



Fish Passage Center

Weekly Report #11 - 12

June 3, 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

Snowpack in the Columbia River for basins above the Snake River confluence is 241% of average, for Snake River Basins snowpack is 353% of average, and for lower Columbia Basins between McNary and

Bonneville Dam snowpack is 724% of average.

Table 2 displays the May Final and June Early runoff volume forecasts for multiple reservoirs. The June Early forecast at The Dalles between January and July is 138000 Kaf (129% 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)	119	128000	129	138000
Grand Coulee (Jan-July)	117	73700	124	78100
Libby Res. Inflow, MT (Apr-Aug)	123	7660 8165*	129	8070
Hungry Horse Res. Inflow, MT (Jan-July)	149	3310	151	3350
Lower Granite Res. Inflow (Apr- July)	132	28400	154	33100
Brownlee Res. Inflow (Apr-July)	144	9060	176	11100
Dworshak Res. Inflow (Apr-July)	130	3440 3772*	141	3730

* 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 169.1 Kcfs over the last week and 125.8 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 482.2 Kcfs over the last week and 332.8 Kcfs over the spring season. Flows at Priest Rapids Dam have averaged 323.2 Kcfs over the last week and 198.5 Kcfs over the spring season.

Grand Coulee Reservoir is at 1234.9 feet (6-2-11) and has refilled 0.3 feet over the last week. Outflows at Grand Coulee have ranged between 242.5 and 268.1 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2369.5 feet (6-2-11) and has refilled 7.4 feet last week. Outflows at Libby Dam have been 23.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3499.9 feet (6-2-11) and has refilled 4.1 feet last week. Outflows at Hungry Horse have been 8.0 Kcfs last week.

Dworshak is currently at an elevation of 1540.8 feet (6-2-11) and has refilled 13.3 feet last week. Outflows from Dworshak have ranged between 2.4-10.1 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2048.2 feet on June 2nd, 2011 refilling 4.0 feet last week. Over the last week, outflows at Brownlee have ranged between 51.2-60.9 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 2nd. 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 154.3 to 201.7 Kcfs and spill has ranged from 44.3 to 91.2 Kcfs. At Little Goose Dam, spill exceeded the 30%

level as specified in the Court Order with the project spilling all river flow, except for 5 Kcfs for station power generation, beginning Tuesday May 24th at 0600 hours. The Little Goose Dam powerhouse experienced two separate problems that affected all six generating units. During repairs the transformer core was exposed to the atmosphere under wet weather conditions and additional work requiring several additional days, is needed to remove all moisture from the transformer core insulation. The project was brought back on-line on the afternoon of June 1st. Daily average spill ranged from 56.3 Kcfs to 181.3 Kcfs. At Lower Monumental Dam spill was in excess of the Court Order and ranged from 40.7 to 91.9 Kcfs. Late in the past week, the COE attempted to limit spill to gas cap levels at this project to address TDG issues whenever possible.

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 75.9 to 127.6 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 spill in excess of hydraulic capacity due to high flows and unit outages. Spill has ranged between 68.3% and 70.2% of daily average flow (daily average spill ranged from 319.8 to 349.9 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 43.3% to 47.5% of total river flow). At The Dalles Dam, spill exceeded the 40% objective this past week, ranging from 46.8 % to 50%). Finally, at Bonneville Dam, spill exceeded the 100 Kcfs in the Court Order over the past week and ranged from a daily average of 275 Kcfs to 293.3 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

All points of compliance, with the exception of the Lower Granite Dam forebay monitor, were exceeding the 115/120% TDG levels until May 31st. On June 1st the Lower Granite tailrace came into compliance with the 120% waiver limit, and on June 2nd the Little Goose forebay also came into compliance with the 115% waiver limit. Limited GBT monitoring has taken place this past week as a result of the powerhouse outage at Little Goose Dam and the removal of fish screens from the units at Bonneville Dam. The GBT percentage of fish with signs of GBT in the fins increased to 23% at Lower Monumental Dam, reflecting the powerhouse failure and total river spill occurring at Little Goose Dam. The percentage of fish with signs decreased to 4% in the sample taken on June 1, reflecting the decrease in total dissolved gas concentration that occurred with decreasing flows in the Snake River. With the powerhouse coming back on-line, and TDG decreasing, the lower levels of GBT are expected to continue. Over the past week, 37% of the fish examined had signs of GBT in the fins on May

31st at Rock Island Dam, with the incidence increasing up to sixty percent of fish observed with signs of GBT in the sample collected on June 2nd. 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:

Transportation was suspended at Snake River sites beginning May 22 due to a combination of lock outage at The Dalles Dam, high flows and powerhouse outage at Little Goose Dam. The lock at The Dalles Dam has been repaired so that transportation collections began again on May 28 at Lower Granite Dam, Little Goose Dam, while Lower Monumental Dam collections were renewed May 29. Little Goose Dam had limited collections between May 22 and May 28 due to powerhouse outage. The screens have not been reinstalled at Bonneville Dam so that collections at that facility are limited.

All SMP traps operating for the SMP have ended collections for the season. The Imnaha River Trap operated by Nez Perce Tribe continues to collect and send data to FPC. The trap has been operating sporadically due to high flows and debris concerns.

