:		0	5	0	14	13	13	14	7	14	14
Average:		0	0	0	21	17	0	1	5,339	8,310	144
YTD		0	0	0	5,827	10,843	746	284	130,885	426,437	24,444

Two-Week Summary of Passage Indices

* 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, sockeye, and lamprey juveniles. Two classes of fish counts are shown in these tables:

Two classes of fish counts are shown in these tables:

Collection counts (Coll), which account for sample rates but are not adjusted for flow;

Passage indices (INDEX), 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.

Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, and pacific lamprey macrophthalmia.

† Caution should be used with interpreting lamprey juvenile collection counts at LGR because of the possibility that lamprey may escape the sample tank before being sampled

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:

6/10/11 10:31 AM

05/27/11 TO 06/10/11

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	275,800	34,975	7,350	155,825	9,950	483,900
	Sum of NumberBarged	236,986	27,538	5,900	129,241	7,664	407,329
	Sum of NumberBypassed	24,426	5,632	1,195	19,467	1,904	52,624
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	62	1	0	3	3	69
	Sum of FacilityMorts	1,051	55	5	63	80	1,254
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,113	56	5	66	83	1,323
LGS	Sum of NumberCollected	228,153	7,152	1,885	27,934	3,356	268,480
	Sum of NumberBarged	186,216	5,347	1,385	23,978	3,104	220,030
	Sum of NumberBypassed	38	0	0	0	0	38
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	18	0	0	1	1	20
	Sum of FacilityMorts	381	5	0	7	1	394
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	399	5	0	8	2	414
LMN	Sum of NumberCollected	83,687	27,058	4,370	106,885	12,790	234,790
	Sum of NumberBarged	78,840	26,406	4,446	102,311	12,441	224,444
	Sum of NumberBypassed	47	38	0	215	0	300
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	1	0	0	0	1
	Sum of FacilityMorts	543	293	4	406	69	1,315
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	543	294	4	406	69	1,316
MCN	Sum of NumberCollected	80,516	51,650	18,465	12,413	14,522	177,566
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	79,630	50,207	18,346	12,336	14,328	174,847
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	35	92	4	2	21	154
	Sum of FacilityMorts	851	1,351	115	75	173	2,565
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	886	1,443	119	77	194	2,719
Total Sum of NumberCollected		668,156	120,835	32,070	303,057	40,618	1,164,736
Total Sum of NumberBarged		502,042	59,291	11,731	255,530	23,209	851,803
Total Sum of NumberBypassed		104,141	55,877	19,541	32,018	16,232	227,809
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		115	94	4	6	25	244
Total Sum of FacilityMorts		2,826	1,704	124	551	323	5,528
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		2,941	1,798	128	557	348	5,772

YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/10/11 10:32 AM

TO: 06/10/11

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	357,575	2,705,997	51,609	72,539	2,670,907	5,858,627
	Sum of NumberBarged	261,406	1,692,488	36,836	29,657	1,389,404	3,409,791
	Sum of NumberBypassed	81,743	1,009,672	14,507	42,055	1,274,116	2,422,093
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	74	101	1	67	37	280
	Sum of FacilityMorts	1,077	1,746	15	461	241	3,540
	Sum of ResearchMorts	0	241	0	0	58	299
	Sum of TotalProjectMorts	1,151	2,088	16	528	336	4,119
LGS	Sum of NumberCollected	233,960	1,433,862	39,485	20,468	1,092,213	2,819,988
	Sum of NumberBarged	192,001	1,327,130	38,584	14,873	849,268	2,421,856
	Sum of NumberBypassed	50	103,168	400	5,227	238,633	347,478
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	18	50	0	7	8	83
	Sum of FacilityMorts	391	1,714	1	111	356	2,573
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	409	1,764	1	118	364	2,656
LMN	Sum of NumberCollected	85,036	848,799	12,280	18,871	552,353	1,517,339
	Sum of NumberBarged	79,735	631,685	11,158	16,779	449,396	1,188,753
	Sum of NumberBypassed	501	215,289	1,194	1,585	98,177	316,746
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	3	0	0	4	7
	Sum of FacilityMorts	543	1,499	10	227	823	3,102
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	543	1,502	10	227	827	3,109
MCN	Sum of NumberCollected	137,154	947,615	65,432	129,544	292,477	1,572,222
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	136,159	945,049	65,285	129,230	292,294	1,568,017
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	46	183	5	26	11	271
	Sum of FacilityMorts	949	2,383	142	288	172	3,934
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	995	2,566	147	314	183	4,205
Total Sum of NumberCollected		813,725	5,936,273	168,806	241,422	4,607,950	11,768,176
Total Sum of NumberBarged		533,142	3,651,303	86,578	61,309	2,688,068	7,020,400
Total Sum of NumberBypassed		218,453	2,273,178	81,386	178,097	1,903,220	4,654,334
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		138	337	6	100	60	641
Total Sum of FacilityMorts		2,960	7,342	168	1,087	1,592	13,149
Total Sum of ResearchMorts		0	241	0	0	58	299
Total Sum of TotalProjectMorts		3,098	7,920	174	1,187	1,710	14,089

Cumulative Adult Passage at Mainstem Dams Through: 06/09

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	06/09	167097	50945	244384	12612	174444	16431	20903	9479	22116	2204	16081	2293	0	0	0	0	0	0
TDA	06/09	124164	40146	189839	11546	130174	13470	8943	5296	13757	1266	9117	1158	0	0	0	0	0	0
JDA	06/09	103401	39823	179446	11794	110572	12004	5531	3879	7133	749	4963	623	0	0	0	0	0	0
MCN	06/09	101245	31750	153500	9185	102003	11175	928	773	2100	176	1123	161	0	0	0	0	0	0
IHR	06/09	67806	17319	101080	6046	68834	6646	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/09	67437	16874	95020	5811	66169	5146	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/09	64260	20443	87699	5074	59766	5449	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/09	54193	17267	83644	5615	58455	6608	0	0	0	0	0	0	0	0	0	0	0	0
PRD	06/08	14335	5467	29074	909	18963	769	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/08	11616	6108	27609	1346	15634	1358	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/08	5630	2393	8247	469	5804	438	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/08	2901	1878	6748	559	3577	371	0	0	0	0	0	0	0	0	0	0	0	0
WFA	06/07	23324	653	44642	1049	-	-	-	-	-	-	-	-	0	0	0	0	-	-

DAM	Coho						Sockeye			Steelhead			
	2011		2010		10-Yr Avg.		2011	2010	10-Yr Avg.	2011	2010	10-Yr Avg.	Wild 2011
BON	0	0	0	0	0	0	360	2645	1874	4822	9341	6404	1546
TDA	0	0	0	0	0	0	102	1549	976	1557	3034	1988	775
JDA	0	0	0	0	0	0	49	1114	597	2898	2935	3268	1766
MCN	0	0	0	0	0	0	1	330	184	2692	2564	2424	1585
IHR	0	0	0	0	0	0	0	0	0	3077	3093	2553	1202
LMN	0	0	0	0	0	0	0	0	0	3931	4159	2952	2192
LGS	0	0	0	0	0	0	0	0	0	6238	3154	2931	3340
LGR	0	0	0	0	0	0	0	0	0	12309	10479	9350	5779
PRD	0	0	0	0	0	0	2	35	5	45	90	39	0
RIS	0	0	0	0	0	0	1	7	1	73	117	83	50
RRH	0	0	0	0	0	0	2	3	0	553	359	244	490
WEL	0	0	0	0	0	0	0	0	0	126	102	51	97
WFA	0	0	0	0	-	-	-	-	-	16695	21755	-	-

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: 06/10/11

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

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2011	49	1	1,419	600
2010	39	0	2,318	657