

# Fish Passage Center Weekly Report #08 - 11

May 16, 2008

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#### **Summary of Events:**

Water Supply: Precipitation throughout the Columbia Basin has varied between 2% and 94% of average at individual sub-basins over May. Precipitation above The Dalles has been 43% of average over May. Over the entire water year, precipitation has generally been near or above 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.

|                      | Water Ye |         | Water Year 2008<br>October 1, 2007 to<br>May 1-12 2008 |         |  |  |
|----------------------|----------|---------|--|---------|--|--|
|                      | Observed | %       | Observed   | %       |  |  |
| Location             | (inches) | Average | (inches)   | Average |  |  |
| Columbia Above       | 0.56     | 65      | 16.73  | 100     |  |  |
| Coulee               |          |         |  |         |  |  |
| Snake River Above    | 0.27     | 37      | 12.73  | 102     |  |  |
| Ice Harbor           |          |         |  |         |  |  |
| Columbia Above The   | 0.33     | 43      | 16.72  | 100     |  |  |
| Dalles               |          |         |  |         |  |  |
| Kootenai             | 0.66     | 77      | 16.19  | 94      |  |  |
| Clark Fork           | 0.19     | 23      | 11.23  | 102     |  |  |
| Flathead             | 0.88     | 94      | 14.50  | 99      |  |  |
| Pend Oreille/Spokane | 0.29     | 28      | 24.27  | 103     |  |  |
| Central Washington   | 0.01     | 2       | 4.88   | 71      |  |  |
| Snake River Plain    | 0.26     | 46      | 6.46   | 84      |  |  |
| Salmon/Boise/Payette | 0.07     | 10      | 15.63  | 104     |  |  |
| Clearwater           | 0.17     | 15      | 22.29  | 83      |  |  |
| SW Washington        | 0.33     | 22      | 55.68  | 92      |  |  |
| Cascades/Cowlitz     |          |         |  |         |  |  |
| Willamette Valley    | 0.17     | 12      | 53.42  | 104     |  |  |

Snowpack within the Columbia Basin is above average. Average snowpack in the Columbia River for basins above the Snake River confluence is

136% of average, for Snake River Basins the average snowpack is 107% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 373% of average.

Table 2 displays the April Final and May Final runoff volume forecasts for multiple reservoirs. Water Supply Forecasts decreased slightly between the April Final and May Final forecasts. The current forecast (May Final) at The Dalles between January and July is 97300 Kaf (91% of average).

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

|                  | Apri    | Final    | May     | <b>Final</b> |
|------------------|---------|----------|---------|--------------|
|                  | %       | Probable | %       | Probable     |
|                  | Average | Runoff   | Average | Runoff       |
|                  | (1971-  | Volume   | (1971-  | Volume       |
| Location         | 2000)   | (Kaf)    | 2000)   | (Kaf)        |
| The Dalles (Jan- | 94      | 101000   | 91      | 97300        |
| July)            |         |          |         |              |
| Grand Coulee     | 97      | 61200    | 95      | 59800        |
| (Jan-July)       |         |          |         |              |
| LibbyRes.        | 96      | 6080     | 92      | 5820         |
| Inflow, MΓ       |         |          |         |              |
| (Jan-July)       |         |          |         |              |
| Hungry Horse     | 96      | 2140     | 91      | 2030         |
| Res. Inflow, MT  |         |          |         |              |
| (Jan-July)       |         |          |         |              |
| Lower Granite    | 108     | 23300    | 101     | 21800        |
| Res. Inflow      |         |          |         |              |
| (Apr-July)       |         |          |         |              |
| Brownlee Res.    | 86      | 5400     | 77      | 4860         |
| Inflow           |         |          |         |              |
| (Apr-July)       |         |          |         |              |
| Dworshak Res.    | 120     | 3160     | 111     | 2930         |
| Inflow           |         |          |         |              |
| (Apr-July)       |         |          |         |              |

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite) and began on April 10th in the mid (Priest Rapids) and lower (McNary) Columbia River. According to the April Final Water Supply Forecast, the flow objectives this spring are 100 Kcfs at Lower Granite, 260 Kcfs at McNary, and 135 Kcfs at Priest Rapids. Generally, flows have increased over the last week. Flows at Lower Granite Dam have averaged 87.5 Kcfs over the last week and 63.1 Kcfs over the spring season, flows at Priest Rapids have averaged 155.3 Kcfs over the last week and 111.8 Kcfs over the spring season and flows at McNary have averaged 260.7 Kcfs over the last week and 191.7 Kcfs over the spring season.

Grand Coulee Reservoir is at 1229.3 feet (5-15-08) and has refilled 0.6 feet over the last week. Outflows at Grand Coulee have ranged between 121.0 and 155.5 Kcfs over the last week. Inflows last week have ranged between 131.5 Kcfs and 149.8 Kcfs.

The Libby Reservoir is currently at elevation 2397.5 feet (5-15-08) and refilled 0.3 feet last week. Outflows at Libby were increased to 13.8 Kcfs on May 10th, 2008. Inflows at Libby have ranged between 13.6 Kcfs to 16.2 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3505.2 ft (5-15-08) and has refilled 2.8 feet last week. Outflows were 4.4-4.7 Kcfs last week; inflows ranged between 7.9 kcfs and 9.9 Kcfs last week.

Dworshak is currently at an elevation of 1488.1 feet (5-15-08) and refilled 8.2 feet last week. Outflows were reduced to approximately 5 Kcfs on 5-12-08. At the TMT meeting on 5-14-08, it was decided to maintain outflows of 5 Kcfs over the next week. Dworshak inflows have ranged between 10.8 and 16.3 Kcfs last week.

The Brownlee Reservoir is at an elevation of 2037.6 feet (May 15th, 2008), refilling 3.8 feet last week. Outflows at Brownlee Dam have been 7.1 to 21.9 Kcfs over the last week. Inflows at Brownlee Dam have been 17.9 to 21.0 Kcfs over the last week.

Spill: In accordance with the Court Order, spill was initiated at the Snake River Projects at 0001 hours on April 3, 2007. The Court Order calls for the following spill levels at the Federal Snake River Projects:

| Project             | Day/Night Spill                    |
|---------------------|------------------------------------|
| Lower<br>Granite    | 20Kcfs/20Kcfs                      |
| Little Goose        | 30% /30%                           |
| Lower<br>Monumental | Gas Cap/Gas Cap                    |
| Ice Harbor          | 30%/30% vs 45Kcfs/Gas<br>Cap Study |

Spill at Lower Granite Dam exceeded the Court Order when flow increased and exceeded powerhouse capacity, but dropped to about 20 Kcfs over the past five days. Presently, two units are out of service at this project limiting powerhouse capacity to about 70 Kcfs. Little Goose Dam has been meeting the 30% spill, except earlier in the week when spill was decreased due to a TDG reading of 115.5% in the Lower Monumental forebay. The project has been testing bulk versus flat spill patterns. At Lower Monumental Dam spill to the gas cap has been constrained, however neither the tailrace monitor nor the downstream monitor registered TDG in excess of the waivers. Spill at this project was increased to about 27 Kcfs on May 15. Spill at Ice Harbor Dam has met the court ordered levels of 45 Kcfs daytime spill and gas cap nighttime spill alternating with 30% instantaneous spill.

Court ordered spill at the lower Columbia projects began on April 10, 2007. The Court Order calls for the following spill levels at the Federal Lower Columbia River Projects: (Table on Following Page)

| Project    | Day/Night Spill   |
|------------|-------------------|
| McNary     | 40%/40%           |
| John Day   | 0/60%; 30%/30% vs |
|            | 40%/40% test      |
| The Dalles | 40%/40%           |
| Bonneville | 100 Kcfs/100 Kcfs |

Spill at McNary and The Dalles dams met the Court ordered spill this past week. At John Day Dam TSW testing began on April 29th. During TSW testing, spill at John Day Dam alternates between 30% of instantaneous flow for 24 hours and 40% of instantaneous flow for 24 hours. Spill at Bonneville Dams averaged just over 97 Kcfs, with the exception of last Friday and Monday when spill exceeded 100 Kcfs. The increased spill was due to an operation to clear debris from the spillway. The Cascade Island gage exceeded 120% during these higher spill events and the Camas/Washougal gage read in excess of 115% on May 15.

Gas bubble trauma (GBT) monitoring occurred at all the Snake River sites, Rock Island Dam and at Bonneville Dam. There were no observations of GBT at Lower Granite, Little Goose, or McNary dams this week. At both Lower Monumental (5/13) and Bonneville (5/10) dams 1 of 100 (1%) fish sampled was observed with minor signs of GBT. Finally, on May 12th and 15th, Rock Island Dam had a 2% and 1% occurrence of minor signs of GBT, respectively.

**Smolt Monitoring:** Relatively large numbers of smolts continue to be captured at SMP traps over the past week as hatchery releases and wild out-migrants continued passing the traps steadily. The Salmon River Trap was removed for this season yesterday. Flows are anticipated to increase rapidly in the Salmon River in the next few days such that debris and high discharge would make sampling impossible. The Grande Ronde Trap was removed from the thalweg due to high flows and debris in that river. Smolt passage continued to pick up in the hydrosystem this past week as well; with daily passage indices at Lower Granite Dam averaging nearly 170,000 yearling Chinook and 120,000 per day for steelhead smolts.

At the Salmon River Trap catch began to

decline over the week. Flows have been relatively high and the trap was removed from the thalweg. Finally, on May 15 the trapped was removed from the river due to anticipated high flows with the onset of hot weather in Idaho. This week the catch was predominantly hatchery origin steelhead. Sampling was limited to 3 days this past week as the trap was hauled out of the main channel. Small numbers of Chinook and steelhead were captured during a period of decreased flows. At the Imnaha River Trap the numbers of yearling Chinook captured declined to fewer than 20 per day over the past week while steelhead capture has remained high averaging over 450 per day. At the Grande Ronde Trap they captured about 170 yearling Chinook per day over the past week compared to roughly 100 steelhead per day.

At the Lewiston Trap on the Snake River IDFG crews caught decreased numbers of yearling Chinook and steelhead compared to last week. However the numbers caught per day suggest that spring migrants are passing into the Lower Snake River in large numbers. Flows have fluctuated up and down around historic average, the past week.

At Lower Granite Dam the daily passage indices for yearling Chinook rose to 270,000 fish on May 8, and the daily indices have steadily declined since that date. The flows at Lower Granite Dam mirror this trend in Chinook smolt daily passage, with flows for the spring peaking at 108 Kcfs on May 8 and declining since then. Steelhead indices peaked on May and have declined since that date. The yearling Chinook timing appears late this season while steelhead timing has been relatively early. In the past week and estimated 2.9 million yearling Chinook have passed the project (based on the population index) while the population index for steelhead was estimated at 2.3 million. Collection for transportation began at Lower Granite Dam on May 1.

Spring migrant passage increased over the past week at all Lower Columbia SMP sites as well as at Rock Island Dam in the Mid-Columbia. In the lower River at McNary, John Day and Bonneville dams passage indices for all spring migrants continued to increase. Yearling Chinook and steel-head passage indices rose to seasonal highs of

153,000 and 54,000 (respectively) at McNary on May 13. Coho and Sockeye passage indices continued to increase as well over the past week. At Bonneville Dam passage numbers of subyearling Chinook continued to decrease over the past several days as the most recent release of Spring Creek Hatchery fish passed the dam. The peak passage occurred on May 4 and 5 when the daily index rose to 233,000 on the 4th and then 242,000 the 5th. The subvearling index was below 1,000 fish on May 15. This week at Bonneville an increased incidence of descaling occurred at Bonneville Dam. SMP crews reported descaling ratesas high as 18% for Chinook and 10% for coho, in May 13 samples taken from 1100 to 0700 hours on May 14. The rate was a bit lower for the fish sampled from 0700 hours to noon (6-7%) on May 14, but was still considered much higher than normally observed. FPAC requested that debris be removed from trash racks. The COE reported that trash racks were raked on May 14. Subsequent samples at Bonneville Dam indicated a decrease in the incidence of descaling to under 1% for steelhead on May 15, while yearling Chinook descaling rate was just over 4% on that date.

#### 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. A Nez Perce Tribal release of approximately 200,000 subyearling Chinook to Lapwai Creek was scheduled to end this week. Nearly 370,000 summer steelhead were scheduled for release into this zone this week. Of these, about 67% were scheduled for release into the Salmon River, while the remaining 33% were scheduled for release into the Wallowa River. There were no other scheduled releases of juvenile salmonid to this zone this week.

Approximately 2.2 million subyearling fall Chinook are scheduled for release into this zone over the next two weeks. Of these, 800,000 from the Umatilla Hatchery will be released into the Snake River, below Hells Canyon Dam, beginning May 20th. Also scheduled for release into the Snake River are 400,000 subyearling Chinook

juveniles from Pittsburg Landing Acclimation Pond and 500,000 juveniles from Captain Johns Rapids Acclimation Pond. Finally, about 500,000 of these subyearlings will be released from the Big Canyon Creek Acclimation Facility on the Clearwater River. These acclimation releases are scheduled to take place during the last week of May.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Several volitional releases totaling approximately 1.26 million yearling spring Chinook were scheduled to end this week. Of these, approximately 51% were being release from acclimation facilities on the Yakima River, while the remaining 49% were released into the Wenatchee River. Wells Hatchery was scheduled to begin releasing approximately 242,000 subyearling Chinook juveniles into the Mid-Columbia River this week. This release is expected to end next week. In addition, nearly 143,000 yearling summer Chinook juveniles were scheduled for release into the Mid-Columbia River this week. Finally, the Yakama Tribal releases of coho to the Methow, Wenatchee, and Yakima rivers continued this week. These releases are part of the tribal program to re-establish coho runs to these basins and are expected to run through the end of May.