Juvenile fish transportation was suspended at Lower Granite Dam on May 22 due to both high flows and a lock outage at The Dalles Dam. The lock at The Dalles Dam was repaired last Friday, May 27 and the Snake River transportation sites all began collection for transportation May 28, with the first barge load of fish transported on May 29. Subyearling Chinook have begun to predominate in the sample this week as at Lower Granite Dam while steelhead passage numbers continued to decline. Subyearling indices averaged 40,000 per day this week compared to 13,000 per day last week. All spring migrant indices decreased this week, with steelhead indices averaging 23,000 per day this week compared to 48,000 last week; yearling Chinook average weekly indices dropped from 21,000 to 6,000; sockeye indices also dropped from 5,800 per day last week to 1,400 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 spill about 95% of flows so that very few fish were collected during the outage.

Sampling at Rock Island Dam is ongoing. Collections at the site have continued relatively high. Coho have continued predominated in the sample in the past week with the average index at 2,100 very close to 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 290 for yearling Chinook down from 650 the previous week; the steelhead index dropped to 530 this week from 970 per day last week; subyearling Chinook indices increased this week from an average of 110 per day last week to nearly 300 per day this week.

Sampling at McNary Dam is every other day in the spring. Normal sampling began on April 13. Yearling Chinook and subyearling Chinook predominated in passage at the site this past week, with the average passage index for yearling Chinook at 35,000 compared to 71,000 last week and the index for subyearling Chinook averaged 36,000 per day this week compared to 33,000 per day last week. For steelhead the index averaged 9,000 and for sockeye the index was at 9,000 per day this week compared to 23,000 per day last week.

At John Day Dam passage indices declined for all species over the past week. Yearling Chinook and steelhead were down this week but both species again predominated in the sample; the passage index for both species averaged just under 40,000 per day this week compared to 120,000 per day last week. Lamprey collections have declined over the past week. The lamprey collection averaged about 10,000 per day this week compared to 25,000 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 decided to remove 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. Several releases of subyearling fall Chinook juveniles were scheduled to begin in early

June. In all, these releases are expected to total approximately 900,000 fall Chinook juveniles, all of which were planned for release into the Clearwater River and its tributaries. Of these 900,000 fall Chinook juveniles, approximately 22% are unmarked (i.e., no fin clips or coded-wire tags). There was only one other release of juvenile salmonids scheduled for this week. Approximately 300,000 spring Chinook parr were scheduled to be released into the Selway River this week. These spring Chinook parr are 100% unmarked and are not expected to out-migrate until spring of 2012.

There are no new releases that are scheduled for this zone over the next two weeks. However, several releases of subyearling fall Chinook that began in past weeks are scheduled to end 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 new releases scheduled to begin this week. However, 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. There are two releases of subyearling fall Chinook that are scheduled to begin over the next two weeks. In all, these releases are expected to total over 10.2 million fall Chinook juveniles. Of these, approximately 66% are scheduled to be released from Priest Rapids Hatchery and 34% are scheduled to be released from Ringgold Springs Hatchery. Approximately 38% of these subyearling fall Chinook juveniles are expected to be unmarked.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. There was only one release of juvenile salmonids scheduled for this zone this week. Approximately 4.0 million subyearling fall Chinook juveniles were scheduled to be released into the Klickitat River on or around June 1st. 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 1,871 and 2,192 adult summer Chinook in the last week. The 2011 summer Chinook count of 4,063 is about 63% of the 2010 count while being 1.28 times greater than the 10 year average. The 2010 Bonneville Dam summer Chinook jack count of 2,267 is 3.79 times greater than the 2010 count and 5.13 times greater than the 10 year average count.

Adult spring Chinook counts at Bonneville Dam ended on May 31st. The total 2011 spring Chinook count of 167,097 was about 68.4% of the 2010 count and 95.8% of the 10 year average. The 2011 Bonneville Dam spring Chinook jack count of 50,945 is about 4.04 times greater than the 2010 count and 3.10 times greater than the 10 year average. At Willamette Falls 18,971 adult spring Chinook have been counted so far this year. The 2011 adult spring Chinook count at Willamette Falls is about 43.4% of the 2010 count of 43,696. At McNary Dam 96,070 adult spring Chinook have been counted. The 2011 adult spring Chinook count at McNary Dam is about 68.1% of the 2010 count, while having 525 more fish than the 10 year average. The 2011 McNary Dam spring Chinook jack count of 26,669 is about 3.31 times greater than the 2010 count and 2.62 times greater than the 10 year average count. The 2011 adult spring Chinook count at Rock Island Dam of 10,181 is about 38.8% of the 2010 count and 69.9% of the 10 year average. The 2010 adult spring Chinook count at Lower Granite Dam of 45,705 is about 56.1% of the 2010 count and about 86.8% of the 10 year average. The 2010 Lower Granite spring Chinook jack count of 11,578 is about 2.17 times greater than the 2010 count and 2.11 times greater than the 10 year average. The Bonneville Dam 2011 steelhead count of 4,044 is about 50.6% of the 2010 count of 7,992 while being about 79.8% of the 10 year average count of 5,067. In the Snake River, daily adult steelhead counts at Lower Granite Dam ranged from 2 to 11 adults per day last week. This year's Lower Granite steelhead count of 12,298 is about 1.17 times greater than the 2010 count of 10,468 and 1.32 times greater than the 10 year average of 9,332. The 2011 Lower Granite wild steelhead count as of June 2nd was 5,771. At Willamette Falls Dam, the 2011 count for steelhead was 14,405, as of May 31st. This year's steelhead count is about 68.4% of the 2010 count of 21,066 at

