

# The Dalles Dam Fishway Status Report

1/2/2016

Inspection Period: 12/27/2015-1/2/2016

## THE DALLES DAM



US Army Corps  
of Engineers  
Portland District

The Dalles Project-Fisheries  
P.O. Box 564  
The Dalles, OR 97058-9998  
Phone: 541-506-3800

*Fishways are inspected once daily plus one SCADA inspection starting December 1*

| The Dalles Dam                  | Inspections<br>Out of Criteria | Criteria<br>Limit | Total Number of Inspections: 11  |  | Temperature: 44.6 °F                                 |  |
|---------------------------------|--------------------------------|-------------------|--|--|--|--|
|                                 |                                |                   | Comments   |  | Secchi: 4.6 feet                                     |  |
| <b>NORTH FISHWAY</b>            |                                |                   |  |  |  |  |
| Exit differential               |                                |                   | Fishadder at orifice flow. Upper diffuser closed due to motor maintenance. PUD turbine in service. |  |  |  |
| Count station differential      |                                |                   |  |  |  |  |
| Weir crest depth                |                                |                   |  |  |  |  |
| Entrance differential           |                                |                   |  |  |  |  |
| Entrance weir N1                |                                |                   |  |  |  |  |
| Entrance weir N2                |                                |                   |  |  |  |  |
| PUD Intake differential         |                                |                   |  |  |  |  |
| <b>EAST FISHWAY</b>             |                                |                   |  |  |  |  |
| Exit differential               | 0                              | ≤ 0.5'            |  |  |  |  |
| Removable weirs 154-157         | 0                              | Per forebay       | Auto adjusts 1' increments.  |  |  |  |
| Weir 158-159 differential       | 5                              | 1.0' ± 0.1'       | Weir 158 not adjusting properly; electricians have fixed the problem.                              |  |  |  |
| Count station differential      | 0                              | ≤ 0.3'            | milfoil Picket leads raked as needed.  |  |  |  |
| Weir crest depth                | 0                              | 1.0' ± 0.1'       |  |  |  |  |
| Junction pool weir JP6          | 0                              | depth (≥ 7')      | Average  | 10.7   |  |  |
| East entrance differential      | 0                              | 1.0' - 2.0'       | Average  | 1.3  | FU2 out of service for overhaul maintenance.         |  |
| Entrance weir E1                | 0                              | No criteria       | Average  |  |  |  |
| Entrance weir E2                | 11                             | depth (≥ 8')      | Average  | FU2 out of service for overhaul maintenance. Weir <8     |  |  |
| Entrance weir E3                | 0                              | depth (≥ 8')      | Average  | 10.1   |  |  |
| Collection channel velocity     | NA                             | 1.5 - 4 fps       | Average  | Resume March 1   |  |  |
| Transportation channel velocity | NA                             | 1.5 - 4 fps       | Average  |  |  |  |
| North channel velocity          | NA                             | 1.5 - 4 fps       | Average  |  |  |  |
| South channel velocity          | NA                             | 1.5 - 4 fps       | Average  |  |  |  |
| West entrance differential      | 0                              | 1.0' - 2.0'       | Average  | 1.4  |  |  |
| Entrance weir W1                | 0                              | depth (≥ 8')      | Average  | 8.5  | FU2 out of service for overhaul maintenance. Weir <8 |  |
| Entrance weir W2                | 11                             | depth (≥ 8')      | Average  | FU2 out of service for overhaul maintenance. Weir <8     |  |  |
| Entrance weir W3                | 0                              | No criteria       | Average  |  |  |  |
| South entrance differential     | 0                              | 1.0' - 2.0'       | Average  | 1.5  |  |  |
| Entrance weir S1                | 11                             | depth (≥ 8')      | Average  | FU2 out of service for overhaul maintenance. Weir closed |  |  |
| Entrance weir S2                | 0                              | depth (≥ 8')      | Average  | 9.2  | FU2 out of service for overhaul maintenance. Weir <8 |  |
| <b>JUVENILE PASSAGE</b>         |                                |                   |  |  |  |  |
| Sluiceway operation             | 0                              | Units 1, 8, 18    | Sluiceways 1-1,18-3 open. Other gates and units 1, 8, 18 all closed after 12/15                    |  |  |  |
| Turbine trashrack drawdown      |                                | <1.5', wkly       |  |  |  |  |
| Spill volume                    | Spill closed on 9/1/15         |                   |  |  |  |  |
| Spill Pattern                   |                                |                   |  |  |  |  |
| Turbine Unit Priority           | NA                             | per FPP           | Out of fish passage season   |  |  |  |
| Turbine 1% Efficiency           | NA                             | per FPP           | Out of fish passage season   |  |  |  |

**OTHER ISSUES:****Birds/Sea lions:**

Bird observation data collected once daily. Refer to Avian Zone map. Seal lion observed 12/18 near east entrance. No brands noticed. Many birds around project. No hazing activity. Hazing to resume Apr15. Hazing from boat to be included 2016.