Several on-going releases of summer steelhead to the Methow and Okanogan rivers are scheduled to end early next week. These releases began in late April and are expected to total about 448,000 juveniles. There are no other scheduled releases of juvenile salmonids to 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. Approximately 600,000 subyearling fall Chinook were scheduled for release into the Umatilla River this week. Also, several releases of summer and winter steelhead to the White Salmon, Hood, and Klickitat rivers were scheduled to end this week. In all, these releases are expected to total nearly 119,000 summer steelhead and 85,616 winter steelhead juveniles. There are no other releases of juvenile salmonids scheduled for this zone over the next two weeks.

#### **Adult Fish Passage**

Adult counts at Bonneville Dam have been updated through May 15th. Between March 15th and May 15th, 101,170 adult spring Chinook had passed Bonneville Dam. Daily adult spring Chinook counts at Bonneville ranged from 2,129 to 5,596. The 2008 count was about 1.83 times larger than the 2007 adult spring Chinook count of 55,028 at Bonneville Dam but is about 76.1% of the ten year average. The 2008 spring Chinook jack count at Bonneville Dam of 10,564 is about 93.1% of the 2007 count and is 1.58 times higher than the ten year average. The 2008 Bonneville adult steelhead count was 2,499 fish, as of May 15th, which was 107 more fish when compared to the 2007 count of 2,392 fish. The 2008 wild steelhead count at Bonneville Dam was 776 fish. At Willamette Falls Dam, the 2008 count for steelhead was 7,596, as of May 14th. This year's steelhead count has 92 fewer fish than the 2007 count of 7.688 at Willamette Falls Dam.

At upriver sites, adult steelhead continue to move through the hydro system to reach their tributaries and spawning sites. The majority of these fish over-wintered in the pools and will complete their trip to the spawning grounds in March through early May. Daily counts at Lower Granite ranged from 21 to 36 adult steelhead last week. The total steelhead count passing at Lower Granite Dam as of May 14th was 7.651. The 2008 count was about 72.5% of the 2007 count of 10.545. The 2008 Lower Granite adult steelhead count had 274 more fish than the 10-year average count of 7,377. The 2008 wild steelhead count at Lower Granite Dam as of May 14th was 2,383. At Rock Island Dam, as of May 14th, 202 adult steelhead had been counted and at Rocky Reach Dam 375 adult steelhead had been counted so far this season.

Washington and Oregon officials have downgraded their forecast of 2008 upper Columbia River spring Chinook salmon run size from 269,300 to 180,000 or less. Washington and Oregon state officials met on Monday and decided to postpone the fishery for hatchery origin summer steelhead from Interstate 5 downstream to the ocean. This action was taken to avoid incidental catches of spring Chinook salmon. Allen Thomas,

a Columbian staff writer, reported in an article on Monday May 12th that the start of summer steelhead fishing in the lower Columbia River was scheduled to open on Friday, however, it is being postponed indefinitely for the former stated reason.

A statement from the National Oceanic and Atmospheric Administration on May 14th stated that the six sea lions found dead on May 4th in traps near Bonneville Dam actually died of heat exhaustion. The determination was made after reviewing necropsy findings on four of the sea lions that were found dead. Investigators hope studies of tissue samples will be able to provide more conclusive information.

| Daily Average | Flow and Sp | oill (in kcfs) | ) at Mid-Columbia | Projects |
|---------------|-------------|----------------|-------------------|----------|
|               |             |                |                   |          |

|            | Gr    | and   | Chi   | ef    |       |       | Rocky |       | Rock  |       |       |       | Pr    | iest  |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | Co    | ulee  | Jose  | ph    | We    | ells  | Re    | ach   | Isla  | nd    | Wan   | apum  | Ra    | pids  |
| Date       | Flow  | Spill |
| 05/02/2008 | 98.3  | 0.0   | 101.1 | 0.0   | 102.9 | 7.5   | 102.8 | 0.0   | 103.8 | 11.8  | 110.1 | 16.5  | 104.0 | 20.3  |
| 05/03/2008 | 98.2  | 0.0   | 99.7  | 0.0   | 102.8 | 7.3   | 97.0  | 0.0   | 100.5 | 11.5  | 93.5  | 17.4  | 96.2  | 20.5  |
| 05/04/2008 | 63.5  | 0.0   | 65.4  | 0.0   | 82.4  | 6.1   | 88.8  | 0.0   | 92.8  | 9.8   | 100.2 | 17.5  | 96.2  | 20.1  |
| 05/05/2008 | 105.7 | 0.0   | 103.4 | 0.0   | 99.2  | 7.9   | 92.5  | 0.2   | 94.3  | 11.4  | 96.6  | 17.3  | 91.2  | 20.2  |
| 05/06/2008 | 107.5 | 0.0   | 108.6 | 0.0   | 113.8 | 8.0   | 108.2 | 0.0   | 112.4 | 11.1  | 100.7 | 18.5  | 94.8  | 20.5  |
| 05/07/2008 | 112.0 | 0.0   | 111.4 | 0.0   | 121.7 | 8.3   | 125.9 | 0.0   | 131.9 | 10.5  | 136.5 | 19.6  | 128.4 | 22.2  |
| 05/08/2008 | 117.7 | 0.0   | 125.9 | 0.0   | 137.7 | 8.7   | 130.4 | 0.0   | 134.8 | 13.0  | 144.4 | 19.2  | 142.8 | 21.4  |
| 05/09/2008 | 139.8 | 0.0   | 133.9 | 0.0   | 145.1 | 8.9   | 139.4 | 0.0   | 142.6 | 13.8  | 152.8 | 19.2  | 146.8 | 21.5  |
| 05/10/2008 | 121.0 | 0.0   | 130.0 | 0.0   | 138.0 | 8.6   | 135.4 | 0.0   | 138.1 | 13.2  | 146.0 | 19.1  | 148.9 | 21.6  |
| 05/11/2008 | 124.0 | 0.0   | 118.0 | 0.0   | 133.1 | 8.7   | 131.0 | 0.0   | 139.6 | 14.1  | 156.7 | 19.0  | 147.6 | 22.1  |
| 05/12/2008 | 155.5 | 0.0   | 156.3 | 0.0   | 163.4 | 10.0  | 155.4 | 0.0   | 157.9 | 14.7  | 156.4 | 19.1  | 158.0 | 19.8  |
| 05/13/2008 | 134.7 | 0.0   | 151.2 | 0.0   | 171.2 | 10.0  | 168.4 | 0.0   | 172.1 | 16.0  | 170.5 | 28.2  | 158.7 | 24.4  |
| 05/14/2008 | 129.1 | 0.0   | 127.5 | 0.0   | 150.9 | 10.0  | 149.7 | 0.0   | 156.0 | 16.1  | 168.1 | 26.9  | 176.3 | 20.5  |
| 05/15/2008 | 131.0 | 0.0   | 126.4 | 0.0   | 130.5 | 10.0  | 125.5 | 0.0   | 132.9 | 16.8  | 158.5 | 18.9  | 150.7 | 20.6  |

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

|            |      |       |          | Hells   | Lov   | Lower   |       | ttle  | Low   | ver   | Ice   |       |
|------------|------|-------|----------|---------|-------|---------|-------|-------|-------|-------|-------|-------|
|            | Dwo  | rshak | Brownlee | Canyon  | Gra   | Granite |       | Goose |       | ental | Hai   | rbor  |
| Date       | Flow | Spill | Inflow   | Outflow | Flow  | Spill   | Flow  | Spill | Flow  | Spill | Flow  | Spill |
| 05/02/2008 | 10.7 | 0.0   | 17.5     | 14.5    | 63.5  | 20.4    | 62.3  | 28.0  | 60.7  | 23.8  | 61.7  | 22.8  |
| 05/03/2008 | 10.8 | 0.0   | 16.6     | 14.8    | 62.3  | 20.3    | 62.1  | 29.1  | 61.5  | 23.8  | 65.2  | 19.5  |
| 05/04/2008 | 10.8 | 0.0   | 17.4     | 17.2    | 63.2  | 20.3    | 63.1  | 29.0  | 61.2  | 23.8  | 64.9  | 43.7  |
| 05/05/2008 | 10.7 | 0.0   | 18.1     | 20.1    | 74.0  | 20.2    | 72.0  | 30.7  | 71.2  | 23.1  | 76.9  | 50.8  |
| 05/06/2008 | 10.7 | 0.0   | 19.4     | 13.6    | 83.9  | 20.1    | 82.0  | 31.3  | 79.5  | 20.6  | 81.0  | 30.6  |
| 05/07/2008 | 10.4 | 0.0   | 19.6     | 15.7    | 87.5  | 20.3    | 84.8  | 31.1  | 86.6  | 19.7  | 88.0  | 26.2  |
| 05/08/2008 | 7.5  | 0.0   | 20.9     | 20.5    | 101.2 | 32.8    | 100.7 | 34.6  | 100.8 | 21.5  | 105.3 | 54.1  |
| 05/09/2008 | 7.4  | 0.0   | 20.9     | 21.4    | 97.8  | 28.6    | 95.2  | 32.2  | 94.1  | 24.5  | 97.4  | 59.8  |
| 05/10/2008 | 7.4  | 0.0   | 21.0     | 21.6    | 93.4  | 24.2    | 91.6  | 27.4  | 90.7  | 26.6  | 95.2  | 39.3  |
| 05/11/2008 | 7.2  | 0.0   | 19.7     | 21.6    | 89.5  | 20.5    | 86.9  | 23.8  | 85.1  | 27.9  | 87.0  | 26.2  |
| 05/12/2008 | 5.0  | 0.0   | 19.9     | 24.0    | 88.5  | 20.7    | 86.8  | 23.8  | 87.6  | 26.2  | 91.3  | 28.2  |
| 05/13/2008 | 4.9  | 0.0   | 19.1     | 23.7    | 87.0  | 20.7    | 85.2  | 25.6  | 83.5  | 22.8  | 85.9  | 25.8  |
| 05/14/2008 | 5.0  | 0.0   | 17.9     | 9.8     | 76.4  | 20.6    | 74.3  | 22.1  | 71.9  | 24.0  | 75.8  | 44.3  |
| 05/15/2008 | 5.0  | 0.0   |          |         | 79.9  | 20.5    | 77.3  | 23.1  | 77.9  | 26.7  | 81.2  | 56.4  |

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

|            | Mcl   | Nary  | John [ | Day   | The D | alles | Bonneville |       |      |       |
|------------|-------|-------|--------|-------|-------|-------|------------|-------|------|-------|
| Date       | Flow  | Spill | Flow   | Spill | Flow  | Spill | Flow       | Spill | PH1  | PH2   |
| 05/02/2008 | 195.7 | 78.3  | 213.7  | 81.0  | 207.0 | 82.9  | 218.0      | 100.1 | 12.3 | 94.2  |
| 05/03/2008 | 182.6 | 73.5  | 180.4  | 72.3  | 169.4 | 67.7  | 183.3      | 101.0 | 0.7  | 70.6  |
| 05/04/2008 | 154.3 | 62.3  | 147.4  | 59.0  | 140.0 | 56.1  | 159.5      | 101.1 | 0.0  | 47.0  |
| 05/05/2008 | 190.8 | 76.5  | 190.1  | 76.0  | 188.8 | 75.7  | 201.0      | 99.1  | 7.2  | 83.3  |
| 05/06/2008 | 187.6 | 75.1  | 191.9  | 61.4  | 186.7 | 74.4  | 209.8      | 95.7  | 10.8 | 91.9  |
| 05/07/2008 | 241.4 | 96.9  | 240.3  | 72.5  | 230.4 | 92.2  | 236.8      | 97.0  | 37.8 | 90.7  |
| 05/08/2008 | 239.8 | 96.4  | 230.7  | 69.6  | 222.6 | 88.9  | 237.8      | 102.4 | 33.6 | 90.4  |
| 05/09/2008 | 285.6 | 114.5 | 290.9  | 87.3  | 284.2 | 113.3 | 298.0      | 102.4 | 64.7 | 119.5 |
| 05/10/2008 | 268.1 | 107.6 | 268.2  | 97.0  | 262.6 | 105.0 | 300.5      | 99.4  | 68.0 | 121.7 |
| 05/11/2008 | 224.1 | 89.7  | 209.4  | 84.0  | 203.1 | 81.6  | 239.5      | 97.1  | 29.7 | 101.3 |
| 05/12/2008 | 275.7 | 110.6 | 292.7  | 111.2 | 282.6 | 113.0 | 273.2      | 110.6 | 58.2 | 94.4  |
| 05/13/2008 | 265.6 | 107.0 | 263.8  | 105.5 | 263.4 | 105.3 | 297.8      | 97.4  | 67.4 | 121.6 |
| 05/14/2008 | 252.6 | 101.5 | 236.4  | 77.3  | 226.8 | 90.8  | 252.5      | 97.5  | 49.4 | 94.3  |
| 05/15/2008 | 253.1 | 101.5 | 260.9  | 78.4  | 249.7 | 99.6  | 272.7      | 97.1  | 52.6 | 111.6 |

# Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

|        |            |                     |           |           |           |       |          |      |      | sh with I |      |
|--------|------------|---------------------|-----------|-----------|-----------|-------|----------|------|------|-----------|------|
|        |            |                     | Number of | Number w  | Number w  | % Fin | % Severe | Rank | Rank | Rank      | Rank |
| Site   | Date       | Species             | Fish      | GBT signs | Fin Signs | GBT   | Fin GBT  | 1    | 2    | 3         | 4    |
| Low    | er Granit  | te Dam              |           |           |           |       |          |      |      |           |      |
|        | 05/06/08   | Chinook + Steelhead | 100       | 0         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
|        | 05/13/08   | Chinook + Steelhead | 99        | 0         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
| Little | e Goose    | Dam                 |           |           |           |       |          |      |      |           |      |
|        | 05/06/08   | Chinook + Steelhead | 100       | 1         | 1         | 1.00% | 0.00%    | 1    | 0    | 0         | 0    |
|        | 05/12/08   | Chinook + Steelhead | 100       | 0         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
| Low    | er Monu    | mental Dam          |           |           |           |       |          |      |      |           |      |
|        | 05/05/08   | Chinook + Steelhead | 100       | 1         | 1         | 1.00% | 0.00%    | 1    | 0    | 0         | 0    |
|        | 05/13/08   | Chinook + Steelhead | 100       | 1         | 1         | 1.00% | 0.00%    | 1    | 0    | 0         | 0    |
| McN    | ary Dam    |                     |           |           |           |       |          |      |      |           |      |
|        | 05/08/08   | Chinook + Steelhead | 100       | 0         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
|        | 05/14/08   | Chinook + Steelhead | 100       | 0         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
| Bon    | neville D  | am                  |           |           |           |       |          |      |      |           |      |
|        | 05/06/08   | Chinook + Steelhead | 100       | 1         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
|        | 05/10/08   | Chinook + Steelhead | 104       | 1         | 1         | 0.96% | 0.00%    | 1    | 0    | 0         | 0    |
|        | 05/13/08   | Chinook + Steelhead | 104       | 0         | 0         | 0.00% | 0.00%    | 0    | 0    | 0         | 0    |
| Roc    | k Island I | Dam                 |           |           |           |       |          |      |      |           |      |
|        | 05/05/08   | Chinook + Steelhead | 100       | 6         | 6         | 6.00% | 0.00%    | 5    | 1    | 0         | 0    |
|        | 05/08/08   | Chinook + Steelhead | 100       | 3         | 3         | 3.00% | 0.00%    | 2    | 1    | 0         | 0    |
|        | 05/12/08   | Chinook + Steelhead | 100       | 2         | 2         | 2.00% | 0.00%    | 2    | 0    | 0         | 0    |
|        | 05/15/08   | Chinook + Steelhead | 100       | 1         | 1         | 1.00% | 0.00%    | 1    | 0    | 0         | 0    |

### HATCHERY RELEASE LAST TWO WEEKS

05/15/08

Hatchery Release Summary 5/2/2008 to

From:

| Agency  | Hatchery                                  | <b>Species</b> | Race     | MigYr        | NumRel    | RelStart  | RelEnd   | RelSite                       | RelRiver                              |
|---|---|----------------|----------|--------------|-----------|-----------|----------|-------------------------------|---------------------------------------|
| Idaho Dept. of Fish and Game  | Oxbow-Idaho                               | CH0            | FA       | 2008         | 200,000   | 05-06-08  | 05-06-08 | Hells Canyon Dam              | Snake River                           |
| Idaho Dept. of Fish and Game Total  |   |                |          |              | 200,000   |           |          |                               |                                       |
| Nez Perce Tribe   | Nez Perce Tribal Hatchery                 | CH0            | FA       | 2008         | 200,000   | 05-04-08  | 05-10-08 | Lapwai Creek                  | Clearwater River M F                  |
| Nez Perce Tribe Total   |   |                |          |              | 200,000   |           |          |                               |                                       |
| Oregon Dept. of Fish and Wildlife   | Irrigon Hatchery Complex                  | ST             | SU       | 2008         | 120,000   | 05-10-08  | 05-10-08 | Wallowa Acclim Pond           | Wallowa River                         |
| Oregon Dept. of Fish and Wildlife   | Umatilla Hatchery                         | CH0            | FA       | 2008         | ,         | 05-15-08  | 05-15-08 | Umatilla River                | Umatilla River                        |
| Oregon Dept. of Fish and Wildlife To  |   |                |          |              | 420,000   |           |          |                               |                                       |
| U.S. Fish and Wildlife Service  | Hagerman NFH                              | ST             | SU       | 2008         | ,         |           |          | East Fk Salmon River          | Salmon River (ID)                     |
| U.S. Fish and Wildlife Service  | Hagerman NFH                              | ST             | SU       | 2008         |           |           |          |                               | Salmon River (ID)                     |
| U.S. Fish and Wildlife Service  | Hagerman NFH                              | ST             | SU       | 2008         |           |           |          | ,                             | Salmon River (ID)                     |
| U.S. Fish and Wildlife Service  | Hagerman NFH                              | ST             | SU       | 2008         |           |           |          | Salmon River (ID)             | Salmon River (ID)                     |
| U.S. Fish and Wildlife Service  | Winthrop NFH                              | ST             | SU       | 2008         |           | 05-08-08  | 05-08-08 | Winthrop Hatchery             | Methow River                          |
| U.S. Fish and Wildlife Service Total  |   |                |          |              | 1,247,470 |           |          |                               |                                       |
|   |   |                |          |              |           |           |          | Thornhollow Acclim            |                                       |
| Umatilla Tribe  | Umatilla Hatchery                         | CH0            | FA       | 2008         |           | 05-15-08  | 05-15-08 | Pond                          | Umatilla River                        |
| Umatilla Tribe Total  |   |                |          |              | 300,000   |           |          |                               |                                       |
| Warm Springs Tribe  | Oak Springs Hatchery                      | ST             | SU       | 2008         |           |           |          | Hood River                    | Hood River                            |
| Warm Springs Tribe  | Oak Springs Hatchery                      | ST             | WI       | 2008         | -,        |           |          |                               | Hood River                            |
| Warm Springs Tribe  | Oak Springs Hatchery                      | ST             | WI       | 2008         | 37,698    | 04-25-08  | 05-15-08 | E Fk Hood River               | Hood River                            |
| W 0 : T"  | D 10 " 11 ( 1                             | 0114           | 0.0      | 0000         | 00.000    | 0.4.00.00 | 05 00 00 | DI 11 A 11 D 1                |                                       |
| Warm Springs Tribe  | Round Butte Hatchery                      | CH1            | SP       | 2008         |           | 04-23-08  | 05-09-08 | Blackberry Acclim Pond        | Hood River                            |
| Warm Springs Tribe Total  | Old and Hatabase                          | 01.14          | 0.0      | 0000         | 133,068   | 044400    | 05.44.00 | Ohimana Dinas                 | Wasatahaa Disa                        |
| Washington Dept. of Fish and Wildlife                                       | Chiwawa Hatchery                          | CH1            | SP       | 2008         | 615,000   | 04-14-08  | 05-14-08 | Chiwawa River                 | Wenatchee River                       |
| Weekington Dent of Fish and Wildlife  | Footbank Hataban                          | CLIA           | CII      | 2000         | CO4 225   | 04.46.00  | 05 07 00 | Similkameen Acclim Pd         | Okanagan Diyar                        |
| Washington Dept. of Fish and Wildlife                                       | Eastbank Hatchery                         | CH1            | SU       | 2008         | ,         |           |          |                               | Okanogan River                        |
| Washington Dept. of Fish and Wildlife                                       | Skamania Hatchery                         | ST             | SU       | 2008         | ,         |           |          | White Salmon River            | White Salmon River                    |
| Washington Dept. of Fish and Wildlife                                       | Skamania Hatchery                         | ST             | SU       | 2008         |           |           |          | Klickitat River               | Klickitat River                       |
| Washington Dept. of Fish and Wildlife                                       | Skamania Hatchery                         | ST<br>CH1      | WI<br>SU | 2008<br>2008 |           |           |          |                               | White Salmon River Mid-Columbia River |
| Washington Dept. of Fish and Wildlife                                       | Turtle Rock Hatchery                      |                | SU       |              |           |           |          | Turtle Rock Hatchery          |                                       |
| Washington Dept. of Fish and Wildlife                                       | Turtle Rock Hatchery                      | CH1<br>ST      | SU       | 2008<br>2008 |           |           |          | Chelan Falls<br>Chiwawa River | Mid-Columbia River                    |
| Washington Dept. of Fish and Wildlife                                       | Turtle Rock Hatchery                      | ST             | SU       | 2008         | ,         |           |          |                               | Wenatchee River Wenatchee River       |
| Washington Dept. of Fish and Wildlife Washington Dept. of Fish and Wildlife | Turtle Rock Hatchery Turtle Rock Hatchery | ST             | SU       | 2008         | ,         |           |          | Wenatchee River               | Wenatchee River                       |
| Washington Dept. of Fish and Wildlife                                       | Turtle Rock Hatchery                      | ST             | SU       | 2008         |           |           |          | Nason Creek                   | Wenatchee River                       |
| Washington Dept. of Fish and Wildlife                                       | Turtle Rock Hatchery                      | ST             | SU       | 2008         | ,         |           |          |                               | Wenatchee River                       |
| Washington Dept. of Fish and Wildlife                                       | Wells Hatchery                            | CH0            | SU       | 2008         |           |           |          | Wells Hatchery                | Mid-Columbia River                    |
| Washington Dept. of Fish and Wildlife                                       | Wells Hatchery                            | CH1            | SU       | 2008         | ,         |           |          | Wells Hatchery                | Mid-Columbia River                    |
| Washington Dept. of Fish and Wildlife                                       | Wells Hatchery                            | ST             | SU       | 2008         |           |           |          | Twisp River                   | Methow River                          |
| Washington Dept. of Fish and Wildlife                                       | Wells Hatchery                            | ST             | SU       | 2008         |           |           |          | Chewuch River                 | Methow River                          |
| Washington Dept. of Fish and Wildlife                                       | Wells Hatchery                            | ST             | SU       | 2008         | -,        | -         |          | Methow River                  | Methow River                          |
| Washington Dept. of Fish and Wildlife                                       | Wells Hatchery                            | ST             | SU       | 2008         | ,         |           |          | Okanogan River                | Okanogan River                        |
| Washington Dept. of Fish and Wildlin  | ,   | 0.             |          | 2000         | 2,834,500 | 012100    | 00 10 00 | Charlogan ravor               | Chanogan ravor                        |
| Yakama Tribe  | Cascade Hatchery                          | CO             | UN       | 2008         |           | 05-01-08  | 05-10-08 | Wenatchee River               | Wenatchee River                       |
| Yakama Tribe  | Cascade Hatchery                          | CO             | UN       | 2008         |           |           |          | Rolfings Acclim Pond          | Wenatchee River                       |
|   | ,   |                |          |              | ,         |           |          | Butcher Creek Acclim.         |                                       |
| Yakama Tribe  | Cascade Hatchery                          | CO             | UN       | 2008         | 147,905   | 05-01-08  | 05-10-08 | Pond                          | Wenatchee River                       |
| Yakama Tribe  | Cle Elem Hatchery                         | CH1            | SP       | 2008         | -         |           |          |                               | Yakima River                          |
|   | ,   |                |          |              | ,         |           |          |                               |                                       |
| Yakama Tribe  | Cle Elem Hatchery                         | CH1            | SP       | 2008         | 217,146   | 03-15-08  | 05-15-08 | Jack Creek Acclim Pond        | Yakima River                          |
| Yakama Tribe  | Cle Elem Hatchery                         | CH1            | SP       | 2008         | 219,470   | 03-15-08  | 05-15-08 | Easton Pond                   | Yakima River                          |
| Yakama Tribe  | Klickitat Hatchery                        | CO             | NO       | 2008         | 1,093,800 | 05-07-08  | 05-07-08 | Klickitat River               | Klickitat River                       |
| Yakama Tribe  | Prosser Acclim. Pond                      | CH0            | FA       | 2008         |           |           |          | Stiles Pond                   | Yakima River                          |
| Yakama Tribe  | Prosser Acclim. Pond                      | CH0            | FA       | 2008         |           |           |          | Yakama River                  | Yakima River                          |
| Yakama Tribe  | Willard Hatchery                          | CO             | UN       | 2008         |           |           |          | Wenatchee River               | Wenatchee River                       |
| Yakama Tribe  | Willard Hatchery                          | CO             | UN       | 2008         | 30,425    | 05-01-08  | 05-10-08 | Rolfings Acclim Pond          | Wenatchee River                       |
| Yakama Tribe  | Willard Hatchery                          | CO             | UN       | 2008         | 70,299    | 05-01-08  | 05-10-08 | Coulter Creek                 | Wenatchee River                       |
| Yakama Tribe  | Willard Hatchery                          | CO             | UN       | 2008         |           |           |          | Methow River                  | Methow River                          |
| Yakama Tribe  | Willard Hatchery                          | CO             | UN       | 2008         | 211,543   | 05-01-08  | 05-15-08 | Wells Hatchery                | Mid-Columbia River                    |
| Yakama Tribe Total  |   |                |          |              | 2,554,631 |           |          |                               |                                       |
| Grand Total   |   |                |          |              | 7,889,669 |           |          |                               |                                       |
|   |   |                |          |              |           |           |          |                               |                                       |

