



Fish Passage Center

# Bi-Weekly Report #98-29

November 6, 1998

2501 SW First Ave., Suite 230  
 Portland, OR 97201-4752  
 phone: 503/230-4582  
 fax: 503/230-7559

**PLEASE NOTE: THIS IS THE LAST REPORT FOR 1998. SEE YOU NEXT YEAR!**

**SUMMARY OF EVENTS:**

**Water Supply:** Precipitation was normal or below normal for most of the basin during October. A cold front moved from the Pacific Northwest coast into eastern Washington and Oregon. This helped to generate a widespread area of 0.5 inch to 1-inch rainfall west of the Cascades, with isolated pockets of 1.5 to 2 inches near the northwest Oregon coast and mount St. Helens. Amounts were generally less than 0.25 inches west of the Cascades.

The mid range weather forecast for the region calls for continuation of light precipitation and temperatures that are close to normal for this time of year.

**System Storage:** The reservoirs continue drafting. A summary of actual elevations on November 5, 1998 is shown in the following table:

| Reservoir    | Actual Elev. [ft] 11/5/98 | Max. Pool [ft] |
|--------------|---------------------------|----------------|
| Libby        | 2342.96                   | 2459.0         |
| Hungry Horse | 3529.88                   | 3560.0         |
| Grand Coulee | 1283.40                   | 1290.0         |
| Brownlee     | 2020.90                   | 2077.0         |
| Dworshak     | 1517.19                   | 1600.0         |

\*elevation as of midnight 10/07/98

US reservoirs:

- Libby outflows were decreased from 8 kcfs to 6 kcfs on October 19 and will continue at this level for a while. The project is being operated to meet the December 31 flood control elevation of 2411 feet.

- Hungry Horse is currently drafting and releasing slightly more than 2 kcfs per day to maintain the minimum required flows of 3.5 kcfs at Columbia Falls.
- Grand Coulee continues to be operated at elevations between 1283 to 1284 ft.
- Brownlee is in refill and outflow was decreased from 20 kcfs on October 17 to 9 kcfs as a part of the fall chinook spawning program below Hells Canyon Dam. This outflow is expected to continue through the middle of December. It is expected that the reservoir will be about full by the beginning of December.
- Dworshak is in refill and operating at a minimum outflow of about 1.3 kcfs, for the purpose of meeting the 110% gas criteria.

**System Streamflow:** The summary of average bi-weekly flows for run of the river projects during October 9 through November 5 is shown in the following Table:

| Project       | October 9-22 | October 23-November 5 |
|---------------|--------------|-----------------------|
| Priest Rapids | 74.5 kcfs    | 79.6 kcfs             |
| McNary        | 100.4 kcfs   | 96.04 kcfs            |
| Lower Granite | 25.5 kcfs    | 17.90 kcfs            |
| Bonneville    | 101.3 kcfs   | 106.17 kcfs           |

The Salmon managers are requesting minimum daily flows of 125 kcfs below Bonneville Dam through the fall/winter season to facilitate spawning of the fall chinook salmon at Hamilton/Ives Island area.

**Smolt Monitoring:** At the Snake River monitoring sites, the last sample of the 1998 season as processed November 1. This sample included a separator clean out which provided increased numbers at Lower Granite and Little Goose of yearling chinook and coho than have been seen for a while. Since October 23, the subyearling chinook collections had averaged 14 fish per day at Lower Granite Dam, 2 fish per day at Little Goose Dam, and 1 fish per day at Lower Monumental Dam. During this time, collection of non-salmonids at Snake River dams has also declined; the dominant species, crappie, dropped to an average of 17 fish per day at Lower Granite Dam, 345 fish per day at Little Goose Dam, and 123 fish per day at Lower Monumental Dam.

In the lower Columbia River, the last sample of the season was processed on October 29 at John Day Dam and October 31 at Bonneville Dam. Since October 23, the subyearling chinook collections had averaged 19 fish per day at John Day Dam and 20 fish per 8-hr sample period at Bonneville Dam first powerhouse. During this time, expanded collection of shad averaged nearly 15,000 fish per day at John Day Dam and nearly 69,000 fish per 8-hr period at Bonneville Dam first powerhouse. Monitoring at McNary Dam is planned to continue until mid-December. During the past two-week period, the average collection of subyearling chinook was 85 fish per day. During this same time the expanded shad collection was nearly 47,000 fish per day.

**Adult Fish Passage:** October 31 was the final counting day at most Corps of Engineer dams, with the exceptions being Bonneville Dam and Lower Granite Dam; the Public Utility dams normally count through the middle of November.

At Bonneville Dam, all fish counts continued to fall through the end of October and into November, with the daily count on November 5 of 62 adult fall chinook. The season total through November 5 was 188,976, about 88% and nearly equal the respective 1997 count and 10-year average. Adult fall chinook (Upriver Bright Component) at The Dalles Dam was nearly 93,000 for

the season; about 80% of the 1997 count and 10-year average through the end of October; this total remained less than half the adult fall chinook counted at Bonneville Dam for the 1998 season. Adult fall chinook above McNary Dam totaled almost 64,000 for the 1998 fish passage season through October; this total was 74% and 90% of the respective 1997 count and 10-year average. The adult fall chinook counts at Ice Harbor Dam finished the 1998 season with a cumulative count through October 31 of nearly 4,300. This total was 188% of the 1997 count and 121% of the 10-year average. At Lower Granite Dam, about 1,900 adult chinook (wild and hatchery fish) have been counted along with almost 1,900 jack chinook. Of the fall chinook counted at Lower Granite Dam, approximately 1,100 adult hatchery fish have been returned to Lyons Ferry along with about 400 jack chinook. All wild and hatchery-reared fall chinook planted in the Clearwater or Snake River and intercepted at the Lower Granite trapping facility have been released back to the river to spawn above Lower Granite Dam. The number of jack chinook counted at Lower Granite Dam is from 3 to 6 times greater than the respective 1997 and 10-year average counts at the project. Fall chinook numbers returning to the Snake River should increase next season based on this year's jack returns and adult returns.

In the Mid-Columbia River, daily counts have decreased to less than 20 adult fish at each project by the end of the reporting week. At Priest Rapids Dam, the 1998 count of adult fall chinook totaled 9,423, about 84% and 88% of the 1997 and 10-year average. The number of jack chinook at the project was nearly 1,600, with that total greater than the 1997 jack count of 1,400, but well below the 10-year average of 2,400 jack chinook. Of the 9,400 adult fall chinook that passed Priest Rapids Dam, about 3,700 were counted at Rock Island Dam. This total was well below the 1997 and 10-year average. Most adult fall chinook counted at McNary Dam are destined for the Hanford Reach (wild spawners) and Ringold and Priest Rapids hatcheries located in this same stretch of river below Priest Rapids

Dam and above Richland, WA to spawn. The Yakima River Basin also has a run of fall chinook spawning in that River basin.

Steelhead passage at Bonneville Dam dropped to less than 50 fish per day for much of the report period, and was less than 20 by November 5. The Bonneville count through November 5 was just above 184,700, approximately 72% and 78.5% of the 1997 count and 10-year average, respectively. Of the steelhead counted at Bonneville Dam, about 111,000 have passed The Dalles Dam or about 60% of the Bonneville total. The wild steelhead count at Bonneville was 35,500 for the season, about 19.2% of the total steelhead run. The steelhead count at McNary Dam approached the 100,000 total for the 1998 season. The steelhead count at Ice Harbor Dam was nearly 76,000 for the passage season, with close to 64,000 of these fish above Lower Granite Dam. This total was close to 80% of the 1997 count and the 10-year average. The daily steelhead counts at PUD projects were less than 20 per day at each dam. with the season total at Priest Rapids now up to nearly 5,750. This total was approximately 64% and 65% of the respective 1997 count and 10-year average.