Willamette Falls Dam for the same date range.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	5/20/2011		to		06/02/11				
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 Big Canyon (Clearwater River)	Snake River Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2011	500,000	05-25-11	05-31-11	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	05-10-11	05-25-11	Lapwai Creek	Clearwater River M F
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					3,100,000				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2011	399,500	05-24-11	05-24-11	Grande Ronde River	Grande Ronde River
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	Umatilla Hatchery	CH0	FA	2011	562,855	05-24-11	05-25-11	Umatilla River	Umatilla River
Oregon Dept. of Fish and Wildlife Total					1,206,697				
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	Wells Hatchery	CH0	SU	2011	442,821	05-19-11	05-24-11	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					842,821				
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 Butcher Creek Acclim.	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,331	05-07-11	06-07-11	Pond Beaver Creek Acclim	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,339	04-29-11	06-07-11	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 Lost Creek Acclim	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,942	04-20-11	06-01-11	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 Lost Creek Acclim	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,297	04-20-11	06-01-11	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 Beaver Creek Acclim	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	29,279	04-29-11	06-07-11	Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	49,379	04-29-11	06-14-11	Winthrop Hatchery Butcher Creek Acclim.	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2011	60,901	05-07-11	06-07-11	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					11,209,721				

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	6/3/2011		to		6/16/2011				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
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					230,000				
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 Nez Perce Tribal	Snake River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2011	500,000	06-01-11	06-15-11	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 Ringold Springs	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2011	3,450,000	06-15-11	06-30-11	Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					10,235,432				
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 Butcher Creek Acclim.	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,331	05-07-11	06-07-11	Pond Beaver Creek Acclim	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,339	04-29-11	06-07-11	Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	27,365	05-07-11	06-12-11	Rolfings Acclim Pond Beaver Creek Acclim	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	29,279	04-29-11	06-07-11	Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	49,379	04-29-11	06-14-11	Winthrop Hatchery Butcher Creek Acclim.	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2011	60,901	05-07-11	06-07-11	Pond	Wenatchee River
Yakama Tribe Total					444,139				
Grand Total					16,609,571				

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
05/20/2011	214.6	31.1	218.1	115.4	244.3	71.7	238.0	38.9	239.0	54.8	248.9	116.0	252.6	130.8
05/21/2011	229.8	48.1	237.5	113.4	266.1	100.5	265.8	80.8	267.8	84.4	277.0	142.3	283.2	151.0
05/22/2011	237.2	55.5	241.1	109.9	272.3	112.7	269.1	80.4	270.3	96.4	285.1	157.8	292.1	179.1
05/23/2011	207.2	47.1	215.6	92.4	258.4	94.1	262.5	65.9	263.2	76.2	284.4	149.4	295.1	172.9
05/24/2011	200.2	40.5	206.8	86.7	244.2	83.9	249.6	53.1	248.8	55.0	260.5	126.8	271.7	147.9
05/25/2011	198.6	37.5	202.1	80.5	237.4	71.9	240.1	45.0	241.4	46.4	254.3	121.0	266.2	148.1
05/26/2011	213.4	51.3	211.9	98.6	247.3	80.4	246.1	47.5	242.9	45.2	255.6	118.8	262.7	159.9
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	256.8	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

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

Date	Dworshak		Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/20/2011	2.4	0.0	65.4	64.1	158.7	55.7	147.0	104.4	155.4	46.9	160.9	82.7
05/21/2011	2.5	0.2	65.8	64.0	163.2	60.3	155.9	82.5	162.2	55.8	168.6	93.4
05/22/2011	2.7	0.0	63.7	66.0	171.0	61.2	163.0	91.7	169.9	54.9	174.3	92.5
05/23/2011	3.7	0.0	63.3	69.7	182.6	74.8	173.2	98.7	180.8	64.3	186.9	103.3
05/24/2011	4.6	0.0	62.4	66.1	187.6	77.2	174.1	151.1	189.2	72.6	191.9	108.6
05/25/2011	7.3	0.0	60.7	65.8	196.1	85.2	178.4	172.6	193.5	76.7	198.4	114.9
05/26/2011	7.4	0.0	60.6	64.5	200.0	95.8	182.7	177.2	200.2	83.8	204.2	121.5
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	---	---	154.3	45.4	146.2	56.3	152.0	40.7	157.3	75.9

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		
05/20/2011	416.4	273.4	467.3	186.9	451.2	200.4	462.1	253.9	88.1	107.7
05/21/2011	443.0	298.1	474.3	194.7	461.1	215.4	468.9	258.6	86.8	111.1
05/22/2011	452.2	305.4	476.7	193.8	457.1	197.1	470.7	254.6	87.5	116.2
05/23/2011	480.2	333.0	493.6	214.9	471.7	209.5	483.0	265.2	87.8	117.5
05/24/2011	473.1	325.5	495.3	220.0	477.8	214.2	484.7	268.7	88.0	115.6
05/25/2011	470.1	321.4	490.8	200.2	476.6	215.3	492.3	275.2	87.0	117.7
05/26/2011	461.7	312.5	483.0	205.7	462.1	209.9	482.7	274.4	84.4	111.5
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