### HATCHERY RELEASE NEXT TWO WEEKS

Hatchery Release Summary

From: 5/16/2008 to 5/29/2008

| Agency                                | Hatchery             | Species | Race | MigYr | NumRel    | RelStart | RelEnd   | RelSite Pittsburg Landing Acclim               | RelRiver             |
|---------------------------------------|----------------------|---------|------|-------|-----------|----------|----------|--|----------------------|
| Nez Perce Tribe                       | Lyons Ferry Hatchery | CH0     | FA   | 2008  | 400.000   | 05-26-08 | 05-27-08 | • •  | Snake River          |
| Nez Perce Tribe                       | Lyons Ferry Hatchery | CH0     | FA   | 2008  | ,         |          |          | Cpt John Acclim Pond<br>Big Canyon (Clearwater | Snake River          |
| Nez Perce Tribe                       | Lyons Ferry Hatchery | CH0     | FA   | 2008  | 500,000   | 05-28-08 | 05-29-08 | River)   | Clearwater River M F |
| Nez Perce Tribe Total                 |                      |         |      |       | 1,400,000 |          |          | ·  |                      |
| Oregon Dept. of Fish and Wildlife     | Umatilla Hatchery    | CH0     | FA   | 2008  | 800,000   | 05-20-08 | 05-21-08 | Hells Canyon Dam                               | Snake River          |
| Oregon Dept. of Fish and Wildlife To  | tal                  |         |      |       | 800,000   |          |          |  |                      |
| U.S. Fish and Wildlife Service        | Hagerman NFH         | ST      | SU   | 2008  | 103,000   | 05-12-08 | 05-16-08 | Yankee Fk (Salmon R)                           | Salmon River (ID)    |
| U.S. Fish and Wildlife Service        | Hagerman NFH         | ST      | SU   | 2008  | 144,000   | 05-12-08 | 05-16-08 | Yankee Fk (Salmon R)                           | Salmon River (ID)    |
| U.S. Fish and Wildlife Service Total  |                      |         |      |       | 247,000   |          |          |  |                      |
| Warm Springs Tribe                    | Oak Springs Hatchery | ST      | WI   | 2008  | 26,918    | 04-24-08 | 05-23-08 | Parkdale Acclim Pond                           | Hood River           |
| Warm Springs Tribe Total              |                      |         |      |       | 26,918    |          |          |  |                      |
| Washington Dept. of Fish and Wildlife | Wells Hatchery       | CH0     | SU   | 2008  | 242,400   | 05-13-08 | 05-20-08 | Wells Hatchery                                 | Mid-Columbia River   |
| Washington Dept. of Fish and Wildlife | Wells Hatchery       | ST      | SU   | 2008  | 90,000    | 04-21-08 | 05-19-08 | Twisp River                                    | Methow River         |
| Washington Dept. of Fish and Wildlife | Wells Hatchery       | ST      | SU   | 2008  | 110,000   | 04-21-08 | 05-19-08 | Chewuch River                                  | Methow River         |
| Washington Dept. of Fish and Wildlife | Wells Hatchery       | ST      | SU   | 2008  | 110,000   | 04-21-08 | 05-19-08 | Methow River                                   | Methow River         |
| Washington Dept. of Fish and Wildlife | Wells Hatchery       | ST      | SU   | 2008  | 138,000   | 04-21-08 | 05-19-08 | Okanogan River                                 | Okanogan River       |
| Washington Dept. of Fish and Wildlif  | e Total              |         |      |       | 690,400   |          |          |  |                      |
| Grand Total                           |                      |         |      |       | 3,164,318 |          |          |  |                      |

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

|             | <u>Hung</u> | ry H. I     | <u>Dnst</u> |           | <b>Boun</b> | <u>dary</u> |             |           | Grand       | d Coul      | <u>ee</u>   |           | Grane       | d C. T      | <u>wr</u>   |           | <b>Chief</b> | Jose        | <u>oh</u>   |           |
|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|--------------|-------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u>  | <u>12 h</u> |             | <u>#</u>  |
| <u>Date</u> | <u>Avq</u>  | <u>Avq</u>  | <u>High</u> | <u>hr</u> | <u>Avq</u>   | <u>Avq</u>  | <u>High</u> | <u>hr</u> |
| 5/2         | 96          | 96          | 97          | 24        | 105         | 107         | 107         | 22        | 107         | 108         | 109         | 24        | 105         | 105         | 106         | 22        | 105          | 105         | 106         | 24        |
| 5/3         | 97          | 97          | 97          | 24        | 106         | 107         | 108         | 22        | 108         | 108         | 109         | 24        | 106         | 106         | 107         | 22        | 106          | 106         | 106         | 24        |
| 5/4         | 97          | 97          | 97          | 24        | 106         | 107         | 107         | 22        | 107         | 107         | 107         | 24        | 106         | 106         | 107         | 22        | 106          | 107         | 107         | 24        |
| 5/5         | 97          | 97          | 97          | 24        | 106         | 107         | 108         | 19        | 108         | 109         | 109         | 24        | 107         | 107         | 108         | 19        | 107          | 107         | 108         | 24        |
| 5/6         | 97          | 97          | 98          | 24        | 108         | 110         | 114         | 23        | 107         | 108         | 108         | 24        | 106         | 107         | 108         | 23        | 107          | 107         | 108         | 23        |
| 5/7         | 97          | 97          | 98          | 24        | 110         | 112         | 113         | 24        | 108         | 109         | 109         | 24        | 107         | 107         | 108         | 24        | 107          | 107         | 108         | 24        |
| 5/8         | 97          | 97          | 98          | 24        | 114         | 115         | 116         | 22        | 107         | 108         | 108         | 24        | 106         | 106         | 108         | 22        | 106          | 106         | 107         | 24        |
| 5/9         | 97          | 97          | 97          | 24        | 116         | 117         | 117         | 21        | 108         | 108         | 109         | 24        | 106         | 106         | 107         | 21        | 106          | 106         | 106         | 24        |
| 5/10        | 97          | 97          | 98          | 24        | 115         | 116         | 117         | 22        | 109         | 109         | 110         | 24        | 106         | 107         | 108         | 22        | 105          | 106         | 106         | 24        |
| 5/11        | 98          | 98          | 99          | 24        | 115         | 116         | 116         | 23        | 109         | 109         | 110         | 24        | 106         | 107         | 107         | 23        | 106          | 106         | 106         | 24        |
| 5/12        | 97          | 97          | 98          | 24        | 115         | 116         | 116         | 23        | 107         | 107         | 108         | 24        | 105         | 106         | 106         | 23        | 105          | 106         | 106         | 24        |
| 5/13        | 97          | 97          | 98          | 24        | 115         | 116         | 116         | 19        | 108         | 109         | 109         | 24        | 105         | 106         | 107         | 19        | 105          | 106         | 106         | 24        |
| 5/14        | 97          | 97          | 97          | 24        | 114         | 115         | 115         | 23        | 108         | 108         | 109         | 24        | 105         | 106         | 108         | 23        | 105          | 105         | 105         | 24        |
| 5/15        | 97          | 97          | 97          | 24        | 115         | 116         | 118         | 24        | 107         | 107         | 108         | 24        | 105         | 106         | 106         | 24        | 105          | 106         | 106         | 24        |

| Total Dissolved Gas Sa | aturation Data at I | Mid Columbia | River Sites |
|------------------------|---------------------|--------------|-------------|
|------------------------|---------------------|--------------|-------------|

|             | Chief       | J. Dn       | <u>st</u>   |           | Wells       |             |             |           | Wells       | Dwns        | <u>strm</u> |           | Rock        | y Read      | <u>ch</u>   |           | Rock        | y R. T      | <u>lwr</u>  |           |
|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  |
| <u>Date</u> | <u>Avg</u>  | Avg         | <u>High</u> | <u>hr</u> | Avg         | Avg         | <u>High</u> | <u>hr</u> |
| 5/2         | 105         | 105         | 106         | 24        | 105         | 106         | 107         | 24        | 107         | 108         | 108         | 24        | 106         | 106         | 107         | 24        | 106         | 106         | 107         | 24        |
| 5/3         | 106         | 107         | 107         | 24        | 106         | 107         | 108         | 24        | 108         | 108         | 109         | 24        | 106         | 107         | 107         | 24        | 106         | 107         | 107         | 24        |
| 5/4         | 106         | 107         | 109         | 24        | 106         | 107         | 108         | 23        | 108         | 109         | 110         | 23        | 107         | 108         | 108         | 24        | 107         | 108         | 108         | 24        |
| 5/5         | 106         | 107         | 107         | 24        | 107         | 108         | 109         | 24        | 109         | 110         | 110         | 24        | 108         | 109         | 109         | 24        | 108         | 109         | 109         | 24        |
| 5/6         | 106         | 107         | 107         | 24        | 107         | 108         | 109         | 24        | 109         | 110         | 110         | 24        | 108         | 109         | 109         | 24        | 109         | 109         | 109         | 24        |
| 5/7         | 107         | 107         | 108         | 24        | 107         | 108         | 108         | 24        | 109         | 109         | 110         | 24        | 108         | 109         | 109         | 24        | 109         | 109         | 109         | 24        |
| 5/8         | 105         | 106         | 106         | 24        | 106         | 107         | 108         | 24        | 108         | 109         | 110         | 24        | 108         | 108         | 108         | 24        | 108         | 108         | 108         | 24        |
| 5/9         | 105         | 105         | 106         | 24        | 106         | 107         | 108         | 24        | 108         | 108         | 109         | 24        | 107         | 108         | 108         | 24        | 107         | 108         | 108         | 24        |
| 5/10        | 105         | 105         | 106         | 24        | 106         | 106         | 107         | 24        | 108         | 108         | 108         | 24        | 108         | 108         | 108         | 24        | 108         | 108         | 109         | 24        |
| 5/11        | 105         | 105         | 106         | 24        | 105         | 106         | 106         | 24        | 107         | 107         | 108         | 24        | 107         | 107         | 108         | 24        | 107         | 108         | 108         | 24        |
| 5/12        | 105         | 105         | 106         | 24        | 105         | 105         | 106         | 24        | 106         | 107         | 107         | 24        | 106         | 106         | 106         | 24        | 106         | 106         | 106         | 24        |
| 5/13        | 105         | 105         | 105         | 24        | 105         | 106         | 106         | 23        | 107         | 107         | 107         | 23        | 106         | 106         | 106         | 24        | 106         | 106         | 106         | 24        |
| 5/14        | 104         | 104         | 105         | 24        | 105         | 105         | 105         | 24        | 106         | 107         | 107         | 24        | 105         | 106         | 106         | 24        | 106         | 106         | 106         | 24        |
| 5/15        | 104         | 105         | 105         | 24        | 105         | 106         | 106         | 24        | 106         | 107         | 108         | 24        | 106         | 106         | 107         | 24        | 106         | 106         | 107         | 24        |