**Operations:**

North fishway in service with PUD auxiliary water. East fishway in service with one fish unit auxiliary water.

Turbine trashrack drawdown and velocities completed for the season to resume Mar 1.

Investigating operational changes needed for potential large oil spill in Columbia. Permanent boom purchased for install at east exit.

**Current Outages:**

T8 (MU15 & MU16) de-rated to 85MW ops through 9/14/2017

F2 OOS 0600 12/1/2015 to 1700 2/28/2016 for overhaul

**Maintenance:**

East fishway dewatering scheduled for Jan 5. Entrance weir modifications and wheel replacement will continue from last year. Guide repair postponed.

One failed collection channel dewatering pumps on deck for repair and one stuck in stillwell. Remaining in operating condition for dewatering next week.

East exit weir electrical panel FCQ7 parts on hand. Funding not presently available for installation. Will likely mount panel in gallery and not hook up.

New dewatering pump motor for north fishway entrance expected delivery this spring. Install planned for dewater season 2016/2017.

East fishladder expansion joint leakage increasing with lower temperatures. In house repair to be attempted depending on funding.

Upcoming winter maintenance period workload; adjust 158 weir, finish entrance weir wheel replace, east entrance E3 weir modifications (add weight).

*Long Term repair plans*; 154 -157 weir replacement, removal/permanent closure of collection channel diffusers, repair north failed diffusers,

*Fish related /non-fish funded items*; spillway evaluation, spillway crane rehab, spillgate 9 trunnion pin replace, sluiceway chaingate rehab (approx 50% complete), fish unit breaker replace (in planning), and transformer replace (in planning).

All spillway items on Critical Infrastructure list and Unfunded Requirement list. Spill gate 9 repair on hold awaiting funding.

**Studies:**

North fishladder rehab study for rock wall ongoing. Construction 2017/18. FPOM review as needed.

East fishladder emergency backup construction delayed until further notice.

Crane rail replacement on tailrace and intake 2016-17. To be completed within in water work period.

Transformer replacement planning underway. Plans to eliminate fish unit TA transformers. Work to start 2017. Periodic planning meetings continue.

North spill attraction flow proposal approved through FPOM for Fish Passage Plan.

Lamprey minor modification planning site visit in Jan.

**Research/Contractors:**

Normandeau fish counters season done 10/31.