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	Hungry H. Dnst			#	Boundary			#	Grand Coulee			#	Grand C. Tlwr			#	Chief Joseph			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
5/20	99.0	99.2	99.6	24	123.9	125.0	126.3	22	110.4	110.8	111.0	24	124.8	129.2	131.4	22	118.2	119.1	119.7	24
5/21	99.3	99.5	99.7	24	125.3	125.8	126.8	23	111.6	112.2	113.1	24	131.8	132.6	133.3	23	119.1	120.7	125.6	24
5/22	99.4	99.5	99.7	24	125.8	126.2	126.4	22	111.9	112.3	112.8	24	133.6	134.6	135.7	22	127.9	128.7	129.2	24
5/23	99.3	99.4	99.7	24	127.1	127.6	128.1	23	112.8	113.2	113.5	24	131.7	133.5	134.3	23	129.4	129.6	130.4	18
5/24	98.9	99.2	99.4	24	127.0	127.3	127.9	22	113.6	113.9	114.3	24	129.8	130.0	130.3	22	---	---	---	0
5/25	98.9	99.2	99.4	23	127.2	127.8	129.7	19	114.5	115.1	115.3	24	130.1	130.8	131.8	19	127.0	127.1	127.4	14
5/26	99.6	99.8	100.0	23	127.5	128.5	129.9	20	114.9	115.1	115.4	24	132.2	135.4	138.7	24	126.5	126.8	127.3	24
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

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	Chief J. Dnst			#	Wells			#	Wells Dwnstrm			#	Rocky Reach			#	Rocky R. Tlwr			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
5/20	120.4	121.2	121.7	24	118.2	120.0	120.5	21	124.2	126.1	128.8	21	119.5	120.0	120.3	24	121.6	122.5	124.0	24
5/21	119.3	119.8	120.5	24	118.1	118.6	120.3	22	127.0	127.7	129.1	22	123.1	125.1	126.5	24	125.6	126.4	126.9	24
5/22	119.9	120.2	120.4	24	119.5	120.8	122.1	19	128.7	129.6	130.5	19	125.1	125.8	126.4	24	126.8	127.1	127.4	24
5/23	118.5	119.4	120.0	24	121.9	122.2	122.4	22	128.3	129.2	130.4	22	127.1	127.8	128.3	24	127.3	127.6	128.0	24
5/24	117.4	118.1	119.3	24	121.6	122.0	122.8	24	127.7	128.5	129.9	24	126.2	127.0	127.8	24	126.8	127.4	128.2	24
5/25	117.0	117.8	121.6	24	121.6	122.2	122.8	24	126.6	127.4	128.7	24	125.4	125.8	126.6	24	126.3	126.9	127.1	24
5/26	118.6	119.6	121.7	24	119.2	119.8	120.2	24	125.6	126.9	127.9	24	123.5	124.6	125.3	24	125.5	125.8	126.1	24
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

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	Rock Island			#	Rock I. Tlwr			#	Wanapum			#	Wanapum Tlwr			#	Priest Rapids			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
5/20	118.0	119.0	119.4	24	120.6	121.5	122.3	24	117.0	118.9	120.0	24	124.0	124.9	126.6	24	120.4	121.4	121.8	24
5/21	121.4	122.5	123.4	24	124.4	125.3	125.8	24	118.3	118.8	119.5	24	127.4	127.8	128.8	24	122.6	123.3	123.8	24
5/22	123.8	124.0	124.2	24	126.5	126.7	126.9	24	120.1	121.5	122.5	24	129.9	130.8	131.8	24	123.0	123.7	124.0	24
5/23	124.4	125.0	125.6	24	126.4	126.7	126.9	24	123.1	124.0	126.1	24	129.6	129.8	130.9	24	125.3	126.6	127.5	24
5/24	124.0	124.4	124.6	24	125.4	125.9	127.2	24	123.2	124.3	125.0	24	128.6	128.9	129.3	24	125.2	126.1	126.7	24
5/25	123.0	123.9	124.2	24	123.5	125.2	125.4	24	123.8	124.5	125.0	24	126.2	127.3	128.2	24	125.1	125.8	126.3	24
5/26	121.9	122.2	122.3	24	123.5	123.6	123.9	24	121.0	121.3	121.8	24	123.5	123.7	124.0	24	120.3	120.6	121.7	24
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	---	---	---	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
5/20	122.3	123.2	123.7	24	104.8	105.8	106.4	24	107.4	109.1	109.8	24	102.8	103.5	103.9	24	106.7	107.5	107.9	24			
5/21	123.6	123.9	124.3	24	101.9	103.1	103.6	24	108.5	111.3	114.1	24	103.3	104.0	104.9	24	106.8	107.2	107.6	24			
5/22	124.6	125.2	125.4	24	100.9	101.7	103.0	24	104.9	106.9	108.5	24	102.5	103.0	103.4	24	107.1	107.6	108.1	24			
5/23	125.1	125.6	126.4	24	98.9	99.3	100.2	24	104.0	105.9	106.7	24	103.2	104.0	104.8	24	107.5	107.9	108.3	24			
5/24	124.9	125.4	125.6	24	99.8	100.5	100.8	24	102.3	104.1	104.8	24	102.3	102.8	103.3	24	107.4	107.7	107.9	24			
5/25	124.7	125.3	125.7	24	101.5	101.7	101.9	24	102.7	103.1	104.8	16	103.6	104.1	104.5	24	108.7	109.2	109.4	24			
5/26	122.8	123.3	123.6	24	98.1	98.8	100.4	24	101.4	102.2	104.8	22	102.6	103.3	103.7	24	107.9	108.3	108.7	24			
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	---	---	---	0	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			