At Bonneville Dam, adult coho counts reduced to less than 50/day by the end of the report period, with the season total now exceeding 46,200. The 1998 coho count remained about double the 1997 count and 10-year average. These early returning coho far exceeded numbers expected back to the Columbia River above Bonneville Dam. Most coho passing Bonneville Dam normally return to Bonneville pool tributaries and hatcheries with a smaller portion destined for the Yakima River, the Umatilla River, a smaller number for the Clearwater River, and possibly a few destined for the Methow River. Approximately 8,200 adult coho have passed The Dalles Dam to date, with greater than 5,700 above McNary Dam. Only a handful has been counted into the Snake River and into the Mid-Columbia River this year.

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

| Date     | Grand Coulee |       | Chief Joseph |       | Wells |       | Rocky Reach |       | Rock Island |       | Wanapum |       | Priest Rapids |       |
|----------|--------------|-------|--------------|-------|-------|-------|-------------|-------|-------------|-------|---------|-------|---------------|-------|
|          | Flow         | Spill | Flow         | Spill | Flow  | Spill | Flow        | Spill | Flow        | Spill | Flow    | Spill | Flow          | Spill |
| 10/23/98 | 60.2         | 0.0   | 64.2         | 0.0   | 65.1  | 0.0   | 70.0        | 0.0   | 67.4        | 0.0   | 72.7    | 0.6   | 75.6          | 0.0   |
| 10/24/98 | 59.8         | 0.0   | 61.0         | 0.0   | 61.3  | 0.0   | 62.0        | 0.0   | 59.8        | 0.0   | 58.5    | 0.6   | 64.5          | 0.0   |
| 10/25/98 | 52.8         | 0.0   | 50.9         | 0.0   | 52.8  | 0.0   | 56.1        | 0.0   | 54.5        | 0.0   | 58.3    | 0.6   | 62.5          | 0.0   |
| 10/26/98 | 75.0         | 0.0   | 76.4         | 0.0   | 77.9  | 0.0   | 80.4        | 0.0   | 77.3        | 0.0   | 57.2    | 0.8   | 60.8          | 0.4   |
| 10/27/98 | 78.6         | 0.0   | 82.8         | 0.0   | 84.5  | 0.0   | 86.5        | 0.0   | 84.5        | 0.0   | 79.8    | 1.2   | 77.0          | 1.5   |
| 10/28/98 | 81.4         | 0.0   | 87.0         | 0.0   | 88.5  | 0.0   | 90.4        | 0.0   | 86.3        | 0.0   | 75.0    | 1.4   | 80.4          | 1.6   |
| 10/29/98 | 88.2         | 0.0   | 87.6         | 0.0   | 89.5  | 0.0   | 93.8        | 0.0   | 93.3        | 0.0   | 83.5    | 2.0   | 94.1          | 1.4   |
| 10/30/98 | 84.6         | 0.0   | 83.2         | 0.0   | 84.1  | 0.0   | 87.6        | 0.0   | 87.8        | 0.0   | 95.8    | 1.9   | 99.7          | 1.4   |
| 10/31/98 | 56.8         | 0.0   | 64.8         | 0.0   | 67.0  | 0.0   | 71.1        | 0.0   | 70.9        | 0.0   | 82.5    | 1.5   | 87.9          | 1.3   |
| 11/01/98 | 46.7         | 0.0   | 41.8         | 0.0   | 51.0  | 0.0   | 54.6        | 0.0   | 53.0        | 0.0   | 69.8    | 1.3   | 74.9          | 1.3   |
| 11/02/98 | 80.1         | 0.0   | 78.2         | 0.0   | 71.8  | 0.0   | 72.3        | 0.0   | 70.3        | 0.0   | 79.5    | 0.5   | 81.7          | 0.8   |
| 11/03/98 | 79.9         | 0.0   | 84.7         | 0.0   | 84.8  | 0.0   | 87.0        | 0.0   | 83.8        | 0.0   | 78.8    | 0.0   | 84.8          | 0.0   |
| 11/04/98 | 80.8         | 0.0   | 92.5         | 0.0   | 93.1  | 0.1   | 93.9        | 0.0   | 89.5        | 0.0   | 76.7    | 0.0   | 83.8          | 0.0   |
| 11/05/98 | 85.6         | 0.0   | 81.4         | 0.0   | 80.9  | 0.0   | 85.4        | 0.0   | 85.8        | 0.0   | 85.7    | 0.0   | 86.6          | 0.0   |

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

| Date     | Dworshak |       | Brownlee |       | Lower Granite |       | Little Goose |       | Lower Monumental |       | Ice Harbor |       |
|----------|----------|-------|----------|-------|---------------|-------|--------------|-------|------------------|-------|------------|-------|
|          | Flow     | Spill | Flow     | Spill | Flow          | Spill | Flow         | Spill | Flow             | Spill | Flow       | Spill |
| 10/23/98 | 1.4      | 0.0   | ---      | ---   | 17.7          | 0.0   | 17.5         | 0.0   | 19.4             | 0.0   | 19.4       | 0.0   |
| 10/24/98 | 1.4      | 0.0   | ---      | ---   | 17.7          | 0.0   | 18.9         | 0.0   | 19.1             | 0.0   | 18.9       | 0.0   |
| 10/25/98 | 1.4      | 0.0   | ---      | ---   | 19.0          | 0.0   | 18.7         | 0.0   | 20.1             | 0.0   | 19.0       | 0.0   |
| 10/26/98 | 1.4      | 0.0   | ---      | ---   | 18.0          | 0.0   | 19.2         | 0.0   | 21.3             | 0.0   | 20.5       | 0.0   |
| 10/27/98 | 1.4      | 0.0   | ---      | ---   | 17.4          | 0.0   | 17.7         | 0.0   | 18.4             | 0.0   | 17.5       | 0.0   |
| 10/28/98 | 1.4      | 0.0   | ---      | ---   | 18.0          | 0.0   | 18.1         | 0.0   | 18.4             | 0.0   | 18.1       | 0.0   |
| 10/29/98 | 1.4      | 0.0   | ---      | ---   | 18.2          | 0.0   | 18.4         | 0.0   | 20.6             | 0.0   | 21.6       | 0.0   |
| 10/30/98 | 1.3      | 0.0   | ---      | ---   | 18.6          | 0.0   | 18.2         | 0.0   | 19.0             | 0.0   | 17.3       | 0.0   |
| 10/31/98 | 1.3      | 0.0   | ---      | ---   | 17.0          | 0.0   | 17.4         | 0.0   | 18.9             | 0.0   | 19.0       | 0.0   |
| 11/01/98 | 1.3      | 0.0   | ---      | ---   | 17.8          | 0.0   | 17.2         | 0.0   | 18.6             | 0.0   | 16.9       | 0.0   |
| 11/02/98 | 1.3      | 0.0   | ---      | ---   | 18.3          | 0.0   | 18.8         | 0.0   | 19.5             | 0.0   | 18.8       | 0.0   |
| 11/03/98 | 1.3      | 0.0   | ---      | ---   | 17.5          | 0.0   | 18.6         | 0.0   | 18.9             | 0.0   | 19.0       | 0.0   |
| 11/04/98 | 1.3      | 0.0   | ---      | ---   | 17.2          | 0.0   | 18.0         | 0.0   | 19.7             | 0.0   | 18.9       | 0.0   |
| 11/05/98 | 1.3      | 0.0   | ---      | ---   | 17.7          | 0.0   | 17.9         | 0.0   | 19.4             | 0.0   | 19.4       | 0.0   |