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

|             | <u>Rock</u> | Island      | <u>k</u>    |           | Rock        | I. Tlw      | <u>r</u>    |           | <u>Wana</u> | <u>pum</u>  |             |           | <u>Wana</u> | pum <sup>-</sup> | <u> Tlwr</u> |           | <u>Pries</u> | t Rapi      | <u>ds</u>   |           |
|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|------------------|--------------|-----------|--------------|-------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | #         | <u>24 h</u> | <u>12 h</u>      |              | <u>#</u>  | <u>24 h</u>  | <u>12 h</u> |             | <u>#</u>  |
| <u>Date</u> | <u>Avg</u>  | Avg         | <u>High</u> | <u>hr</u> | Avg         | Avg         | <u>High</u> | <u>hr</u> | <u>Avg</u>  | Avg         | <u>High</u> | <u>hr</u> | <u>Avg</u>  | Avg              | <u>High</u>  | <u>hr</u> | <u>Avg</u>   | Avg         | <u>High</u> | <u>hr</u> |
| 5/2         | 106         | 107         | 107         | 24        | 110         | 111         | 113         | 24        | 108         | 109         | 111         | 24        | 110         | 111              | 111          | 24        | 110          | 110         | 112         | 24        |
| 5/3         | 107         | 107         | 107         | 24        | 110         | 111         | 112         | 24        | 108         | 109         | 110         | 24        | 111         | 112              | 112          | 24        | 110          | 110         | 111         | 24        |
| 5/4         | 107         | 108         | 109         | 24        | 111         | 112         | 114         | 24        | 109         | 111         | 111         | 24        | 112         | 113              | 113          | 24        | 112          | 115         | 120         | 24        |
| 5/5         | 109         | 109         | 109         | 24        | 112         | 114         | 117         | 24        | 110         | 111         | 112         | 24        | 112         | 113              | 113          | 24        | 113          | 114         | 117         | 24        |
| 5/6         | 109         | 109         | 110         | 24        | 111         | 112         | 116         | 24        | 109         | 110         | 110         | 24        | 112         | 113              | 113          | 24        | 111          | 112         | 114         | 24        |
| 5/7         | 108         | 108         | 109         | 24        | 110         | 111         | 115         | 24        | 108         | 108         | 109         | 24        | 112         | 112              | 113          | 24        | 109          | 109         | 110         | 24        |
| 5/8         | 108         | 108         | 109         | 24        | 110         | 111         | 113         | 24        | 107         | 108         | 108         | 24        | 111         | 111              | 111          | 24        | 108          | 109         | 110         | 24        |
| 5/9         | 107         | 108         | 108         | 24        | 109         | 110         | 111         | 24        | 106         | 107         | 108         | 22        | 110         | 111              | 111          | 24        | 109          | 110         | 111         | 24        |
| 5/10        | 108         | 108         | 108         | 24        | 110         | 110         | 111         | 24        | 107         | 108         | 109         | 24        | 111         | 112              | 115          | 24        | 110          | 111         | 112         | 24        |
| 5/11        | 107         | 107         | 108         | 24        | 109         | 109         | 110         | 24        | 107         | 108         | 109         | 24        | 111         | 111              | 112          | 24        | 110          | 110         | 110         | 24        |
| 5/12        | 106         | 106         | 107         | 24        | 108         | 109         | 109         | 24        | 106         | 106         | 106         | 24        | 109         | 110              | 111          | 24        | 108          | 109         | 109         | 24        |
| 5/13        | 106         | 106         | 106         | 24        | 108         | 109         | 109         | 24        | 106         | 106         | 107         | 24        | 110         | 110              | 111          | 24        | 109          | 110         | 110         | 24        |
| 5/14        | 106         | 106         | 106         | 24        | 108         | 109         | 110         | 24        |             |             |             | 0         |             |                  |              | 0         |              |             |             | 0         |
| 5/15        | 106         | 106         | 107         | 24        | 109         | 110         | 112         | 24        |             |             |             | 0         |             |                  |              | 0         |              |             |             | 0         |

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

|             | Pries       | t R. Dı     | <u>nst</u>  |           | Pasco       | <u> </u>    |             |           | Dwor        | <u>shak</u> |             |           | Clrwt       | r-Pecl      | <u>&lt;</u> |           | Anato       | one         |             |           |
|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  |
| <u>Date</u> | <u>Avg</u>  | <u>Avq</u>  | <u>High</u> | <u>hr</u> | <u>Avq</u>  | <u>Avq</u>  | <u>High</u> | <u>hr</u> | <u>Avq</u>  | <u>Avg</u>  | <u>High</u> | <u>hr</u> | <u>Avq</u>  | <u>Avq</u>  | <u>High</u> | <u>hr</u> | <u>Avq</u>  | <u>Avq</u>  | <u>High</u> | <u>hr</u> |
| 5/2         | 112         | 113         | 113         | 24        | 106         | 107         | 108         | 24        | 96          | 97          | 97          | 24        | 100         | 101         | 102         | 24        | 102         | 103         | 104         | 24        |
| 5/3         | 112         | 113         | 113         | 24        | 109         | 109         | 110         | 24        | 96          | 97          | 97          | 24        | 100         | 101         | 102         | 24        | 102         | 103         | 104         | 24        |
| 5/4         | 113         | 114         | 114         | 24        | 109         | 110         | 111         | 24        | 96          | 97          | 97          | 24        | 100         | 101         | 102         | 24        | 102         | 103         | 104         | 24        |
| 5/5         | 114         | 115         | 116         | 24        | 110         | 111         | 112         | 24        | 97          | 98          | 98          | 23        | 100         | 101         | 102         | 23        | 102         | 103         | 104         | 24        |
| 5/6         | 113         | 114         | 114         | 24        | 110         | 111         | 112         | 24        | 98          | 98          | 99          | 24        | 100         | 101         | 102         | 24        | 102         | 103         | 103         | 24        |
| 5/7         | 112         | 112         | 113         | 24        | 109         | 109         | 110         | 24        | 97          | 98          | 98          | 24        | 100         | 101         | 101         | 24        | 102         | 103         | 103         | 24        |
| 5/8         | 111         | 112         | 112         | 24        | 107         | 108         | 109         | 24        | 97          | 97          | 97          | 24        | 101         | 101         | 102         | 24        | 103         | 103         | 104         | 24        |
| 5/9         | 111         | 112         | 112         | 24        | 108         | 109         | 110         | 24        | 97          | 97          | 97          | 24        | 101         | 101         | 102         | 24        | 103         | 104         | 104         | 24        |
| 5/10        | 113         | 113         | 114         | 24        | 108         | 109         | 110         | 24        | 97          | 97          | 97          | 24        | 100         | 101         | 102         | 24        | 103         | 104         | 104         | 24        |
| 5/11        | 112         | 112         | 113         | 24        | 108         | 108         | 109         | 24        | 97          | 97          | 97          | 24        | 100         | 101         | 101         | 24        | 103         | 103         | 104         | 24        |
| 5/12        | 110         | 110         | 111         | 24        | 107         | 108         | 109         | 24        | 97          | 98          | 98          | 24        | 100         | 101         | 102         | 24        | 103         | 103         | 104         | 24        |
| 5/13        | 112         | 112         | 113         | 24        | 107         | 107         | 108         | 24        | 97          | 97          | 98          | 24        | 101         | 101         | 101         | 24        | 103         | 103         | 104         | 24        |
| 5/14        |             |             |             | 0         | 107         | 108         | 109         | 24        | 96          | 97          | 97          | 24        | 100         | 101         | 101         | 24        | 102         | 103         | 103         | 24        |
| 5/15        |             |             |             | 0         | 108         | 109         | 110         | 24        | 96          | 97          | 97          | 24        | 101         | 103         | 103         | 24        | 103         | 104         | 105         | 24        |

| Total Dissolved Gas Saturation Data at Snake River Site |
|---|
|---|

|             | Clrwt       | r-Lew      | iston       |           | Lowe        | r Grar     | <u>nite</u> |           | L. Gra      | anite 1    | lwr         |           | Little      | Goos       | <u>e</u>    |           | L. Go       | ose T      | lwr         |           |
|-------------|-------------|------------|-------------|-----------|-------------|------------|-------------|-----------|-------------|------------|-------------|-----------|-------------|------------|-------------|-----------|-------------|------------|-------------|-----------|
|             | <u>24 h</u> | 12 h       |             | <u>#</u>  | <u>24 h</u> | 12 h       |             | <u>#</u>  | <u>24 h</u> | 12 h       |             | <u>#</u>  | <u>24 h</u> | 12 h       |             | <u>#</u>  | <u>24 h</u> | 12 h       |             | <u>#</u>  |
| <u>Date</u> | <u>Avg</u>  | <u>Avg</u> | <u>High</u> | <u>hr</u> | <u>Avq</u>  | <u>Avg</u> | <u>High</u> | <u>hr</u> |
| 5/2         | 102         | 104        | 105         | 24        | 101         | 101        | 101         | 24        | 110         | 110        | 111         | 24        | 106         | 107        | 107         | 24        | 116         | 116        | 117         | 24        |
| 5/3         | 102         | 103        | 105         | 24        | 101         | 102        | 102         | 24        | 110         | 110        | 111         | 24        | 108         | 109        | 111         | 24        | 114         | 117        | 117         | 24        |
| 5/4         | 102         | 104        | 105         | 24        | 103         | 103        | 104         | 24        | 111         | 111        | 111         | 24        | 109         | 109        | 110         | 24        | 114         | 116        | 117         | 24        |
| 5/5         | 101         | 103        | 104         | 23        | 104         | 104        | 105         | 24        | 110         | 111        | 111         | 24        | 111         | 112        | 113         | 24        | 117         | 117        | 117         | 24        |
| 5/6         | 101         | 102        | 103         | 24        | 104         | 104        | 104         | 24        | 110         | 110        | 111         | 24        | 111         | 111        | 112         | 24        | 117         | 117        | 119         | 24        |
| 5/7         | 101         | 101        | 101         | 24        | 103         | 103        | 104         | 24        | 110         | 110        | 110         | 24        | 110         | 110        | 110         | 24        | 114         | 116        | 117         | 24        |
| 5/8         | 101         | 102        | 103         | 24        | 102         | 102        | 102         | 24        | 114         | 117        | 118         | 24        | 108         | 108        | 109         | 24        | 114         | 115        | 116         | 24        |
| 5/9         | 101         | 102        | 103         | 24        | 101         | 102        | 102         | 24        | 114         | 114        | 115         | 24        | 106         | 107        | 107         | 24        | 114         | 115        | 116         | 24        |
| 5/10        | 101         | 102        | 102         | 24        | 102         | 103        | 103         | 24        | 112         | 113        | 115         | 24        | 108         | 109        | 111         | 24        | 112         | 113        | 114         | 24        |
| 5/11        | 101         | 102        | 102         | 24        | 103         | 103        | 103         | 24        | 110         | 110        | 110         | 24        | 110         | 110        | 111         | 24        | 116         | 116        | 116         | 24        |
| 5/12        | 101         | 102        | 104         | 24        | 102         | 102        | 102         | 24        | 110         | 110        | 110         | 24        | 108         | 108        | 109         | 24        | 115         | 116        | 116         | 24        |
| 5/13        | 101         | 102        | 103         | 24        | 102         | 102        | 102         | 24        | 109         | 110        | 110         | 24        | 107         | 107        | 107         | 24        | 111         | 112        | 112         | 24        |
| 5/14        | 101         | 102        | 102         | 24        | 101         | 102        | 102         | 24        | 110         | 110        | 110         | 24        | 106         | 106        | 106         | 24        | 110         | 110        | 111         | 24        |
| 5/15        | 102         | 103        | 104         | 24        | 102         | 102        | 103         | 24        | 110         | 110        | 111         | 24        | 106         | 106        | 107         | 24        | 115         | 116        | 116         | 24        |

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

|             | Lowe        | r Mon       | <u>.</u>    |           | L. Mo       | n. Tlw      | <u>/r</u>   |           | Ice H       | <u>arbor</u> |             |           | Ice H       | arbor       | <u>Tlwr</u> |           | <b>McNa</b> | ary-Or      | <u>egon</u> |           |
|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|--------------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u>  |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  |
| <u>Date</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>  | Avg         | <u>High</u> | <u>hr</u> | <u>Avg</u>  | <u>Avg</u>  | <u>High</u> | <u>hr</u> |
| 5/2         | 111         | 111         | 112         | 24        | 117         | 119         | 120         | 24        | 112         | 112          | 113         | 24        | 113         | 114         | 115         | 24        |             |             |             | 0         |
| 5/3         | 112         | 112         | 112         | 2         | 119         | 119         | 119         | 2         | 113         | 113          | 114         | 24        | 114         | 115         | 115         | 24        |             |             |             | 0         |
| 5/4         | 115         | 116         | 116         | 24        | 115         | 117         | 119         | 24        | 114         | 115          | 116         | 24        | 114         | 116         | 116         | 24        |             |             |             | 0         |
| 5/5         | 116         | 116         | 117         | 24        | 112         | 113         | 114         | 24        | 117         | 118          | 118         | 24        | 116         | 116         | 117         | 24        |             |             |             | 0         |
| 5/6         | 115         | 116         | 117         | 24        | 115         | 116         | 118         | 24        | 117         | 118          | 118         | 24        | 116         | 117         | 117         | 24        |             |             |             | 0         |
| 5/7         | 115         | 116         | 117         | 24        | 115         | 115         | 116         | 24        | 115         | 115          | 117         | 24        | 116         | 116         | 116         | 24        |             |             |             | 0         |
| 5/8         | 114         | 114         | 114         | 24        | 114         | 115         | 116         | 24        | 113         | 113          | 114         | 24        | 117         | 119         | 120         | 24        |             |             |             | 0         |
| 5/9         | 113         | 113         | 114         | 24        | 114         | 114         | 115         | 24        | 113         | 113          | 113         | 24        | 117         | 117         | 120         | 24        |             |             |             | 0         |
| 5/10        | 115         | 116         | 116         | 24        | 115         | 115         | 115         | 24        | 114         | 114          | 114         | 24        | 116         | 117         | 120         | 24        |             |             |             | 0         |
| 5/11        | 113         | 114         | 115         | 24        | 114         | 114         | 114         | 24        | 113         | 113          | 114         | 24        | 115         | 116         | 116         | 24        |             |             |             | 0         |
| 5/12        | 111         | 111         | 112         | 24        | 118         | 120         | 121         | 24        | 112         | 112          | 112         | 24        | 115         | 116         | 116         | 24        |             |             |             | 0         |
| 5/13        | 112         | 112         | 112         | 24        | 119         | 119         | 120         | 24        | 112         | 112          | 112         | 24        | 115         | 115         | 115         | 24        |             |             |             | 0         |
| 5/14        | 112         | 112         | 112         | 24        | 115         | 117         | 119         | 24        | 112         | 112          | 113         | 24        | 115         | 116         | 117         | 24        |             |             |             | 0         |
| 5/15        | 110         | 111         | 111         | 24        | 114         | 115         | 115         | 24        | 113         | 113          | 114         | 24        | 116         | 117         | 118         | 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