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
5/20	102.4	103.1	103.9	24	106.2	106.7	107.1	24	120.5	122.5	126.7	24	120.5	120.7	121.3	24	126.6	129.6	154.5	24			
5/21	102.6	103.3	104.4	24	107.0	107.4	107.7	24	122.1	124.0	127.1	24	118.0	118.9	120.5	24	124.4	124.9	125.8	24			
5/22	101.8	102.2	102.7	24	106.7	107.0	107.2	24	122.5	124.1	125.0	24	116.0	116.6	117.5	24	125.5	127.1	127.9	24			
5/23	102.1	102.6	103.1	24	106.4	106.6	106.8	24	125.6	127.1	129.3	24	115.1	115.3	115.9	24	126.5	127.3	127.4	24			
5/24	101.3	101.6	102.1	24	106.3	106.4	106.5	24	126.2	128.3	130.6	24	116.2	116.5	116.7	24	131.3	135.1	142.1	24			
5/25	102.7	103.3	103.9	24	106.8	107.1	107.3	24	127.9	129.2	129.8	24	117.5	118.0	119.2	24	133.9	135.9	138.8	24			
5/26	101.6	102.1	102.3	24	106.6	106.8	107.0	24	129.6	132.2	133.0	24	117.7	118.9	119.8	24	133.4	136.4	139.3	24			
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			

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
5/20	126.7	127.2	127.9	24	120.8	121.9	124.6	24	122.7	123.0	123.2	24	121.8	122.2	124.0	24	---	---	---	0			
5/21	128.9	130.6	132.4	24	122.1	123.0	123.7	23	122.3	122.7	123.1	24	122.9	123.7	124.4	24	---	---	---	0			
5/22	125.9	126.1	126.4	24	122.1	123.1	124.2	24	121.7	121.8	122.0	24	122.5	123.6	124.8	24	---	---	---	0			
5/23	126.9	127.8	128.1	24	122.9	123.6	124.4	24	120.7	121.0	121.2	24	124.5	125.2	125.9	24	---	---	---	0			
5/24	127.4	127.9	128.4	24	123.7	124.9	127.8	24	120.9	121.3	121.6	24	125.2	126.4	130.4	24	---	---	---	0			
5/25	134.8	138.3	140.6	24	124.4	125.4	127.7	24	122.8	123.5	123.9	24	126.2	127.4	130.6	24	---	---	---	0			
5/26	132.0	133.8	136.8	24	125.0	126.4	128.3	24	121.9	122.6	123.3	24	126.8	128.1	130.1	24	---	---	---	0			
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			

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>			# hr	<u>McNary Tlwr</u>			# hr	<u>John Day</u>			# hr	<u>John Day Tlwr</u>			# hr	<u>The Dalles</u>			# hr
	<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		
5/20	116.2	116.8	117.5	24	124.1	124.5	125.0	24	120.4	120.8	121.3	24	123.8	124.7	127.6	24	118.9	119.7	120.6	24
5/21	116.1	116.4	116.8	24	126.1	127.1	127.7	24	118.7	119.3	120.5	24	125.1	125.6	126.6	24	116.9	117.3	118.2	24
5/22	115.7	116.0	116.6	24	126.6	127.3	127.6	24	118.0	118.2	118.4	24	125.6	126.0	126.6	24	117.3	117.7	118.1	24
5/23	115.7	115.8	115.9	24	128.2	128.9	130.1	24	115.8	116.1	117.0	24	127.3	128.8	129.2	24	116.7	117.3	118.0	24
5/24	117.0	117.6	118.0	24	128.5	128.8	129.2	24	116.7	117.2	118.0	24	128.1	129.1	129.8	24	118.5	120.0	121.9	24
5/25	117.8	118.4	119.5	24	128.7	129.0	129.5	24	120.8	122.0	122.6	24	127.0	127.3	128.4	24	120.4	120.9	121.9	24
5/26	115.5	116.3	118.7	24	127.9	128.3	128.9	24	120.8	121.3	121.5	24	126.9	127.7	129.0	24	119.8	120.8	122.0	24
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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			# hr	<u>Bonneville</u>			# hr	<u>Warrendale</u>			# hr	<u>Camas\Washougal</u>			# hr	<u>Cascade Island</u>			# hr
	<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		
5/20	122.0	122.3	122.7	24	119.4	120.0	120.5	24	125.6	126.2	126.7	24	123.5	124.5	125.1	24	---	---	---	0
5/21	120.5	120.9	121.3	24	118.4	119.0	119.4	24	125.5	125.8	126.2	24	124.0	124.5	124.8	24	---	---	---	0
5/22	120.4	121.1	121.9	24	117.8	118.0	118.1	24	124.7	124.8	125.0	24	123.3	123.5	124.1	24	---	---	---	0
5/23	120.1	120.4	120.9	24	117.3	117.5	117.9	24	125.2	125.5	125.7	24	123.2	123.6	124.1	24	---	---	---	0
5/24	121.8	122.6	124.1	24	118.7	120.1	121.3	24	125.9	126.7	127.1	24	124.6	125.5	125.8	24	---	---	---	0
5/25	123.0	123.7	124.4	24	121.9	122.1	122.4	24	128.0	128.4	128.8	24	125.9	126.2	126.6	24	---	---	---	0
5/26	122.0	122.8	123.2	24	119.6	120.5	121.0	24	126.8	127.3	128.3	24	125.5	125.9	126.4	24	---	---	---	0
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	---	---	---	0	127.3	127.6	128.2	24	125.9	126.1	126.3	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											
	05/26/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/02/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/21/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	05/25/11	Chinook + Steelhead	104	5	5	4.81%	0.00%	5	0	0	0
	05/28/11	Chinook + Steelhead	100	24	23	23.00%	1.00%	19	3	1	0
McNary Dam											
	05/22/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/26/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/01/11	Chinook + Steelhead	100	5	5	5.00%	0.00%	5	0	0	0
Bonneville Dam											
	05/21/11	Chinook + Steelhead	70	0	0	0.00%	0.00%	0	0	0	0
	05/24/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	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
Rock Island Dam											
	05/24/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/26/11	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	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