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

| Date     | McNary |       | John Day |       | The Dalles |       | Bonneville |       | PH1  | PH2  |
|----------|--------|-------|----------|-------|------------|-------|------------|-------|------|------|
|          | Flow   | Spill | Flow     | Spill | Flow       | Spill | Flow       | Spill |      |      |
| 10/23/98 | 88.9   | 0.0   | 97.0     | 1.0   | 101.1      | 0.0   | 100.5      | 0.0   | 54.5 | 37.6 |
| 10/24/98 | 90.4   | 0.0   | 84.7     | 1.1   | 89.0       | 0.0   | 100.7      | 0.0   | 52.6 | 39.7 |
| 10/25/98 | 85.4   | 0.0   | 88.4     | 1.0   | 89.7       | 0.0   | 100.7      | 0.0   | 48.7 | 43.6 |
| 10/26/98 | 88.6   | 0.0   | 98.7     | 1.1   | 100.8      | 0.0   | 100.6      | 0.0   | 48.4 | 43.8 |
| 10/27/98 | 75.1   | 0.0   | 85.3     | 1.0   | 89.7       | 0.0   | 100.9      | 0.0   | 48.8 | 43.7 |
| 10/28/98 | 89.2   | 0.0   | 88.5     | 1.0   | 91.3       | 0.0   | 101.1      | 0.0   | 48.5 | 44.2 |
| 10/29/98 | 97.6   | 0.0   | 98.3     | 1.0   | 98.9       | 0.0   | 100.5      | 0.0   | 48.2 | 43.9 |
| 10/30/98 | 111.3  | 0.0   | 107.9    | 1.0   | 112.1      | 0.0   | 104.4      | 0.0   | 52.6 | 43.4 |
| 10/31/98 | 116.6  | 0.0   | 105.2    | 1.0   | 107.1      | 0.0   | 106.0      | 0.0   | 56.6 | 41.0 |
| 11/01/98 | 92.2   | 0.0   | 93.8     | 0.0   | 96.4       | 0.0   | 106.1      | 0.0   | 57.5 | 40.2 |
| 11/02/98 | 97.4   | 0.0   | 99.1     | 0.0   | 100.7      | 0.0   | 105.4      | 0.0   | 55.2 | 41.8 |
| 11/03/98 | 108.0  | 0.0   | 108.4    | 0.0   | 108.7      | 0.0   | 110.5      | 0.0   | 53.9 | 48.2 |
| 11/04/98 | 99.9   | 0.0   | 107.6    | 0.0   | 113.0      | 0.0   | 125.0      | 0.0   | M    | M    |
| 11/05/98 | 104.0  | 0.0   | 112.5    | 0.0   | 114.8      | 0.0   | ---        | ---   | 67.5 | 49.1 |

M = Missing data from COE.

## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High<sup>2</sup>

### Total Dissolved Gas Saturation Data at Upper Columbia Sites

| Date  | <u>Can. Boundary</u> |     |      | <u>Grand Coulee</u> |      |     |      | <u>Tlwr G. Coulee</u> |      |     |      | <u>Chief Joseph</u> |      |     |      | <u>Wells</u> |      |     |      | <u>Rocky Reach</u> |      |     |      |   |
|-------|----------------------|-----|------|---------------------|------|-----|------|-----------------------|------|-----|------|---------------------|------|-----|------|--------------|------|-----|------|--------------------|------|-----|------|---|
|       | 24 h                 |     | 12 h | #                   | 24 h |     | 12 h | #                     | 24 h |     | 12 h | #                   | 24 h |     | 12 h | #            | 24 h |     | 12 h | #                  | 24 h |     | 12 h | # |
|       | Avg                  | Avg | High |                     | Avg  | Avg | High |                       | Avg  | Avg | High |                     | Avg  | Avg | High |              | Avg  | Avg | High |                    | Avg  | Avg | High |   |
| 10/22 | 107                  | 108 | 109  | 24                  | 100  | 100 | 100  | 24                    | 100  | 101 | 103  | 24                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/23 | 107                  | 108 | 109  | 24                  | 100  | 100 | 100  | 24                    | 100  | 100 | 102  | 24                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/24 | 112                  | 113 | 116  | 21                  | 100  | 100 | 101  | 20                    | 100  | 101 | 102  | 20                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/25 | 112                  | 113 | 115  | 23                  | 99   | 99  | 100  | 23                    | 99   | 100 | 101  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/26 | 105                  | 106 | 108  | 16                  | 99   | 99  | 99   | 15                    | 98   | 99  | 101  | 15                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/27 | 107                  | 108 | 109  | 24                  | 100  | 100 | 100  | 23                    | 99   | 100 | 101  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/28 | 106                  | 106 | 107  | 24                  | 99   | 99  | 100  | 23                    | 99   | 99  | 101  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/29 | 104                  | 104 | 105  | 24                  | 100  | 102 | 112  | 23                    | 98   | 99  | 101  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/30 | 105                  | 107 | 109  | 24                  | 99   | 99  | 99   | 24                    | 98   | 98  | 99   | 24                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 10/31 | 108                  | 108 | 109  | 24                  | 98   | 98  | 99   | 24                    | 98   | 99  | 100  | 24                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 11/1  | 109                  | 109 | 110  | 24                  | 98   | 98  | 98   | 23                    | 99   | 100 | 100  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 11/2  | 108                  | 108 | 110  | 24                  | 97   | 97  | 98   | 23                    | 98   | 98  | 100  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 11/3  | 109                  | 109 | 110  | 24                  | 97   | 97  | 97   | 23                    | 97   | 98  | 100  | 23                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |
| 11/4  | 106                  | 106 | 108  | 12                  | 97   | 97  | 97   | 11                    | 98   | 98  | 101  | 11                  | ---  | --- | ---  | 0            | ---  | --- | ---  | 0                  | ---  | --- | ---  | 0 |

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

| Date  | <u>Tlwr. Rocky R.</u> |     |      | <u>Rock Island</u> |      |     |      | <u>Tlwr. Rock Island</u> |      |     |      | <u>Wanapum</u> |      |     |      | <u>Tlwr Wanapum</u> |      |     |      | <u>Priest Rapids</u> |      |     |      |   |
|-------|-----------------------|-----|------|--------------------|------|-----|------|--------------------------|------|-----|------|----------------|------|-----|------|---------------------|------|-----|------|----------------------|------|-----|------|---|
|       | 24 h                  |     | 12 h | #                  | 24 h |     | 12 h | #                        | 24 h |     | 12 h | #              | 24 h |     | 12 h | #                   | 24 h |     | 12 h | #                    | 24 h |     | 12 h | # |
|       | Avg                   | Avg | High |                    | Avg  | Avg | High |                          | Avg  | Avg | High |                | Avg  | Avg | High |                     | Avg  | Avg | High |                      | Avg  | Avg | High |   |
| 10/22 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/23 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/24 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/25 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/26 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/27 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/28 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/29 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/30 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 10/31 | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 11/1  | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 11/2  | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 11/3  | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |
| 11/4  | ---                   | --- | ---  | 0                  | ---  | --- | ---  | 0                        | ---  | --- | ---  | 0              | ---  | --- | ---  | 0                   | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0 |