|             | McNa        | ry-Wa       | ash_        |           | McNa        | ry Tlw      | <u>/r</u>   |           | John       | Day        |             |           | John       | Day T      | <u>lwr</u>  |           | The [      | Dalles     |             |           |
|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-----------|------------|------------|-------------|-----------|------------|------------|-------------|-----------|------------|------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24h</u> | <u>12h</u> |             | <u>#</u>  | <u>24h</u> | <u>12h</u> |             | <u>#</u>  | <u>24h</u> | <u>12h</u> |             | <u>#</u>  |
| <u>Date</u> | <u>Avg</u>  | <u>Avg</u>  | <u>High</u> | <u>hr</u> | <u>Avg</u>  | Avg         | <u>High</u> | <u>hr</u> | <u>Avq</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> |
| 5/2         | 108         | 109         | 109         | 24        | 114         | 114         | 115         | 24        | 108        | 109        | 109         | 24        | 115        | 115        | 116         | 24        | 111        | 111        | 112         | 24        |
| 5/3         | 109         | 109         | 110         | 24        | 115         | 116         | 116         | 24        | 109        | 109        | 109         | 24        | 114        | 115        | 115         | 24        | 112        | 113        | 113         | 24        |
| 5/4         | 110         | 110         | 111         | 24        | 116         | 116         | 116         | 24        | 108        | 108        | 109         | 24        | 114        | 114        | 115         | 24        | 111        | 112        | 112         | 24        |
| 5/5         | 111         | 112         | 113         | 24        | 115         | 115         | 117         | 24        | 109        | 109        | 109         | 24        | 115        | 115        | 116         | 24        | 113        | 113        | 114         | 24        |
| 5/6         | 112         | 113         | 113         | 24        | 115         | 115         | 116         | 24        | 109        | 110        | 110         | 24        | 114        | 114        | 115         | 24        | 111        | 112        | 112         | 24        |
| 5/7         | 112         | 112         | 113         | 24        | 114         | 115         | 116         | 24        | 109        | 109        | 110         | 24        | 114        | 115        | 115         | 24        | 108        | 108        | 110         | 24        |
| 5/8         | 110         | 111         | 111         | 24        | 114         | 115         | 115         | 24        | 108        | 109        | 109         | 24        | 114        | 115        | 116         | 24        | 108        | 108        | 109         | 24        |
| 5/9         | 109         | 110         | 111         | 24        | 115         | 115         | 116         | 24        | 108        | 109        | 109         | 24        | 116        | 117        | 117         | 24        | 109        | 110        | 112         | 24        |
| 5/10        | 111         | 111         | 112         | 24        | 114         | 115         | 115         | 24        | 109        | 109        | 110         | 24        | 116        | 117        | 118         | 24        | 111        | 111        | 112         | 24        |
| 5/11        | 110         | 111         | 112         | 24        | 114         | 114         | 115         | 24        | 107        | 107        | 108         | 24        | 115        | 115        | 116         | 24        | 110        | 110        | 112         | 24        |
| 5/12        | 108         | 108         | 109         | 24        | 115         | 115         | 116         | 24        | 106        | 107        | 107         | 24        | 117        | 118        | 118         | 24        | 109        | 111        | 112         | 24        |
| 5/13        | 108         | 109         | 109         | 24        | 114         | 115         | 115         | 24        | 108        | 108        | 108         | 24        | 116        | 117        | 117         | 24        | 111        | 111        | 112         | 24        |
| 5/14        | 108         | 108         | 108         | 24        | 114         | 114         | 114         | 24        | 106        | 107        | 107         | 24        | 114        | 114        | 115         | 24        | 111        | 111        | 112         | 24        |
| 5/15        | 108         | 109         | 111         | 24        | 114         | 115         | 115         | 24        | 106        | 107        | 108         | 24        | 114        | 115        | 115         | 24        | 110        | 111        | 111         | 24        |

| Total Dissolved Gas | Saturation Data at L | ower Columbia River Sites |
|---------------------|----------------------|---------------------------|
|                     |                      |                           |

|             | The D       | alles       | <b>Dnst</b> |           | <b>Bonn</b> | <u>eville</u> |             |           | Warre      | endale     | <u> </u>    |           | Cama       | s\Wa       | shouga      | <u> </u>  | Casc       | ade Is     | <u>land</u> |           |
|-------------|-------------|-------------|-------------|-----------|-------------|---------------|-------------|-----------|------------|------------|-------------|-----------|------------|------------|-------------|-----------|------------|------------|-------------|-----------|
|             | <u>24 h</u> | <u>12 h</u> |             | <u>#</u>  | <u>24 h</u> | <u>12 h</u>   |             | <u>#</u>  | <u>24h</u> | <u>12h</u> |             | <u>#</u>  | <u>24h</u> | <u>12h</u> |             | <u>#</u>  | <u>24h</u> | <u>12h</u> |             | <u>#</u>  |
| <u>Date</u> | <u>Avg</u>  | <u>Avq</u>  | <u>High</u> | <u>hr</u> | <u>Avq</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> |
| 5/2         | 116         | 116         | 117         | 24        | 112         | 113           | 114         | 24        |            |            |             | 0         | 113        | 114        | 114         | 24        | 118        | 118        | 119         | 24        |
| 5/3         | 116         | 116         | 117         | 24        | 114         | 114           | 114         | 24        |            |            |             | 0         | 114        | 115        | 116         | 21        | 117        | 118        | 118         | 24        |
| 5/4         | 116         | 116         | 117         | 24        | 114         | 114           | 115         | 24        |            |            |             | 0         | 116        | 118        | 119         | 22        | 118        | 118        | 119         | 24        |
| 5/5         | 116         | 117         | 117         | 24        | 115         | 116           | 116         | 24        |            |            |             | 0         | 118        | 119        | 121         | 24        | 117        | 118        | 118         | 24        |
| 5/6         | 115         | 116         | 116         | 24        | 113         | 114           | 115         | 24        |            |            |             | 0         | 115        | 115        | 116         | 24        | 117        | 117        | 117         | 24        |
| 5/7         | 114         | 114         | 115         | 24        | 110         | 110           | 112         | 24        |            |            |             | 0         | 112        | 113        | 113         | 24        | 118        | 119        | 119         | 24        |
| 5/8         | 114         | 114         | 115         | 24        | 108         | 109           | 109         | 24        |            |            |             | 0         | 111        | 113        | 113         | 24        | 119        | 120        | 130         | 24        |
| 5/9         | 115         | 116         | 116         | 24        | 110         | 111           | 112         | 24        |            |            |             | 0         | 112        | 113        | 114         | 24        | 120        | 121        | 122         | 24        |
| 5/10        | 116         | 117         | 117         | 24        | 114         | 115           | 115         | 24        |            |            |             | 0         | 113        | 114        | 114         | 24        | 121        | 121        | 122         | 24        |
| 5/11        | 115         | 115         | 116         | 24        | 112         | 113           | 114         | 24        |            |            |             | 0         | 112        | 113        | 114         | 24        | 118        | 119        | 120         | 24        |
| 5/12        | 115         | 116         | 117         | 24        | 110         | 110           | 111         | 24        |            |            |             | 0         | 112        | 113        | 113         | 24        | 120        | 121        | 127         | 24        |
| 5/13        | 116         | 116         | 117         | 24        | 112         | 113           | 113         | 24        |            |            |             | 0         | 113        | 114        | 115         | 24        | 120        | 120        | 121         | 24        |
| 5/14        | 115         | 116         | 116         | 24        | 112         | 113           | 113         | 24        |            |            |             | 0         | 113        | 114        | 115         | 24        | 118        | 119        | 120         | 24        |
| 5/15        | 116         | 116         | 117         | 24        | 114         | 115           | 115         | 24        |            |            |             | 0         | 115        | 116        | 117         | 24        | 119        | 120        | 121         | 24        |

### Two-Week Summary of Passage Indices

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

See Sampling Comments: <u>h</u>

http://www.fpc.org/currentDaily/smpcomments.htm

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

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

|            |   |        |        | COMBINED YEARLING CHINOOK |        |           |           |         |         |         |         |         |
|------------|---|--------|--------|---------------------------|--------|-----------|-----------|---------|---------|---------|---------|---------|
|            |   | WTB    | IMN    | GRN                       | LEW    | LGR       | LGS       | LMN     | RIS     | MCN     | JDA     | BO2     |
| Date       |   | (Coll) | (Coll) | (Coll)                    | (Coll) | (INDEX)   | (INDEX)   | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 05/02/2008 | * | 1,214  | 72     | 295                       | 271    | 112,073   | 20,892    | 16,232  | 335     |         | 10,538  | 20,637  |
| 05/03/2008 | * | 724    | 59     | 168                       | 300    | 105,345   | 30,115    | 18,280  | 214     | 18,668  | 9,011   | 17,279  |
| 05/04/2008 | * | 391    | 26     | 140                       | 139    | 92,715    | 91,368    | 13,318  | 174     |         | 10,975  | 21,725  |
| 05/05/2008 | * | 173    | 18     | 368                       | 171    | 100,818   | 56,334    | 10,434  | 128     | 14,147  | 10,455  | 19,051  |
| 05/06/2008 | * | 279    |        | 275                       | 434    | 163,678   | 54,810    | 14,651  | 158     |         | 7,317   | 21,846  |
| 05/07/2008 | * | 361    |        | 134                       | 991    | 195,672   | 68,525    | 22,095  | 171     | 25,352  | 9,577   | 28,156  |
| 05/08/2008 | * | 159    |        | 113                       | 918    | 271,477   | 102,962   | 23,357  | 386     |         | 16,825  | 32,347  |
| 05/09/2008 | * |        | 8      | 162                       | 934    | 256,057   | 102,652   | 33,630  | 354     | 94,407  | 25,416  | 35,673  |
| 05/10/2008 | * |        | 18     | 146                       | 694    | 208,207   | 113,949   | 31,628  | 606     |         | 30,417  | 47,192  |
| 05/11/2008 |   |        | 5      | 95                        | 231    | 212,877   | 166,278   | 51,719  | 388     | 107,292 | 29,926  | 35,885  |
| 05/12/2008 | * |        | 4      | 162                       | 121    | 198,374   | 166,034   | 39,748  | 412     |         | 31,576  | 31,101  |
| 05/13/2008 |   | 7      | 9      | 214                       | 92     | 150,101   | 109,396   | 30,580  | 375     | 133,214 | 40,357  | 44,801  |
| 05/14/2008 | * | 28     | 14     | 143                       | 53     | 85,237    | 93,300    | 41,483  | 427     |         | 34,898  | 41,017  |
| 05/15/2008 | * | 19     |        | 252                       | 23     | 67,258    | 86,185    | 29,423  | 547     | 117,763 | 35,115  | 39,355  |
| 05/16/2008 |   |        |        |                           |        |           |           |         |         |         |         |         |
|            |   |        |        |                           |        |           |           |         |         |         |         |         |
| Total:     |   | 3,355  | 233    | 2,667                     | 5,372  | 2,219,889 | 1,262,800 | 376,578 | 4,675   | 510,843 | 302,403 | 436,065 |
| # Days:    |   | 10     | 10     | 14                        | 14     | 14        | 14        | 14      | 14      | 7       | 14      | 14      |
| Average:   |   | 336    | 23     | 191                       | 384    | 158,564   | 90,200    | 26,898  | 334     | 72,978  | 21,600  | 31,148  |
| YTD        |   | 56,037 | 78,577 | 19,319                    | 7,109  | 2,830,558 | 1,385,414 | 458,489 | 6,345   | 644,999 | 449,462 | 772,808 |

|            |   |        |        | COMBINED SUBYEARLING CHINOOK |        |         |         |         |         |         |         |           |
|------------|---|--------|--------|------------------------------|--------|---------|---------|---------|---------|---------|---------|-----------|
|            |   | WTB    | IMN    | GRN                          | LEW    | LGR     | LGS     | LMN     | RIS     | MCN     | JDA     | BO2       |
| Date       |   | (Coll) | (Coll) | (Coll)                       | (Coll) | (INDEX)   |
| 05/02/2008 | * | 0      | 0      | 0                            | 0      | 0       | 2       | 0       | 1       | -       | 0       | 1,075     |
| 05/03/2008 | * | 0      | 0      | 0                            | 0      | 298     | 0       | 0       | 4       | 102     | 28      | 9,221     |
| 05/04/2008 | * | 0      | 0      | 0                            | 0      | 0       | 95      | 0       | 0       | -       | 0       | 233,573   |
| 05/05/2008 | * | 0      | 0      | 0                            | 1      | 1,449   | 0       | 0       | 0       | 341     | 0       | 242,780   |
| 05/06/2008 | * | 0      |        | 0                            | 0      | 0       | 0       | 0       | 1       |         | 0       | 102,484   |
| 05/07/2008 | * | 0      |        | 0                            | 9      | 263     | 0       | 0       | 10      | 68      | 0       | 34,895    |
| 05/08/2008 | * | 0      |        | 2                            | 6      | 0       | 309     | 0       | 3       |         | 0       | 18,869    |
| 05/09/2008 | * |        | 0      | 0                            | 13     | 0       | 0       | 0       | 13      | 2       | 0       | 16,544    |
| 05/10/2008 | * |        | 0      | 0                            | 5      | 0       | 0       | 0       | 3       | -       | 0       | 5,060     |
| 05/11/2008 |   |        | 0      | 0                            | 2      | 0       | 0       | 0       | 3       | 253     | 0       | 6,009     |
| 05/12/2008 | * |        | 0      | 0                            | 2      | 0       | 0       | 0       | 1       |         | 0       | 2,881     |
| 05/13/2008 |   | 0      | 0      | 0                            | 0      | 261     | 0       | 0       | 3       | 422     | 249     | 4,260     |
| 05/14/2008 | * | 0      | 0      | 0                            | 0      | 0       | 0       | 0       | 0       |         | 0       | 1,489     |
| 05/15/2008 | * | 0      |        | 0                            | 1      | 558     | 0       | 0       | 4       | 508     | 0       | 593       |
| 05/16/2008 |   |        |        |                              |        |         |         |         |         |         |         |           |
|            |   |        |        |                              |        |         |         |         |         |         |         |           |
| Total:     |   | 0      | 0      | 2                            | 39     | 2,829   | 406     | 0       | 46      | 1,696   | 277     | 679,733   |
| # Days:    |   | 10     | 10     | 14                           | 14     | 14      | 14      | 14      | 14      | 7       | 14      | 14        |
| Average:   |   | 0      | 0      | 0                            | 3      | 202     | 29      | 0       | 3       | 242     | 20      | 48,552    |
| YTD        |   | 0      | 0      | 2                            | 77     | 5,138   | 458     | 0       | 507     | 1,871   | 277     | 1,997,281 |