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)	
05/20/2011	*	---	73	---	32,731	90,171	45,155	848	---	106,550	13,342	
05/21/2011	*	---	68	---	12,069	27,051	37,738	870	72,045	134,913	14,576	
05/22/2011	*	---	81	---	21,972	36,672	51,389	889	---	169,855	10,584	
05/23/2011	*	---	74	---	25,817	---	---	605	66,001	140,416	7,308	
05/24/2011	*	---	63	---	22,584	---	---	544	---	130,014	6,897	
05/25/2011	*	---	20	---	20,858	---	263	443	74,630	73,509	6,518	
05/26/2011	*	---	7	---	13,519	---	---	377	---	87,998	4,481	
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	*	---	---	---	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	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	34	359	0	191,205	155,469	171,645	6,595	352,785	1,115,946	80,139
# Days:		0	5	5	0	14	9	10	14	7	14	14
Average:		0	7	72	0	13,658	17,274	17,165	471	50,398	79,710	5,724
YTD		31,090	30,134	12,492	18,836	3,797,145	2,488,229	1,223,839	25,657	1,931,015	2,839,135	1,307,297

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)	
05/20/2011	*	---	0	---	10,580	2,555	214	33	---	2,036	2,904	
05/21/2011	*	---	1	---	8,258	1,905	457	75	31,535	2,618	1,770	
05/22/2011	*	---	0	---	3,612	3,020	0	50	---	4,373	1,330	
05/23/2011	*	---	0	---	9,403	---	---	130	32,550	8,147	1,475	
05/24/2011	*	---	0	---	5,646	---	---	158	---	7,489	1,473	
05/25/2011	*	---	1	---	23,117	---	10	118	34,773	10,764	2,422	
05/26/2011	*	---	0	---	30,549	---	---	207	---	9,558	2,923	
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	*	---	---	---	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	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	2	1	0	368,590	124,566	72,829	2,829	244,454	103,929	38,476
# Days:		0	5	5	0	14	9	10	14	7	14	14
Average:		0	0	0	0	26,328	13,841	7,283	202	34,922	7,424	2,748
YTD		9	36	12	163	423,230	130,613	74,191	4,169	311,142	115,104	2,673,080

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)	
05/20/2011	*	---	---	0	---	1,924	9,368	2,148	1,009	---	16,571	22,764
05/21/2011	*	---	---	0	---	1,906	3,809	2,744	2,050	9,602	17,847	18,116
05/22/2011	*	---	---	0	---	2,558	2,157	1,469	2,721	---	23,814	10,708
05/23/2011	*	---	---	0	---	2,709	---	---	2,446	5,744	30,671	8,271
05/24/2011	*	---	---	0	---	4,277	---	---	2,389	---	27,840	5,308
05/25/2011	*	---	0	---	---	1,738	---	2	1,963	17,492	15,273	7,211
05/26/2011	*	---	0	---	---	2,458	---	---	2,176	---	20,274	2,495
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	*	---	---	---	---	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	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	26,754	15,653	12,603	29,420	67,305	233,829	90,826
# Days:		0	5	5	0	14	9	10	14	7	14	14
Average:		0	0	0	0	1,911	1,739	1,260	2,101	9,615	16,702	6,488
YTD		0	0	0	218	75,730	74,919	17,939	37,833	141,553	404,799	424,752