### Total Dissolved Gas Saturation at Mid Columbia, Clearwater and Snake Sites

| Date  | <u>Dwnstr P Rapids</u> |     |      | <u>Dworshak</u> |      |     |      | <u>Clearwater</u> |      |     |      | <u>Snake-Lewiston</u> |      |     |      | <u>Lower Granite</u> |      |     |      | <u>Tlwr L. Granite</u> |      |     |      |   |
|-------|------------------------|-----|------|-----------------|------|-----|------|-------------------|------|-----|------|-----------------------|------|-----|------|----------------------|------|-----|------|------------------------|------|-----|------|---|
|       | 24 h                   |     | 12 h | #               | 24 h |     | 12 h | #                 | 24 h |     | 12 h | #                     | 24 h |     | 12 h | #                    | 24 h |     | 12 h | #                      | 24 h |     | 12 h | # |
|       | Avg                    | Avg | High |                 | Avg  | Avg | High |                   | Avg  | Avg | High |                       | Avg  | Avg | High |                      | Avg  | Avg | High |                        | Avg  | Avg | High |   |
| 10/22 | ---                    | --- | ---  | 0               | 108  | 109 | 110  | 24                | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 99   | 100 | 100  | 24                     | ---  | --- | ---  | 0 |
| 10/23 | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 99   | 100 | 100  | 24                     | ---  | --- | ---  | 0 |
| 10/24 | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 101  | 23                     | ---  | --- | ---  | 0 |
| 10/25 | ---                    | --- | ---  | 0               | 108  | 109 | 109  | 23                | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 99   | 99  | 100  | 24                     | ---  | --- | ---  | 0 |
| 10/26 | ---                    | --- | ---  | 0               | 108  | 108 | 109  | 12                | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 103  | 18                     | ---  | --- | ---  | 0 |
| 10/27 | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 101  | 101 | 101  | 13                     | ---  | --- | ---  | 0 |
| 10/28 | ---                    | --- | ---  | 0               | 108  | 109 | 110  | 24                | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 101  | 24                     | ---  | --- | ---  | 0 |
| 10/29 | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 100  | 24                     | ---  | --- | ---  | 0 |
| 10/30 | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 101  | 23                     | ---  | --- | ---  | 0 |
| 10/31 | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 101  | 101 | 101  | 24                     | ---  | --- | ---  | 0 |
| 11/1  | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 101  | 24                     | ---  | --- | ---  | 0 |
| 11/2  | ---                    | --- | ---  | 0               | 109  | 109 | 109  | 5                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | 100  | 100 | 100  | 5                      | ---  | --- | ---  | 0 |
| 11/3  | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0                      | ---  | --- | ---  | 0 |
| 11/4  | ---                    | --- | ---  | 0               | ---  | --- | ---  | 0                 | ---  | --- | ---  | 0                     | ---  | --- | ---  | 0                    | ---  | --- | ---  | 0                      | ---  | --- | ---  | 0 |

<sup>1</sup> Data provided by the Corps of Engineers.

<sup>2</sup> Dissolved gas readings and averages have been rounded to the nearest integer.

## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High<sup>2</sup>

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

| Date  | <u>Little Goose</u> |             |          | <u>Tlwtr L. Goose</u> |             |          | <u>Lower Mon.</u> |             |          | <u>Tlwtr L. Mon</u> |             |          | <u>Ice Harbor</u> |             |          | <u>Tlwtr Ice Harbor</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>24 h</u>             | <u>12 h</u> | <u>#</u> |      |    |     |     |     |    |
|       | Avg                 | Avg         | High     | hr                    | Avg         | Avg      | High              | hr          | Avg      | Avg                 | High        | hr       | Avg               | Avg         | High     | hr                      | Avg         | Avg      | High | hr |     |     |     |    |
| 10/22 | 96                  | 96          | 96       | 24                    | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 95          | 95       | 96   | 16 | 97  | 98  | 98  | 16 |
| 10/23 | 95                  | 95          | 96       | 7                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 24 | 98  | 98  | 98  | 24 |
| 10/24 | ---                 | ---         | ---      | 0                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 17 | 98  | 98  | 98  | 17 |
| 10/25 | ---                 | ---         | ---      | 0                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 20 | 98  | 98  | 98  | 20 |
| 10/26 | ---                 | ---         | ---      | 0                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 16 | 98  | 98  | 99  | 16 |
| 10/27 | ---                 | ---         | ---      | 0                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 97          | 97       | 97   | 16 | 98  | 99  | 100 | 16 |
| 10/28 | 97                  | 97          | 97       | 24                    | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 97   | 24 | 98  | 98  | 98  | 24 |
| 10/29 | 96                  | 96          | 97       | 24                    | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 24 | 98  | 98  | 98  | 24 |
| 10/30 | 96                  | 96          | 97       | 23                    | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 24 | 97  | 98  | 98  | 24 |
| 10/31 | 97                  | 97          | 97       | 24                    | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 97   | 24 | 97  | 97  | 97  | 24 |
| 11/1  | 97                  | 97          | 97       | 24                    | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 24 | 97  | 97  | 98  | 24 |
| 11/2  | 97                  | 97          | 97       | 6                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | 96          | 96       | 96   | 5  | 97  | 97  | 97  | 5  |
| 11/3  | ---                 | ---         | ---      | 0                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | ---         | ---      | ---  | 0  | --- | --- | --- | 0  |
| 11/4  | ---                 | ---         | ---      | 0                     | ---         | ---      | ---               | 0           | ---      | ---                 | ---         | 0        | ---               | ---         | ---      | 0                       | ---         | ---      | ---  | 0  | --- | --- | --- | 0  |

**Total Dissolved Gas Saturation Data at Lower Columbia Sites**

| Date  | <u>McNary-Oregon</u> |             |          | <u>McNary-Wash.</u> |             |          | <u>Tlwtr McNary</u> |             |          | <u>John Day</u> |             |          | <u>Tlwtr John Day</u> |             |          | <u>The Dalles</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>24 h</u>       | <u>12 h</u> | <u>#</u> |      |    |     |     |     |   |
|       | Avg                  | Avg         | High     | hr                  | Avg         | Avg      | High                | hr          | Avg      | Avg             | High        | hr       | Avg                   | Avg         | High     | hr                | Avg         | Avg      | High | hr |     |     |     |   |
| 10/22 | 99                   | 100         | 101      | 24                  | 100         | 100      | 100                 | 24          | 99       | 99              | 100         | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/23 | 99                   | 100         | 101      | 24                  | 100         | 101      | 101                 | 24          | 99       | 99              | 100         | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/24 | 99                   | 100         | 100      | 24                  | 100         | 101      | 101                 | 24          | 99       | 100             | 100         | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/25 | 99                   | 100         | 101      | 25                  | 99          | 99       | 100                 | 25          | 99       | 99              | 99          | 25       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/26 | 99                   | 99          | 100      | 16                  | 99          | 100      | 101                 | 16          | 99       | 99              | 100         | 16       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/27 | 100                  | 100         | 103      | 16                  | 102         | 102      | 102                 | 16          | 100      | 100             | 101         | 16       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/28 | 99                   | 99          | 99       | 24                  | 100         | 100      | 101                 | 24          | 100      | 100             | 101         | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/29 | 99                   | 99          | 100      | 24                  | 99          | 99       | 100                 | 24          | 98       | 99              | 99          | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/30 | 98                   | 99          | 99       | 24                  | 99          | 99       | 99                  | 24          | 98       | 98              | 99          | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/31 | 98                   | 99          | 99       | 24                  | 99          | 99       | 99                  | 24          | 98       | 98              | 99          | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/1  | 98                   | 98          | 99       | 24                  | 98          | 98       | 99                  | 24          | 98       | 98              | 98          | 24       | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/2  | 98                   | 98          | 98       | 3                   | 98          | 98       | 98                  | 5           | 97       | 97              | 98          | 5        | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/3  | ---                  | ---         | ---      | 0                   | ---         | ---      | ---                 | 0           | ---      | ---             | ---         | 0        | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/4  | ---                  | ---         | ---      | 0                   | ---         | ---      | ---                 | 0           | ---      | ---             | ---         | 0        | ---                   | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |

**Total Dissolved Gas Saturation Data at Lower Columbia Sites**

| Date  | <u>Dnstr T. Dalles</u> |             |          | <u>Bonneville</u> |             |          | <u>Warrendale</u> |             |          | <u>Skamania</u> |             |          | <u>Camas/Wash.</u> |             |          | <u>Wauna Mill</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>24 h</u>       | <u>12 h</u> | <u>#</u> |      |    |     |     |     |   |
|       | Avg                    | Avg         | High     | hr                | Avg         | Avg      | High              | hr          | Avg      | Avg             | High        | hr       | Avg                | Avg         | High     | hr                | Avg         | Avg      | High | hr |     |     |     |   |
| 10/22 | ---                    | ---         | ---      | 0                 | 98          | 98       | 98                | 23          | 99       | 99              | 99          | 23       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/23 | ---                    | ---         | ---      | 0                 | 98          | 98       | 99                | 24          | 99       | 100             | 100         | 24       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/24 | ---                    | ---         | ---      | 0                 | 98          | 99       | 99                | 19          | 100      | 100             | 100         | 19       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/25 | ---                    | ---         | ---      | 0                 | 97          | 97       | 98                | 23          | 99       | 99              | 99          | 23       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/26 | ---                    | ---         | ---      | 0                 | 97          | 97       | 98                | 18          | 99       | 99              | 100         | 18       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/27 | ---                    | ---         | ---      | 0                 | 98          | 99       | 99                | 24          | 99       | 99              | 100         | 10       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/28 | ---                    | ---         | ---      | 0                 | 97          | 98       | 98                | 24          | 96       | 96              | 97          | 21       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/29 | ---                    | ---         | ---      | 0                 | 97          | 97       | 97                | 24          | 96       | 96              | 97          | 18       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/30 | ---                    | ---         | ---      | 0                 | 97          | 97       | 98                | 24          | 98       | 99              | 106         | 23       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 10/31 | ---                    | ---         | ---      | 0                 | 97          | 97       | 98                | 24          | 98       | 98              | 98          | 24       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/1  | ---                    | ---         | ---      | 0                 | 97          | 97       | 97                | 24          | 98       | 98              | 99          | 17       | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/2  | ---                    | ---         | ---      | 0                 | 97          | 98       | 98                | 24          | ---      | ---             | ---         | 0        | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/3  | ---                    | ---         | ---      | 0                 | 98          | 98       | 98                | 24          | ---      | ---             | ---         | 0        | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |
| 11/4  | ---                    | ---         | ---      | 0                 | 98          | 98       | 99                | 14          | ---      | ---             | ---         | 0        | ---                | ---         | ---      | 0                 | ---         | ---      | ---  | 0  | --- | --- | --- | 0 |

<sup>1</sup> Data provided by the Corps of Engineers.

<sup>2</sup> Dissolved gas readings and averages have been rounded to the nearest integer.

## Two-Week Summary of Passage Indices

| Date            | Yearling Chinook |               |               |               |                |                |                | Hatchery/Wild Combined |                |                |                |
|-----------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|------------------------|----------------|----------------|----------------|
|                 | WTB<br>(Coll)    | IMN<br>(Coll) | GRN<br>(Coll) | Hatchery      |                |                | LMN<br>(INDEX) | RIS<br>(INDEX)         | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
|                 |                  |               |               | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) |                |                        |                |                |                |
| 10/23/98        | ---              | ---           | ---           | ---           | 29             | 1              | 0              | ---                    | 0              | 0              | 0              |
| 10/24/98        | ---              | ---           | ---           | ---           | 30             | 1              | 0              | ---                    | 0              | 0              | 0              |
| 10/25/98        | ---              | ---           | ---           | ---           | 30             | 3              | 0              | ---                    | 0              | 0              | 15             |
| 10/26/98        | ---              | ---           | ---           | ---           | 16             | 7              | 0              | ---                    | 0              | 0              | 0              |
| 10/27/98        | ---              | ---           | ---           | ---           | 11             | 2              | 1              | ---                    | 0              | 0              | 0              |
| 10/28/98        | ---              | ---           | ---           | ---           | 8              | 0              | 1              | ---                    | 0              | 0              | 0              |
| 10/29/98        | ---              | ---           | ---           | ---           | 9              | 2              | 0              | ---                    | 0              | 0              | 0              |
| 10/30/98        | ---              | ---           | ---           | ---           | 7              | 3              | 0              | ---                    | 0              | ---            | 15             |
| 10/31/98        | ---              | ---           | ---           | ---           | 26             | 1              | 0              | ---                    | 0              | ---            | 7              |
| 11/01/98        | ---              | ---           | ---           | ---           | 80             | 9              | 0              | ---                    | 0              | ---            | ---            |
| 11/02/98        | ---              | ---           | ---           | ---           | ---            | ---            | ---            | ---                    | 0              | ---            | ---            |
| 11/03/98        | ---              | ---           | ---           | ---           | ---            | ---            | ---            | ---                    | 0              | ---            | ---            |
| 11/04/98        | ---              | ---           | ---           | ---           | ---            | ---            | ---            | ---                    | 0              | ---            | ---            |
| 11/05/98        | ---              | ---           | ---           | ---           | ---            | ---            | ---            | ---                    | 0              | ---            | ---            |
| <b>Total:</b>   | 0                | 0             | 0             | 0             | 246            | 29             | 2              | 0                      | 0              | 0              | 37             |
| <b># Days:</b>  | 0                | 0             | 0             | 0             | 10             | 10             | 10             | 0                      | 14             | 7              | 9              |
| <b>Average:</b> | 0                | 0             | 0             | 0             | 25             | 3              | 0              | 0                      | 0              | 0              | 4              |

| Date            | Wild Yearling Chinook |               |               |               |                |                |                | Wild Subyearling Chinook |                |                |
|-----------------|-----------------------|---------------|---------------|---------------|----------------|----------------|----------------|--------------------------|----------------|----------------|
|                 | WTB<br>(Coll)         | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | LGR<br>(INDEX)           | LGS<br>(INDEX) | LMN<br>(INDEX) |
| 10/23/98        | ---                   | ---           | ---           | ---           | 0              | 0              | 0              | 31                       | 5              | 1              |
| 10/24/98        | ---                   | ---           | ---           | ---           | 1              | 0              | 0              | 24                       | 2              | 4              |
| 10/25/98        | ---                   | ---           | ---           | ---           | 0              | 0              | 0              | 7                        | 4              | 0              |
| 10/26/98        | ---                   | ---           | ---           | ---           | 0              | 0              | 0              | 13                       | 2              | 0              |
| 10/27/98        | ---                   | ---           | ---           | ---           | 0              | 1              | 0              | 6                        | 2              | 1              |
| 10/28/98        | ---                   | ---           | ---           | ---           | 3              | 0              | 0              | 7                        | 1              | 0              |
| 10/29/98        | ---                   | ---           | ---           | ---           | 0              | 0              | 0              | 4                        | 2              | 1              |
| 10/30/98        | ---                   | ---           | ---           | ---           | 1              | 0              | 0              | 7                        | 3              | 2              |
| 10/31/98        | ---                   | ---           | ---           | ---           | 2              | 1              | 0              | 3                        | 1              | 0              |
| 11/01/98        | ---                   | ---           | ---           | ---           | 4              | 0              | 0              | 39                       | 0              | 0              |
| 11/02/98        | ---                   | ---           | ---           | ---           | ---            | ---            | ---            | ---                      | ---            | ---            |
| 11/03/98        | ---                   | ---           | ---           | ---           | ---            | ---            | ---            | ---                      | ---            | ---            |
| 11/04/98        | ---                   | ---           | ---           | ---           | ---            | ---            | ---            | ---                      | ---            | ---            |
| 11/05/98        | ---                   | ---           | ---           | ---           | ---            | ---            | ---            | ---                      | ---            | ---            |
| <b>Total:</b>   | 0                     | 0             | 0             | 0             | 11             | 2              | 0              | 141                      | 22             | 9              |
| <b># Days:</b>  | 0                     | 0             | 0             | 0             | 10             | 10             | 10             | 10                       | 10             | 10             |
| <b>Average:</b> | 0                     | 0             | 0             | 0             | 1              | 0              | 0              | 14                       | 2              | 1              |

The data presented in the following passage index section is preliminary and has been derived from various sources. For verification and/or origin of data, contact the operators of the Fish Passage Data System at (503) 230-4099.