### **Two-Week Summary of Passage Indices**

|            |   |        |        | COMBINED COHO |        |         |         |         |         |         |         |         |
|------------|---|--------|--------|---------------|--------|---------|---------|---------|---------|---------|---------|---------|
|            |   | WTB    | IMN    | GRN           | LEW    | LGR     | LGS     | LMN     | RIS     | MCN     | JDA     | BO2     |
| Date       |   | (Coll) | (Coll) | (Coll)        | (Coll) | (INDEX) |
| 05/02/2008 | * | 0      | 0      | 0             | 3      | 2,006   | 714     | 0       | 5       |         | 253     | 2,436   |
| 05/03/2008 | * | 0      | 0      | 0             | 6      | 1,194   | 94      | 168     | 3       | 102     | 529     | 2,092   |
| 05/04/2008 | * | 0      | 0      | 0             | 8      | 1,789   | 95      | 169     | 8       |         | 134     | 1,642   |
| 05/05/2008 | * | 0      | 0      | 0             | 6      | 1,159   | 466     | 157     | 2       | 0       | 727     | 1,330   |
| 05/06/2008 | * | 0      |        | 0             | 7      | 4,307   | 83      | 0       | 6       | -       | 898     | 1,284   |
| 05/07/2008 | * | 0      |        | 0             | 67     | 3,944   | 321     | 263     | 15      | 306     | 858     | 2,450   |
| 05/08/2008 | * | 0      |        | 0             | 41     | 14,482  | 928     | 251     | 182     |         | 2,224   | 5,905   |
| 05/09/2008 | * |        | 0      | 0             | 30     | 8,655   | 1,565   | 675     | 61      | 2,763   | 5,791   | 7,884   |
| 05/10/2008 | * |        | 0      | 0             | 26     | 7,899   | 1,435   | 0       | 95      |         | 14,634  | 16,947  |
| 05/11/2008 |   |        | 0      | 0             | 19     | 4,268   | 5,704   | 1,101   | 111     | 3,886   | 10,637  | 10,155  |
| 05/12/2008 | * |        | 0      | 0             | 8      | 5,481   | 5,525   | 1,967   | 133     |         | 2,500   | 12,120  |
| 05/13/2008 |   | 0      | 0      | 0             | 5      | 4,184   | 7,193   | 141     | 246     | 7,346   | 9,346   | 13,880  |
| 05/14/2008 | * | 0      | 0      | 0             | 4      | 2,645   | 1,148   | 278     | 310     | -       | 13,333  | 8,831   |
| 05/15/2008 | * | 0      |        | 0             | 1      | 1,674   | 2,576   | 161     | 491     | 11,016  | 7,684   | 8,053   |
| 05/16/2008 |   |        |        |               |        |         |         |         |         |         |         |         |
| Total:     | 1 | ol     | 0      | 0             | 231    | 63,687  | 27,847  | 5,331   | 1,668   | 25,419  | 69,548  | 95,009  |
| # Days:    | Ħ | 10     | 10     | 14            | 14     | 14      | 14      | 14      | 14      | 7       | 14      | 14      |
| Average:   | Ħ | 0      | 0      | 0             | 17     | 4,549   | 1,989   | 381     | 119     | 3,631   | 4,968   |         |
| YTD        |   | 0      | 0      | 0             | 264    | 66,101  | 28,050  | 5,351   | 1,706   |         | 70,414  |         |

|            |   |        |        |        | C      | OMBINED   | STEELHEA  | /D      |         |         |         |         |
|------------|---|--------|--------|--------|--------|-----------|-----------|---------|---------|---------|---------|---------|
|            |   | WTB    | IMN    | GRN    | LEW    | LGR       | LGS       | LMN     | RIS     | MCN     | JDA     | BO2     |
| Date       |   | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX)   | (INDEX)   | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 05/02/2008 | * | 743    | 405    | 287    | 317    | 85,129    | 44,640    | 14,143  | 52      |         | 8,691   | 2,795   |
| 05/03/2008 | * | 278    | 345    | 197    | 461    | 111,313   | 38,928    | 35,721  | 42      | 24,092  | 14,596  | 2,480   |
| 05/04/2008 | * | 211    | 559    | 128    | 479    | 124,614   | 66,845    | 21,916  | 76      |         | 14,716  | 4,951   |
| 05/05/2008 | * | 141    | 1,774  | 280    | 216    | 152,095   | 34,884    | 23,563  | 49      | 18,592  | 20,477  | 7,976   |
| 05/06/2008 | * | 203    |        | 188    | 308    | 155,063   | 67,907    | 19,212  | 123     |         | 19,647  | 11,564  |
| 05/07/2008 | * | 82     |        | 210    | 504    | 84,992    | 245,330   | 9,864   | 193     | 46,662  | 20,202  | 25,139  |
| 05/08/2008 | * | 108    |        | 235    | 601    | 116,648   | 131,398   | 16,576  | 298     |         | 27,484  | 12,964  |
| 05/09/2008 | * |        | 234    | 211    | 724    | 166,526   | 139,253   | 19,178  | 419     | 61,838  | 63,636  | 20,034  |
| 05/10/2008 | * |        | 451    | 90     | 300    | 161,939   | 136,030   | 12,400  | 675     |         | 68,920  | 17,535  |
| 05/11/2008 | Ш |        | 386    | 44     | 262    | 126,179   | 269,229   | 37,853  | 653     | 52,127  | 57,454  | 13,540  |
| 05/12/2008 | * |        | 631    | 82     | 184    | 153,218   | 118,531   | 32,540  | 508     |         | 44,173  | 58,726  |
| 05/13/2008 |   | 45     | 572    | 62     | 149    | 117,413   | 112,671   | 18,857  | 702     | 54,001  | 42,724  | 34,220  |
| 05/14/2008 | * | 65     | 439    | 45     | 69     | 48,213    | 87,536    | 17,261  | 900     |         | 36,030  | 27,320  |
| 05/15/2008 | * | 56     |        | 210    | 56     | 50,513    | 45,233    | 15,756  | 583     | 40,233  | 27,446  | 32,224  |
| 05/16/2008 |   |        |        |        |        |           |           |         |         |         |         |         |
|            |   |        |        |        |        |           |           |         |         |         |         |         |
| Total:     | Ц | 1,932  | 5,796  | 2,269  | 4,630  |           | 1,538,415 | 294,840 | 5,273   | 297,545 | 466,196 |         |
| # Days:    | Ц | 10     | 10     | 14     | 14     |           | 14        | 14      | 14      | 7       | 14      | 14      |
| Average:   | Ш | 193    | 580    | 162    | 331    | 118,133   | 109,887   | 21,060  | 377     | 42,506  | 33,300  | 19,391  |
| YTD        |   | 4.565  | 21.677 | 5.507  | 8,463  | 2.316.227 | 1.952.517 | 336.267 | 5.526   | 342.922 | 497.401 | 290.374 |

Two-Week Summary of Passage Indices

|            |   |        |        |        | (      | OMBINED | SOCKEY  | _       |         |         |         |         |
|------------|---|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
|            |   | WTB    | IMN    | GRN    | LEW    | LGR     | LGS     | LMN     | RIS     | MCN     | JDA     | BO2     |
| Date       |   | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX) |
| 05/02/2008 | * | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 16      |         | 36      | 0       |
| 05/03/2008 | * | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 19      | 408     | 0       | 0       |
| 05/04/2008 | * | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 17      |         | 34      | 0       |
| 05/05/2008 | * | 0      | 0      | 0      | 0      | 290     | 0       | 0       | 9       | 85      | 113     | 0       |
| 05/06/2008 | * | 0      |        | 0      | 0      | 0       | 0       | 0       | 10      |         | 67      | 0       |
| 05/07/2008 | * | 0      |        | 0      | 0      | 0       | 0       | 0       | 20      | 679     | 29      | 136     |
| 05/08/2008 | * | 0      |        | 0      | 0      | 0       | 0       | 0       | 37      |         | 215     | 128     |
| 05/09/2008 | * |        | 0      | 0      | 0      | 0       | 0       | 0       | 44      | 2,130   | 172     | 0       |
| 05/10/2008 | * |        | 0      | 0      | 0      | 564     | 0       | 0       | 67      |         | 331     | 0       |
| 05/11/2008 |   |        | 0      | 0      | 0      | 267     | 285     | 220     | 55      | 1,774   | 273     | 25      |
| 05/12/2008 | * |        | 0      | 0      | 14     | 0       | 0       | 0       | 81      |         | 129     | 412     |
| 05/13/2008 |   | 25     | 0      | 0      | 19     | 261     | 0       | 0       | 92      | 6,080   | 873     | 550     |
| 05/14/2008 | * | 8      | 0      | 0      | 11     | 0       | 0       | 0       | 85      |         | 512     | 313     |
| 05/15/2008 | * | 4      |        | 0      | 3      | 0       | 0       | 0       | 94      | 11,868  | 1,312   | 543     |
| 05/16/2008 |   |        |        |        |        |         |         |         |         |         |         |         |
|            |   |        |        |        |        |         |         |         |         |         |         |         |
| Total:     |   | 37     | 0      | 0      | 47     | 1,382   | 285     | 220     | 646     | 23,024  | 4,096   | 2,107   |
| # Days:    |   | 10     | 10     | 14     | 14     | 14      | 14      | 14      | 14      | 7       | 14      | 14      |
| Average:   |   | 4      | 0      | 0      | 3      | 99      | 20      | 16      | 46      | 3,289   | 293     | 151     |
| YTD        | I | 37     | 0      | 0      | 50     | 1,883   | 321     | 352     | 697     | 23,619  | 4,122   | 2,159   |

<sup>\*</sup> See sampling comments

http://www.fpc.org/currentDaily/smpcomments.htm

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's,) subyearling chinook (chinook 0's), steelhead, coho, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, which are collection counts divided by the proportion of water passing through the sampled powerhouse. Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations. The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

#### **Definitions for Smolt Index Counts**

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts

IMN (Collection) = Imnaha River Trap : Collection Counts

GRN (Collection) = Grande Ronde River Trap : Collection Counts

LEW (Collection) = Snake River Trap at Lewiston : Collection Counts

LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

LGS (Index) = Little Goose Bypass Collection System: Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.

RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.

LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.

IMN data collected for the FPC by the Nez Perce Tribe.