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)	
05/20/2011	*	---	---	64	---	57,516	131,135	76,753	662	---	121,085	6,442
05/21/2011	*	---	---	44	---	30,491	18,410	42,539	1,029	18,692	182,740	7,809
05/22/2011	*	---	---	50	---	51,018	43,309	33,558	1,825	---	185,648	8,913
05/23/2011	*	---	---	29	---	36,813	---	---	1,189	19,160	131,309	6,911
05/24/2011	*	---	---	33	---	67,238	---	---	798	---	95,231	6,723
05/25/2011	*	---	91	---	---	39,977	---	406	674	18,783	65,378	3,881
05/26/2011	*	---	124	---	---	56,358	---	---	610	---	61,964	3,039
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	*	---	---	---	---	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	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	298	220	0	498,084	198,394	291,282	10,473	91,209	1,106,136	59,702
# Days:		0	5	5	0	14	9	10	14	7	14	14
Average:		0	60	44	0	35,577	22,044	29,128	748	13,030	79,010	4,264
YTD		1,080	13,677	4,071	2,934	3,956,707	1,910,105	789,341	20,186	590,488	2,456,046	230,362

Two-Week Summary of Passage Indices

COMBINED SOCKEYE												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
05/20/2011	*	---	---	0	---	3,527	1,290	214	2,821	---	14,391	3,080
05/21/2011	*	---	---	0	---	4,129	6	228	1,330	18,911	22,367	3,540
05/22/2011	*	---	---	0	---	6,923	3,905	419	1,120	---	16,766	2,157
05/23/2011	*	---	---	0	---	8,287	---	---	557	30,569	20,607	2,831
05/24/2011	*	---	---	1	---	5,304	---	---	505	---	30,143	4,540
05/25/2011	*	---	0	---	---	10,081	---	32	397	18,857	16,188	5,400
05/26/2011	*	---	0	---	---	2,634	---	---	437	---	26,416	2,555
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	*	---	---	---	---	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	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	1	0	50,979	9,915	15,579	9,204	105,498	199,724	37,545
# Days:		0	5	5	0	14	9	10	14	7	14	14
Average:		0	0	0	0	3,641	1,102	1,558	657	15,071	14,266	2,682
YTD		0	0	1	0	104,385	32,747	23,400	16,436	296,054	333,190	101,379

COMBINED LAMPREY JUVENILES												
	WTB	IMN	GRN	LEW	LGR [†]	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	
05/20/2011	*	---	---	0	---	600	448	4	---	2,083	500	
05/21/2011	*	---	---	0	---	600	0	1	11,100	14,429	150	
05/22/2011	*	---	---	0	---	110	0	0	---	30,000	383	
05/23/2011	*	---	---	0	---	100	---	---	1	42,000	32,285	614
05/24/2011	*	---	---	0	---	0	---	---	1	---	42,786	743
05/25/2011	*	---	0	---	---	100	---	0	11,000	26,143	658	
05/26/2011	*	---	0	---	---	0	---	---	0	---	29,441	430
05/27/2011	*	---	---	---	---	0	---	---	0	4,200	13,343	330
05/28/2011	*	---	---	---	---	0	0	0	---	10,592	440	
05/29/2011	*	---	---	---	---	0	20	0	2,300	4,543	425	
05/30/2011	*	---	0	---	---	0	4	0	---	5,500	78	
05/31/2011	*	---	---	---	---	0	0	0	1	12,250	4,429	153
06/01/2011	*	---	0	---	---	0	0	0	---	10,400	80	
06/02/2011	*	---	0	---	---	0	0	1	9,400	19,300	74	
06/03/2011	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	200	1,334	448	11	92,250	245,274	5,058
# Days:		0	5	5	0	14	9	10	14	7	14	14
Average:		0	0	0	0	14	148	45	1	13,179	17,520	361
YTD		0	0	0	0	5,527	10,643	746	276	121,660	378,207	24,003

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:

6/3/11 10:09 AM

		05/20/11	TO	06/03/11			
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	226,700	116,527	16,200	303,673	31,000	694,100
	Sum of NumberBarged	161,585	61,193	8,401	166,622	13,415	411,216
	Sum of NumberBypassed	64,314	55,204	7,795	136,997	17,499	281,809
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	23	6	0	4	5	38
	Sum of FacilityMorts	778	85	4	33	81	981
	Sum of ResearchMorts	0	39	0	17	0	56
	Sum of TotalProjectMorts	801	130	4	54	86	1,075
LGS	Sum of NumberCollected	17,452	68,274	6,610	88,455	2,899	183,690
	Sum of NumberBarged	17,413	67,350	6,609	88,218	2,878	182,468
	Sum of NumberBypassed	28	0	0	0	0	28
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	20	0	3	1	25
	Sum of FacilityMorts	10	904	1	234	20	1,169
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	11	924	1	237	21	1,194
LMN	Sum of NumberCollected	49,085	116,568	8,330	194,058	10,315	378,356
	Sum of NumberBarged	48,696	115,857	8,425	191,384	10,237	374,599
	Sum of NumberBypassed	38	229	1	432	19	719
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	0	0	1	0	1
	Sum of FacilityMorts	351	482	4	441	59	1,337
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	351	482	4	442	59	1,338
MCN	Sum of NumberCollected	74,823	109,711	20,744	28,374	32,757	266,409
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	74,297	108,399	20,648	28,313	32,585	264,242
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	9	65	2	1	14	91
	Sum of FacilityMorts	517	1,247	94	60	158	2,076
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	526	1,312	96	61	172	2,167
Total Sum of NumberCollected		368,060	411,080	51,884	614,560	76,971	1,522,555
Total Sum of NumberBarged		227,694	244,400	23,435	446,224	26,530	968,283
Total Sum of NumberBypassed		138,677	163,832	28,444	165,742	50,103	546,798
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		33	91	2	9	20	155
Total Sum of FacilityMorts		1,656	2,718	103	768	318	5,563
Total Sum of ResearchMorts		0	39	0	17	0	56
Total Sum of TotalProjectMorts		1,689	2,848	105	794	338	5,774

YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/3/11 10:09 AM

TO: 06/03/11

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	254,375	2,695,830	49,759	68,589	2,612,274	5,680,827
	Sum of NumberBarged	171,830	1,684,081	35,238	26,024	1,340,049	3,257,222
	Sum of NumberBypassed	81,727	1,009,672	14,507	42,055	1,271,931	2,419,892
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	30	101	1	66	36	234
	Sum of FacilityMorts	788	1,735	13	444	200	3,180
	Sum of ResearchMorts	0	241	0	0	58	299
	Sum of TotalProjectMorts	818	2,077	14	510	294	3,713
LGS	Sum of NumberCollected	20,059	1,427,112	37,610	17,593	1,065,268	2,567,642
	Sum of NumberBarged	20,007	1,322,184	37,209	12,249	826,279	2,217,928
	Sum of NumberBypassed	34	103,168	400	5,227	238,633	347,462
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	50	0	7	7	65
	Sum of FacilityMorts	17	1,710	1	110	349	2,187
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	18	1,760	1	117	356	2,252
LMN	Sum of NumberCollected	49,981	845,575	11,910	15,781	534,302	1,457,549
	Sum of NumberBarged	49,144	628,797	10,809	13,995	433,652	1,136,397
	Sum of NumberBypassed	486	215,285	1,194	1,585	98,096	316,646
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	2	0	0	4	6
	Sum of FacilityMorts	351	1,488	9	201	750	2,799
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	351	1,490	9	201	754	2,805
MCN	Sum of NumberCollected	99,973	937,855	57,300	126,039	290,381	1,511,548
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	99,427	935,709	57,187	125,787	290,224	1,508,334
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	19	139	3	19	10	190
	Sum of FacilityMorts	527	2,007	110	233	147	3,024
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	546	2,146	113	252	157	3,214
Total Sum of NumberCollected		424,388	5,906,372	156,579	228,002	4,502,225	11,217,566
Total Sum of NumberBarged		240,981	3,635,062	83,256	52,268	2,599,980	6,611,547
Total Sum of NumberBypassed		181,674	2,263,834	73,288	174,654	1,898,884	4,592,334
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		50	292	4	92	57	495
Total Sum of FacilityMorts		1,683	6,940	133	988	1,446	11,190
Total Sum of ResearchMorts		0	241	0	0	58	299
Total Sum of TotalProjectMorts		1,733	7,473	137	1,080	1,561	11,984

Cumulative Adult Passage at Mainstem Dams Through: 06/02

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	06/02	167097	50945	244384	12612	174444	16431	4063	2267	6554	597	3176	444	0	0	0	0	0	0
TDA	06/02	123121	38948	187297	11305	128691	13260	0	0	0	0	0	0	0	0	0	0	0	0
JDA	06/02	100703	36740	171891	11151	106913	11523	0	0	0	0	0	0	0	0	0	0	0	0
MCN	06/02	96070	26669	140976	8061	95545	10184	0	0	0	0	0	0	0	0	0	0	0	0
IHR	06/02	63736	13251	95398	5634	63609	5919	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/02	61939	12367	90643	5463	60897	4424	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/02	56104	14061	84442	4786	54616	4659	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/02	45705	11578	81450	5343	52630	5495	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/31	12673	3607	26980	816	17806	655	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/01	10181	3619	26248	1169	14562	1133	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/01	4447	1256	7977	401	5429	335	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/01	2298	831	6455	473	3193	258	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/31	18971	480	43696	1004	-	-	-	-	-	-	-	-	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
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	0	0	0	0	0	0	14	440	138	4044	7992	5067	1347
TDA	0	0	0	0	0	0	1	170	51	1467	2554	1633	757
JDA	0	0	0	0	0	0	0	77	28	2823	2646	2979	1756
MCN	0	0	0	0	0	0	0	22	3	2640	2398	2246	1579
IHR	0	0	0	0	0	0	0	0	0	3056	3067	2499	1202
LMN	0	0	0	0	0	0	0	0	0	3890	4126	2909	2188
LGS	0	0	0	0	0	0	0	0	0	6206	3137	2908	3327
LGR	0	0	0	0	0	0	0	0	0	12298	10468	9332	5771
PRD	0	0	0	0	0	0	2	0	0	41	86	33	0
RIS	0	0	0	0	0	0	0	0	1	71	114	75	48
RRH	0	0	0	0	0	0	0	0	0	546	351	236	484
WEL	0	0	0	0	0	0	0	0	0	123	98	51	97
WFA	0	0	0	0	-	-	-	-	-	14405	21066	-	-

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: 06/03/11

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