Smolt indices, wild & hatchery 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 sampling system. Collection counts may be constrained due to sampling effort or river flow. 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 hour period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

## Two-Week Summary of Passage Indices

| Date            | Hatchery Subyearling Chinook |               |               |               |                |                |                | Combined Subyearling Chinook |                |                |                |
|-----------------|------------------------------|---------------|---------------|---------------|----------------|----------------|----------------|------------------------------|----------------|----------------|----------------|
|                 | WTB<br>(Coll)                | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | RIS<br>(INDEX)               | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
| 10/23/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 20             | 28             | 47             |
| 10/24/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 30             | 20             | 35             |
| 10/25/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 90             | 20             | 8              |
| 10/26/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 36             | 20             | 23             |
| 10/27/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 30             | 12             | 15             |
| 10/28/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 54             | 28             | 8              |
| 10/29/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 42             | 8              | 31             |
| 10/30/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 78             | ---            | 7              |
| 10/31/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 114            | ---            | 7              |
| 11/01/98        | ---                          | ---           | ---           | ---           | 0              | 0              | 0              | ---                          | 70             | ---            | ---            |
| 11/02/98        | ---                          | ---           | ---           | ---           | ---            | ---            | ---            | ---                          | 70             | ---            | ---            |
| 11/03/98        | ---                          | ---           | ---           | ---           | ---            | ---            | ---            | ---                          | 90             | ---            | ---            |
| 11/04/98        | ---                          | ---           | ---           | ---           | ---            | ---            | ---            | ---                          | 210            | ---            | ---            |
| 11/05/98        | ---                          | ---           | ---           | ---           | ---            | ---            | ---            | ---                          | 250            | ---            | ---            |
| <b>Total:</b>   | 0                            | 0             | 0             | 0             | 0              | 0              | 0              | 0                            | 1,184          | 136            | 181            |
| <b># Days:</b>  | 0                            | 0             | 0             | 0             | 10             | 10             | 10             | 0                            | 14             | 7              | 9              |
| <b>Average:</b> | 0                            | 0             | 0             | 0             | 0              | 0              | 0              | 0                            | 85             | 19             | 20             |

| Date            | All Coho      |               |               |               |                |                |                |                |                |                |                |
|-----------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                 | WTB<br>(Coll) | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | RIS<br>(INDEX) | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
| 10/23/98        | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/24/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/25/98        | ---           | ---           | ---           | ---           | 4              | 1              | 0              | ---            | 0              | 0              | 15             |
| 10/26/98        | ---           | ---           | ---           | ---           | 3              | 1              | 0              | ---            | 0              | 0              | 8              |
| 10/27/98        | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/28/98        | ---           | ---           | ---           | ---           | 0              | 1              | 0              | ---            | 0              | 0              | 0              |
| 10/29/98        | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/30/98        | ---           | ---           | ---           | ---           | 0              | 1              | 0              | ---            | 0              | ---            | 0              |
| 10/31/98        | ---           | ---           | ---           | ---           | 0              | 1              | 0              | ---            | 0              | ---            | 0              |
| 11/01/98        | ---           | ---           | ---           | ---           | 15             | 16             | 0              | ---            | 0              | ---            | ---            |
| 11/02/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/03/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/04/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/05/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| <b>Total:</b>   | 0             | 0             | 0             | 0             | 25             | 21             | 0              | 0              | 0              | 0              | 23             |
| <b># Days:</b>  | 0             | 0             | 0             | 0             | 10             | 10             | 10             | 0              | 14             | 7              | 9              |
| <b>Average:</b> | 0             | 0             | 0             | 0             | 3              | 2              | 0              | 0              | 0              | 0              | 3              |

**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) }



## Two-Week Summary of Passage Indices

| Hatchery Steelhead |               |               |               |               |                |                |                |                |                |                |                |
|--------------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Date               | WTB<br>(Coll) | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | RIS<br>(INDEX) | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
| 10/23/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/24/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/25/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/26/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/27/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/28/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/29/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/30/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | ---            | 0              |
| 10/31/98           | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | ---            | 0              |
| 11/01/98           | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | ---            | ---            |
| 11/02/98           | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/03/98           | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/04/98           | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/05/98           | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| <b>Total:</b>      | 0             | 0             | 0             | 0             | 1              | 0              | 0              | 0              | 0              | 0              | 0              |
| <b># Days:</b>     | 0             | 0             | 0             | 0             | 10             | 10             | 10             | 0              | 14             | 7              | 9              |
| <b>Average:</b>    | 0             | 0             | 0             | 0             | 0              | 0              | 0              | 0              | 0              | 0              | 0              |

| Wild Steelhead  |               |               |               |               |                |                |                |                |                |                |                |
|-----------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Date            | WTB<br>(Coll) | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | RIS<br>(INDEX) | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
| 10/23/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/24/98        | ---           | ---           | ---           | ---           | 1              | 1              | 1              | ---            | 0              | 0              | 0              |
| 10/25/98        | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/26/98        | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/27/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/28/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/29/98        | ---           | ---           | ---           | ---           | 0              | 1              | 0              | ---            | 0              | 0              | 0              |
| 10/30/98        | ---           | ---           | ---           | ---           | 2              | 0              | 1              | ---            | 0              | ---            | 0              |
| 10/31/98        | ---           | ---           | ---           | ---           | 3              | 1              | 0              | ---            | 0              | ---            | 0              |
| 11/01/98        | ---           | ---           | ---           | ---           | 3              | 0              | 0              | ---            | 0              | ---            | ---            |
| 11/02/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/03/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/04/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/05/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| <b>Total:</b>   | 0             | 0             | 0             | 0             | 11             | 3              | 2              | 0              | 0              | 0              | 0              |
| <b># Days:</b>  | 0             | 0             | 0             | 0             | 10             | 10             | 10             | 0              | 14             | 7              | 9              |
| <b>Average:</b> | 0             | 0             | 0             | 0             | 1              | 0              | 0              | 0              | 0              | 0              | 0              |

**Definitions for Smolt Index Counts.**

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouses 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) }

BO1 (Index)= Bonneville Dam First Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 1 Flow / (Powerhouses 1 & 2 +Flow + Spill)}

## Two-Week Summary of Passage Indices

| Hatchery Sockeye |               |               |               |               |                |                |                |                |                |                |                |
|------------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Date             | WTB<br>(Coll) | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | RIS<br>(INDEX) | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
| 10/23/98         | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/24/98         | ---           | ---           | ---           | ---           | 2              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/25/98         | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/26/98         | ---           | ---           | ---           | ---           | 2              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/27/98         | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/28/98         | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/29/98         | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/30/98         | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | ---            | 0              |
| 10/31/98         | ---           | ---           | ---           | ---           | 2              | 0              | 0              | ---            | 0              | ---            | 0              |
| 11/01/98         | ---           | ---           | ---           | ---           | 1              | 0              | 0              | ---            | 0              | ---            | ---            |
| 11/02/98         | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/03/98         | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/04/98         | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/05/98         | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| <b>Total:</b>    | 0             | 0             | 0             | 0             | 7              | 0              | 0              | 0              | 0              | 0              | 0              |
| <b># Days:</b>   | 0             | 0             | 0             | 0             | 10             | 10             | 10             | 0              | 14             | 7              | 9              |
| <b>Average:</b>  | 0             | 0             | 0             | 0             | 1              | 0              | 0              | 0              | 0              | 0              | 0              |

| Wild Sockeye    |               |               |               |               |                |                |                |                |                |                |                |
|-----------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Date            | WTB<br>(Coll) | IMN<br>(Coll) | GRN<br>(Coll) | LEW<br>(Coll) | LGR<br>(INDEX) | LGS<br>(INDEX) | LMN<br>(INDEX) | RIS<br>(INDEX) | MCN<br>(INDEX) | JDA<br>(INDEX) | BO1<br>(INDEX) |
| 10/23/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/24/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/25/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/26/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 4              | 0              |
| 10/27/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/28/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/29/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | 0              | 0              |
| 10/30/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | ---            | 0              |
| 10/31/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | ---            | 0              |
| 11/01/98        | ---           | ---           | ---           | ---           | 0              | 0              | 0              | ---            | 0              | ---            | ---            |
| 11/02/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/03/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/04/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| 11/05/98        | ---           | ---           | ---           | ---           | ---            | ---            | ---            | ---            | 0              | ---            | ---            |
| <b>Total:</b>   | 0             | 0             | 0             | 0             | 0              | 0              | 0              | 0              | 0              | 4              | 0              |
| <b># Days:</b>  | 0             | 0             | 0             | 0             | 10             | 10             | 10             | 0              | 14             | 7              | 9              |
| <b>Average:</b> | 0             | 0             | 0             | 0             | 0              | 0              | 0              | 0              | 0              | 1              | 0              |

LEW and WTB data collected for the FPC by Idaho Dept. of Fish and Game.