### **Two Week Transportation Summary**

Source: Fish Passage Center

Updated:

5/16/08 11:03 AM

| Oource.  | : Fish Passage Center                       | 05/02/08 | то           | Update <b>05/16/08</b> |        | 5/ 1      | 6/08 11:03 AM |
|----------|---|----------|--------------|------------------------|--------|-----------|---------------|
|          |   | Species  |              |                        |        |           |               |
| Site     | Data  | CH0      | CH1          | СО                     | so     | ST        | Grand Total   |
| LGR      | Sum of NumberCollected                      | 2,000    | 1,615,494    | 46,600                 | 1,000  | 1,191,906 | 2,857,000     |
|          | Sum of NumberBarged                         | 1,985    | 1,519,776    | 46,511                 | 955    | 1,182,589 | 2,751,816     |
|          | Sum of NumberBypassed                       | 10       | 92,330       | 73                     | 28     | 9,099     | 101,540       |
|          | Sum of Numbertrucked                        | 0        | 0            | 0                      | 0      | 0         | 0             |
|          | Sum of SampleMorts                          | 0        | 41           | 1                      | 0      | 15        | 57            |
|          | Sum of FacilityMorts                        | 5        | 1,484        | 15                     | 17     | 203       | 1,724         |
|          | Sum of ResearchMorts                        | 0        | 1,863        | 0                      | 0      | 0         | 1,863         |
|          | Sum of TotalProjectMorts                    | 5        | 3,388        | 16                     | 17     | 218       | 3,644         |
| LGS      | Sum of NumberCollected                      | 251      | 834,492      | 19,400                 | 200    | 1,010,893 | 1,865,236     |
|          | Sum of NumberBarged                         | 0        | 519,702      | 16,800                 | 200    | 542,857   | 1,079,559     |
|          | Sum of NumberBypassed                       | 250      | 314,550      | 2,600                  | 0      | 467,949   | 785,349       |
|          | Sum of Numbertrucked                        | 0        | 0            | 0                      | 0      | 0         | 0             |
|          | Sum of SampleMorts                          | 0        | 5            | 0                      | 0      | 3         | 8             |
|          | Sum of FacilityMorts                        | 1        | 235          | 0                      | 0      | 84        | 320           |
|          | Sum of ResearchMorts                        | 0        | 0            | 0                      | 0      | 0         | 0             |
|          | Sum of TotalProjectMorts                    | 1        | 240          | 0                      | 0      | 87        | 328           |
| LMN      | Sum of NumberCollected                      |          | 261,151      | 3,691                  | 149    | 199,301   | 464,292       |
|          | Sum of NumberBarged                         |          | 69,663       | 400                    | 0      | 35,129    | 105,192       |
|          | Sum of NumberBypassed                       |          | 192,442      | 3,291                  | 149    | 164,140   | 360,022       |
|          | Sum of Numbertrucked                        |          | 0            | 0                      | 0      | 0         | 0             |
|          | Sum of SampleMorts                          |          | 3            | 0                      | 0      | 2         | 5             |
|          | Sum of FacilityMorts                        |          | 43           | 0                      | 0      | 30        | 73            |
|          | Sum of ResearchMorts                        |          | 0            | 0                      | 0      | 0         | 0             |
|          | Sum of TotalProjectMorts                    |          | 46           | 0                      | 0      | 32        | 78            |
| MCN      | Sum of NumberCollected                      | 1,001    | 301,842      | 15,022                 | 13,601 | 175,643   | 507,109       |
|          | Sum of NumberBarged                         | 0        | 0            | 0                      | •      | 0         | 0             |
|          | Sum of NumberBypassed                       | 1,000    | 301,806      | 15,026                 | _      | 175,563   | _             |
|          | Sum of Numbertrucked Sum of SampleMorts     | 0 0      | 0<br>19      | 0                      |        | 12        | 0 31          |
|          | Sum of FacilityMorts                        |          | 74           | 0                      | _      | 107       |               |
|          | Sum of ResearchMorts                        | 0        | 15           | 0                      |        | 9         |               |
|          | Sum of TotalProjectMorts                    | 1        | 108          | 0                      | 4      | 128       | 241           |
|          | um of NumberCollected                       | 3,252    | 3,012,979    | 84,713                 |        | 2,577,743 |               |
|          | um of NumberBarged                          | 1,985    | 2,109,141    | 63,711                 |        |           |               |
|          | um of NumberBypassed<br>um of Numbertrucked | 1,260    | 901,128<br>0 | 20,990<br>0            |        |           | 1             |
|          | um of Numbertrucked<br>um of SampleMorts    | 0        | 68           | 0                      |        | 32        |               |
|          | um of FacilityMorts                         | 7        | 1,836        | 15                     |        | 424       |               |
|          | um of ResearchMorts                         | 0        | 1,878        | 0                      |        | 9         | 1,887         |
| Total Su | um of TotalProjectMorts                     | 7        | 3,782        | 16                     | 5 21   | 465       |               |

### **YTD Transportation Summary**

Source: Fish Passage Center

TO: 05/16/08

Updated:

5/16/08 11:03 AM

|           |   | Spec | ies        | 05/16/08       |    |        |             |                |             |
|-----------|---|------|------------|----------------|----|--------|-------------|----------------|-------------|
| Site      | Data                                    | CH0  |            | CH1            | СО | ;      | so          | ST             | Grand Total |
| LGR       | Sum of NumberCollected                  |      | 3,543      | 2,020,483      |    | 48,242 | 1,310       | 1,633,350      | 3,706,928   |
|           | Sum of NumberBarged                     |      | 2,277      | 1,624,030      |    | 46,801 | 1,099       | 1,281,584      | 2,955,791   |
|           | Sum of NumberBypassed                   |      | 1,258      | 392,063        |    | 1,424  | 194         | 351,520        | 746,459     |
|           | Sum of NumberTrucked                    |      | 0          | 0              |    | 0      | 0           | 0              | 0           |
|           | Sum of SampleMorts                      |      | 2          | 117            |    | 1      | 0           | 27             | 147         |
|           | Sum of FacilityMorts                    |      | 6          | 1,710          |    | 16     | 17          | 219            | 1,968       |
|           | Sum of ResearchMorts                    |      | 0          | 2,563          |    | 0      | 0           | 0              | 2,563       |
|           | Sum of TotalProjectMorts                |      | 8          | 4,390          |    | 17     | 17          | 246            | 4,678       |
| LGS       | Sum of NumberCollected                  |      | 283        | 908,036        |    | 19,526 | 221         | 1,260,234      | 2,188,300   |
|           | Sum of NumberBarged                     |      | 0          | 519,702        |    | 16,800 | 200         | 542,857        | 1,079,559   |
|           | Sum of NumberBypassed                   |      | 282        | 388,083        |    | 2,726  | 21          | 717,288        | 1,108,400   |
|           | Sum of NumberTrucked                    |      | 0          | 0              |    | 0      | 0           | 0              | 0           |
|           | Sum of SampleMorts                      |      | 0          | 9              |    | 0      | 0           | 5              | 14          |
|           | Sum of FacilityMorts                    |      | 1          | 242            |    | 0      | 0           | 84             | 327         |
|           | Sum of ResearchMorts                    |      | 0          | 0              |    | 0      | 0           | 0              | 0           |
|           | Sum of TotalProjectMorts                |      | 1          | 251            |    | 0      | 0           | 89             | 341         |
| LMN       | Sum of NumberCollected                  |      |            | 308,296        |    | 3,701  | 219         | 223,168        | 535,384     |
|           | Sum of NumberBarged                     |      |            | 69,663         |    | 400    | 0           | 35,129         | 105,192     |
|           | Sum of NumberBypassed                   |      |            | 239,119        |    | 3,301  | 219         | 187,977        | 430,616     |
|           | Sum of NumberTrucked                    |      |            | 0              |    | 0      | 0           | 0              | 0           |
|           | Sum of SampleMorts                      |      |            | 17             |    | 0      | 0           | 2              | 19          |
|           | Sum of FacilityMorts                    |      |            | 488            |    | 0      | 0           | 60             | 548         |
|           | Sum of ResearchMorts                    |      |            | 0              |    | 0      | 0           | 0              | 0           |
|           | Sum of TotalProjectMorts                |      |            | 505            |    | 0      | 0           | 62             | 567         |
| MCN       | Sum of NumberCollected                  |      | 1,108      | 411,893        |    | 15,767 | 13,951      | 202,429        | 645,148     |
|           | Sum of NumberBarged                     |      | 0          | 0              |    | 0      | 0           | 0              | 0           |
|           | Sum of NumberBypassed                   |      | 1,107      | 411,782        |    | 15,771 | 13,949      | 202,334        | 644,943     |
|           | Sum of NumberTrucked Sum of SampleMorts |      | 0          | 0<br>48        |    | 0      | 0           | 15             | 63          |
|           | Sum of FacilityMorts                    |      | 1          | 109            |    | 0      | 4           | 115            |             |
|           | Sum of ResearchMorts                    |      | 0          | 20             |    | 0      | 0           | 11             | 31          |
|           | Sum of TotalProjectMorts                |      | 1          | 177            |    | 0      | 4           | 141            |             |
|           | of NumberCollected                      |      | 4,934      | 3,648,708      |    | 87,236 | 15,701      | 3,319,181      |             |
|           | of NumberBarged                         |      | 2,277      | 2,213,395      |    | 64,001 | 1,299       | 1,859,570      |             |
|           | of NumberBypassed of NumberTrucked      |      | 2,647<br>0 | 1,431,047<br>0 |    | 23,222 | 14,383<br>0 | 1,459,119<br>0 |             |
|           | of SampleMorts                          |      | 2          | 191            |    | 1      | 0           | 49             |             |
|           | of FacilityMorts                        |      | 8          | 2,549          |    | 16     | 21          | 478            |             |
| Total Sum | of ResearchMorts                        |      | 0          | 2,583          |    | 0      | 0           | 11             | 2,594       |
| Total Sum | of TotalProjectMorts                    |      | 10         | 5,323          |    | 17     | 21          | 538            | 5,909       |

### Cumulative Adult Passage at Mainstem Dams Through: 05/15

|     |         |        |       | Spring | Chinook |        |      | S     | ummer | Chinool | k    |       | Fall Chinook |       |      |       |      |       |      |
|-----|---------|--------|-------|--------|---------|--------|------|-------|-------|---------|------|-------|--------------|-------|------|-------|------|-------|------|
|     |         | 2008   | 3     | 20     | 07      | 10-Yr  | Avg. | 200   | )8    | 200     | )7   | 10-Y  | r Avg.       | 20    | 800  | 200   | 07   | 10-Yr | Avg. |
| DAM | EndDate | Adult  | Jack  | Adult  | Jack    | Adult  | Jack | Adult | Jack  | Adult   | Jack | Adult | Jack         | Adult | Jack | Adult | Jack | Adult | Jack |
| BON | 05/15   | 101170 | 10564 | 55028  | 11345   | 132777 | 6681 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| TDA | 05/14   | 64672  | 5682  | 39964  | 8341    | 87207  | 4049 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| JDA | 05/15   | 50741  | 4752  | 32926  | 7679    | 71438  | 3258 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| MCN | 05/14   | 32710  | 2346  | 25720  | 4552    | 60511  | 2379 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| IHR | 05/14   | 23172  | 1235  | 17101  | 2307    | 37931  | 1304 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| LMN | 05/15   | 20152  | 951   | 15205  | 2363    | 35263  | 1176 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| LGS | 05/15   | 15512  | 653   | 10994  | 1521    | 31996  | 1009 | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| LGR | 05/14   | 11442  | 432   | 8803   | 1185    | 29808  | 837  | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| PRD | 05/14   | 4206   | 78    | 2718   | 51      | 12345  | 64   | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| RIS | 05/14   | 3111   | 17    | 1953   | 85      | 7328   | 100  | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| RRH | 05/14   | 566    | 1     | 666    | 11      | 2405   | 8    | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| WEL | 05/14   | 91     | 1     | 106    | 1       | 959    | 5    | 0     | 0     | 0       | 0    | 0     | 0            | 0     | 0    | 0     | 0    | 0     | 0    |
| WFA | 05/14   | 3228   | 30    | 11837  | 46      | -      |      | 0     | 0     | 0       | 0    | -     | -            | 0     | 0    | 0     | 0    |       | -    |

|     |       |      | Coh   | 0    |       |      | S    | ockeye |       |      | Steelhead |       |      |  |
|-----|-------|------|-------|------|-------|------|------|--------|-------|------|-----------|-------|------|--|
|     | 20    | 800  | 200   | 7    | 10-Yr | Avg. |      |        | 10-Yr |      |           | 10-Yr | Wild |  |
| DAM | Adult | Jack | Adult | Jack | Adult | Jack | 2008 | 2007   | Avg.  | 2008 | 2007      | Avg.  | 2008 |  |
| BON | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 2499 | 2392      | 2794  | 776  |  |
| TDA | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 1251 | 1115      | 994   | 492  |  |
| JDA | -1    | 0    | 0     | 0    | 0     | 0    | 1    | 0      | 0     | 2996 | 1767      | 2907  | 1338 |  |
| MCN | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 2354 | 1791      | 1600  | 1067 |  |
| IHR | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 3159 | 2250      | 1876  | 1172 |  |
| LMN | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 3982 | 2280      | 1903  | 1735 |  |
| LGS | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 2596 | 2267      | 2158  | 1025 |  |
| LGR | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 7651 | 10545     | 7377  | 2383 |  |
| PRD | 0     | 0    | 0     | 1    | 0     | 0    | 0    | 0      | 0     | 62   | 28        | 3     | 0    |  |
| RIS | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 202  | 42        | 33    | 107  |  |
| RRH | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 375  | 138       | 125   | 193  |  |
| WEL | 0     | 0    | 0     | 0    | 0     | 0    | 0    | 0      | 0     | 66   | 33        | 20    | 46   |  |
| WFA | 0     | 0    | 2     | 0    | -     |      | 0    | 0      |       | 7596 | 7688      | -     | -    |  |

BON and LGR have switched to video counts so the data is delayed.

These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.

Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.

Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.

Historic counts 1997 to present were obtained from the Corps of Engineers.

Page last updated on: 05/16/08

BON counts from January 1, 2008 to March 14, 2008 (our traditional counts begin March 15):

| Year | Chinook Adult | Chinook Jack | Steelhead | Wild Steelhead |
|------|---------------|--------------|-----------|----------------|
| 2008 | 42            | 0            | 578       | 278            |
| 2007 | 22            | 0            | 1,677     | 517            |

<sup>\*</sup>PRD is not posting wild steelhead numbers.