JDA and BO1 data collected for the FPC by National Marine Fisheries Service.

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.

### Cumulative Adult Passage at Mainstem Dams Through November 05, 1998

|     | Spring Chinook |      |         |      |            |       | Summer Chinook |       |        |       |            |       | Fall Chinook |        |         |        |            |        |
|-----|----------------|------|---------|------|------------|-------|----------------|-------|--------|-------|------------|-------|--------------|--------|---------|--------|------------|--------|
|     | 1998           |      | 1997    |      | 10-Yr Avg. |       | 1998           |       | 1997   |       | 10-Yr Avg. |       | 1998         |        | 1997    |        | 10-Yr Avg. |        |
|     | Adult          | Jack | Adult   | Jack | Adult      | Jack  | Adult          | Jack  | Adult  | Jack  | Adult      | Jack  | Adult        | Jack   | Adult   | Jack   | Adult      | Jack   |
| BON | 38,252         | 762  | 114,000 | 963  | 71,826     | 2,812 | 21,433         | 2,674 | 27,939 | 1,926 | 21,772     | 2,906 | 188,976      | 28,582 | 214,700 | 23,485 | 187,706    | 35,084 |
| TDA | 25,330         | 503  | 69,365  | 375  | 44,144     | 1,889 | 15,475         | 1,565 | 20,201 | 1,255 | 18,063     | 2,140 | 92,880       | 18,551 | 117,988 | 14,619 | 115,527    | 25,666 |
| JDA | 22,495         | 418  | 62,253  | 327  | 34,393     | 1,541 | 16,907         | 1,557 | 20,508 | 1,261 | 15,790     | 1,851 | 77,021       | 11,846 | 86,305  | 14,086 | 85,502     | 19,619 |
| MCN | 19,456         | 335  | 57,832  | 404  | 33,819     | 1,722 | 16,223         | 1,413 | 20,934 | 1,417 | 16,965     | 1,827 | 63,791       | 13,425 | 67,117  | 15,110 | 71,694     | 22,022 |
| IHR | 12,420         | 131  | 41,398  | 75   | 18,178     | 714   | 5,485          | 299   | 9,196  | 122   | 4,618      | 417   | 4,281        | 3,469  | 2,752   | 1,726  | 3,531      | 1,400  |
| LMN | 10,627         | 126  | 38,479  | 146  | 17,565     | 767   | 4,319          | 301   | 9,153  | 100   | 4,391      | 442   | 3,045        | 3,162  | 2,281   | 1,397  | 2,088      | 1,011  |
| LGS | 10,218         | 104  | 37,874  | 108  | n/a        | n/a   | 4,345          | 341   | 9,372  | 65    | n/a        | n/a   | 2,081        | 2,504  | 1,619   | 626    | n/a        | n/a    |
| LWG | 9,881          | 106  | 33,855  | 81   | 15,110     | 655   | 4,440          | 325   | 10,709 | 127   | 4,392      | 430   | 1,875        | 1,955  | 1,440   | 484    | 877        | 273    |
| PRD | 4,147          | 37   | 6,780   | 8    | 10,704     | 173   | 13,951         | 612   | 13,107 | 509   | 13,949     | 581   | 9,423        | 1,561  | 11,185  | 1,424  | 10,737     | 2,437  |
| RIS | 3,270          | 54   | 6,153   | 52   | 8,534      | 192   | 11,689         | 1,127 | 10,960 | 614   | 11,712     | 998   | 3,662        | 937    | 4,095   | 829    | 4,664      | 1,875  |
| RRH | 789            | 53   | 1,856   | 10   | 2,066      | 52    | 6,817          | 332   | 5,614  | 694   | 4,258      | 397   | 2,669        | 405    | 2,301   | 763    | 2,751      | 756    |
| WEL | 6              | 4    | 942     | 29   | 1,204      | 50    | 2,829          | 924   | 2,569  | 152   | 2,716      | 280   | 1,000        | 142    | 578     | 156    | 1,069      | 336    |

|     | Coho   |       |        |       |            |       | Sockeye |        |            | Steelhead |         |            |           |
|-----|--------|-------|--------|-------|------------|-------|---------|--------|------------|-----------|---------|------------|-----------|
|     | 1998   |       | 1997   |       | 10-Yr Avg. |       | 1998    | 1997   | 10-Yr Avg. | 1998      | 1997    | 10-Yr Avg. | Wild 1998 |
|     | Adult  | Jack  | Adult  | Jack  | Adult      | Jack  |         |        |            |           |         |            |           |
| BON | 46,204 | 3,607 | 23,996 | 3,187 | 21,722     | 7,395 | 13,219  | 47,008 | 51,155     | 184,703   | 258,067 | 235,230    | 35,661    |
| TDA | 8,196  | 775   | 4,067  | 662   | 4,605      | 2,104 | 8,828   | 32,429 | 40,187     | 115,018   | 164,756 | 170,582    | 24,005    |
| JDA | 7,683  | 851   | 3,518  | 711   | 3,467      | 1,681 | 9,918   | 35,830 | 40,547     | 161,012   | 157,008 | 144,650    | 30,420    |
| MCN | 5,842  | 212   | 2,257  | 319   | 1,293      | 708   | 9,392   | 38,043 | 42,643     | 99,791    | 129,114 | 132,851    | 17,703    |
| IHR | 10     | 4     | 100    | 1     | 11         | 0     | 3       | 16     | 11         | 77,128    | 94,802  | 100,008    | 10,644    |
| LMN | 0      | 0     | 28     | 2     | 4          | 2     | 3       | 16     | 11         | 65,531    | 85,602  | 87,697     | 8,350     |
| LGS | 3      | 0     | 53     | 6     | n/a        | n/a   | 5       | 10     | n/a        | 63,727    | 74,219  | n/a        | 8,660     |
| LWG | 6      | 2     | 74     | 7     | 7          | 1     | 4       | 11     | 8          | 63,750    | 77,980  | 79,637     | 8,776     |
| PRD | 31     | 1     | 25     | 1     | 16         | 3     | 11,608  | 45,412 | 47,428     | 5,750     | 8,895   | 8,995      | 0         |
| RIS | 0      | 0     | 5      | 0     | 107        | 0     | 9,323   | 41,504 | 41,413     | 4,810     | 7,660   | 7,761      | 0         |
| RRH | 0      | 0     | 0      | 0     | 50         | 0     | 5,682   | 30,485 | 21,428     | 4,265     | 6,648   | 5,121      | 0         |
| WEL | 1      | 3     | 3      | 5     | 19         | 1     | 4,638   | 25,754 | 20,525     | 2,482     | 4,020   | 4,078      | 231       |

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

1996, 1997, and 1998 counts were obtained from the Corps of Engineers.

1998 totals at LWG are based on video counts accumulated through November 04.

1998 totals at WEL are through Nov. 3. Totals at RRH are through Nov. 2

Adult count records at LGS have been maintained since 1993.

NOTE: Through June 28, all (spring) chinook are being trapped and removed from the ladder at Wells prior to the counting window.

NOTE: 1998 John Day Steelhead counts will be revised downwards.

NOTE: PRD, RIS, and RRH, are not reporting Wild Steelhead numbers.

NOTE: RIS 1998 Coho count revised from 9 to zero based on FPC communication with WDFW.

## Transportation Summary Report

### Two-Week Transportation Summary from 10/23/98 to 11/05/98

|                             | Yearling<br>Chinook | Subyearling<br>Chinook | Steelhead | Coho      | Sockeye  | Total        |
|-----------------------------|---------------------|------------------------|-----------|-----------|----------|--------------|
| <b>LOWER GRANITE DAM</b>    |                     |                        |           |           |          |              |
| Collected                   | 257                 | 141                    | 12        | 25        | 7        | 442          |
| Bypassed                    | 0                   | 0                      | 11        | 16        | 0        | 27           |
| Trucked                     | 254                 | 141                    | 1         | 8         | 7        | 411          |
| Barged                      | 0                   | 0                      | 0         | 0         | 0        | 0            |
| <b>Total Transported</b>    | <b>254</b>          | <b>141</b>             | <b>1</b>  | <b>8</b>  | <b>7</b> | <b>411</b>   |
| <b>LITTLE GOOSE DAM</b>     |                     |                        |           |           |          |              |
| Collected                   | 31                  | 22                     | 3         | 21        | 0        | 77           |
| Bypassed                    | 0                   | 0                      | 3         | 0         | 0        | 3            |
| Trucked                     | 30                  | 22                     | 0         | 20        | 0        | 72           |
| Barged                      | 0                   | 0                      | 0         | 0         | 0        | 0            |
| <b>Total Transported</b>    | <b>30</b>           | <b>22</b>              | <b>0</b>  | <b>20</b> | <b>0</b> | <b>72</b>    |
| <b>LOWER MONUMENTAL DAM</b> |                     |                        |           |           |          |              |
| Collected                   | 2                   | 9                      | 2         | 0         | 0        | 13           |
| Bypassed                    | 0                   | 0                      | 2         | 0         | 0        | 2            |
| Trucked                     | 2                   | 9                      | 0         | 0         | 0        | 11           |
| Barged                      | 0                   | 0                      | 0         | 0         | 0        | 0            |
| <b>Total Transported</b>    | <b>2</b>            | <b>9</b>               | <b>0</b>  | <b>0</b>  | <b>0</b> | <b>11</b>    |
| <b>MCNARY DAM</b>           |                     |                        |           |           |          |              |
| Collected                   | 0                   | 1,184                  | 0         | 0         | 0        | 1,184        |
| Bypassed                    | 0                   | 274                    | 0         | 0         | 0        | 274          |
| Trucked                     | 0                   | 904                    | 0         | 0         | 0        | 904          |
| Barged                      | 0                   | 0                      | 0         | 0         | 0        | 0            |
| <b>Total Transported</b>    | <b>0</b>            | <b>904</b>             | <b>0</b>  | <b>0</b>  | <b>0</b> | <b>904</b>   |
| <b>PROJECT TOTALS</b>       |                     |                        |           |           |          |              |
| Collected                   | 290                 | 1,356                  | 17        | 46        | 7        | 1,716        |
| Bypassed                    | 0                   | 274                    | 16        | 16        | 0        | 306          |
| Trucked                     | 286                 | 1,076                  | 1         | 28        | 7        | 1,398        |
| Barged                      | 0                   | 0                      | 0         | 0         | 0        | 0            |
| <b>Total Transported</b>    | <b>286</b>          | <b>1,076</b>           | <b>1</b>  | <b>28</b> | <b>7</b> | <b>1,398</b> |

## Transportation Summary Report

### Cumulative Transportation Summary 11/05/98

|                             | Yearling<br>Chinook | Subyearling<br>Chinook | Steelhead        | Coho           | Sockeye       | Total             |
|-----------------------------|---------------------|------------------------|------------------|----------------|---------------|-------------------|
| <b>LOWER GRANITE DAM</b>    |                     |                        |                  |                |               |                   |
| Collected                   | 1,604,822           | 81,806                 | 5,085,635        | 155,546        | 49,648        | 6,977,457         |
| Bypassed                    | 108,386             | 1,003                  | 125,551          | 1,474          | 0             | 236,414           |
| Trucked                     | 42,108              | 70,278                 | 67,844           | 6,421          | 645           | 187,296           |
| Barged                      | 1,449,614           | 8,532                  | 4,888,200        | 147,145        | 48,911        | 6,542,402         |
| <b>Total Transported</b>    | <b>1,491,722</b>    | <b>78,810</b>          | <b>4,956,044</b> | <b>153,566</b> | <b>49,556</b> | <b>6,729,698</b>  |
| <b>LITTLE GOOSE DAM</b>     |                     |                        |                  |                |               |                   |
| Collected                   | 900,118             | 52,892                 | 1,505,213        | 51,295         | 17,729        | 2,527,247         |
| Bypassed                    | 0                   | 0                      | 64               | 0              | 0             | 64                |
| Trucked                     | 13,835              | 49,181                 | 10,006           | 3,626          | 862           | 77,510            |
| Barged                      | 874,575             | 1,663                  | 1,490,650        | 47,129         | 16,696        | 2,430,713         |
| <b>Total Transported</b>    | <b>888,410</b>      | <b>50,844</b>          | <b>1,500,656</b> | <b>50,755</b>  | <b>17,558</b> | <b>2,508,223</b>  |
| <b>LOWER MONUMENTAL DAM</b> |                     |                        |                  |                |               |                   |
| Collected                   | 492,765             | 22,953                 | 949,322          | 29,627         | 14,895        | 1,509,562         |
| Bypassed                    | 4,290               | 1,133                  | 12,705           | 1,031          | 639           | 19,798            |
| Trucked                     | 1,365               | 17,515                 | 4,429            | 495            | 274           | 24,078            |
| Barged                      | 485,912             | 3,913                  | 931,488          | 28,063         | 13,963        | 1,463,339         |
| <b>Total Transported</b>    | <b>487,277</b>      | <b>21,428</b>          | <b>935,917</b>   | <b>28,558</b>  | <b>14,237</b> | <b>1,487,417</b>  |
| <b>MCNARY DAM</b>           |                     |                        |                  |                |               |                   |
| Collected                   | 1,044,047           | 8,166,297              | 327,380          | 125,972        | 512,068       | 10,175,764        |
| Bypassed                    | 1,004,336           | 164,310                | 316,015          | 109,189        | 492,648       | 2,086,498         |
| Trucked                     | 7,071               | 302,999                | 4,907            | 4,978          | 4,291         | 324,246           |
| Barged                      | 27,725              | 7,364,732              | 6,038            | 11,453         | 12,772        | 7,422,720         |
| <b>Total Transported</b>    | <b>34,796</b>       | <b>7,667,731</b>       | <b>10,945</b>    | <b>16,431</b>  | <b>17,063</b> | <b>7,746,966</b>  |
| <b>PROJECT TOTALS</b>       |                     |                        |                  |                |               |                   |
| Collected                   | 4,041,752           | 8,323,948              | 7,867,550        | 362,440        | 594,340       | 21,190,030        |
| Bypassed                    | 1,117,012           | 166,446                | 454,335          | 111,694        | 493,287       | 2,342,774         |
| Trucked                     | 64,379              | 439,973                | 87,186           | 15,520         | 6,072         | 613,130           |
| Barged                      | 2,837,826           | 7,378,840              | 7,316,376        | 233,790        | 92,342        | 17,859,174        |
| <b>Total Transported</b>    | <b>2,902,205</b>    | <b>7,818,813</b>       | <b>7,403,562</b> | <b>249,310</b> | <b>98,414</b> | <b>18,472,304</b> |