Approved by: Ron Twiner

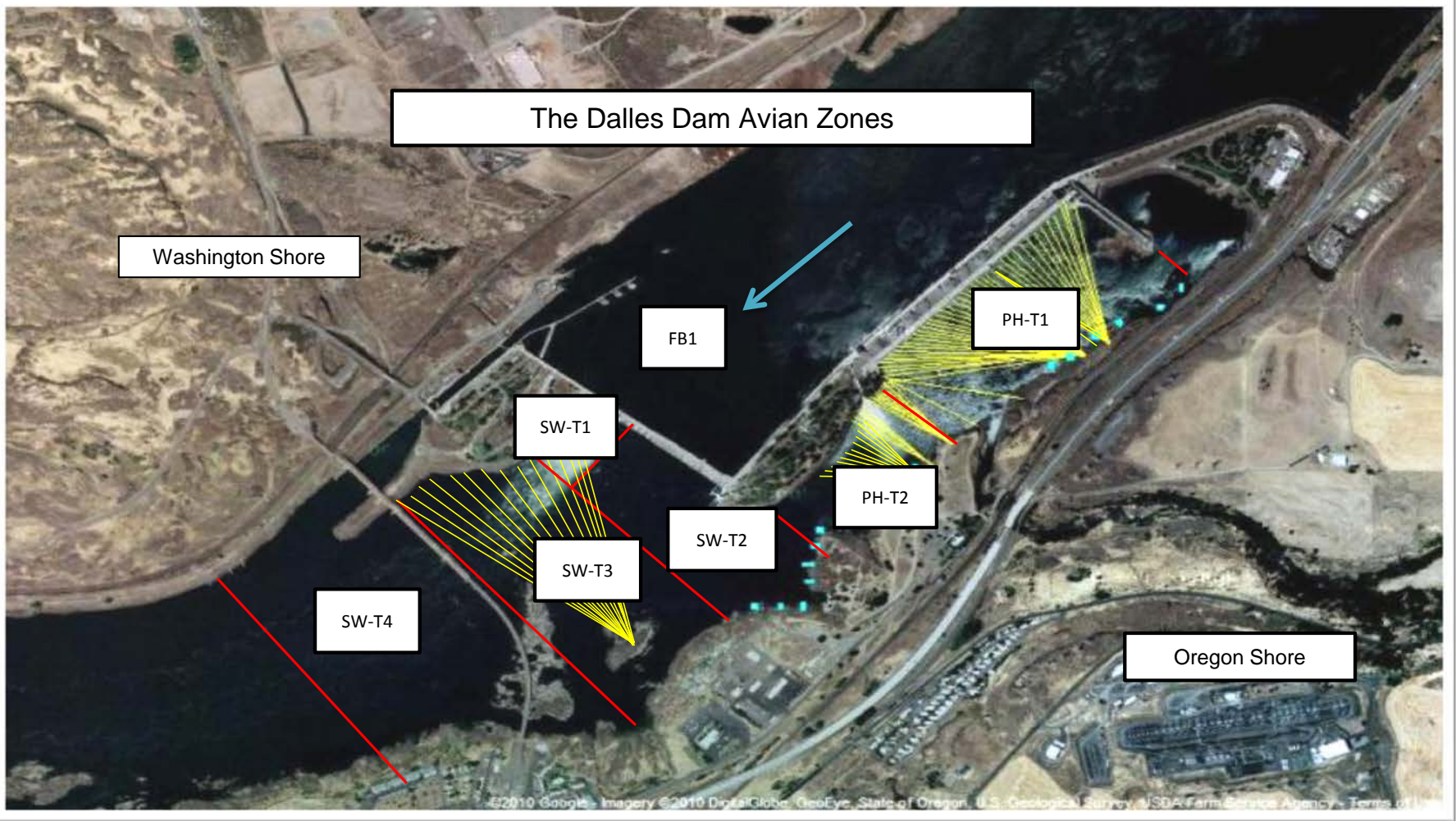
Operation Project Manager The Dalles Dam

## 2015 Piscivorous Bird Counts

*F=foraging, NF=non-foraging*

| Date     | Observer | Time (24 hr) | Zone | Gull |     | Cormorant |     | Caspian tern |    | Grebe |    | Pelican |    | Other |     | Total birds in zone                             | Notes   |
|----------|----------|--------------|------|------|-----|-----------|-----|--------------|----|-------|----|---------|----|-------|-----|---|---|
|          |          |              |      | F    | NF  | F         | NF  | F            | NF | F     | NF | F       | NF | F     | NF  |   |   |
| 12/27/15 | EHK      | 10:57        | FB   | 0    | 0   | 0         | 0   | 0            | 0  | 10    | 0  | 0       | 0  | 0     | 1   | 11  | 1 BAEA<br>22 COME<br>21 BAEA & 1 GBH                    |
|          |          | 10:21        | PH1  | 13   | 11  | 0         | 52  | 0            | 0  | 0     | 0  | 0       | 0  | 15    | 7   | 98  |   |
|          |          | 10:31        | PH2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 22  | 22  |   |
|          |          | 10:58        | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 0   |   |
|          |          | 10:35        | SW2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 0   |   |
|          |          | 10:36        | SW3  | 0    | 22  | 0         | 37  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 59  |   |
| 12/28/15 | jwr      | 11:29        | FB   | 1    | 1   | 2         | 0   | 0            | 0  | 21    | 0  | 0       | 0  | 1     | 1   | 27  | BAEA<br>1 GBHE, 23 COME<br>1 GBHE, 16 BAEA              |
|          |          | 10:34        | PH1  | 4    | 0   | 0         | 43  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 24  | 71  |   |
|          |          | 10:40        | PH2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 17  | 17  |   |
|          |          | 11:31        | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 0   |   |
|          |          | 10:42        | SW2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 0   |   |
|          |          | 10:43        | SW3  | 0    | 3   | 0         | 59  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 62  |   |
| 12/29/15 | EHK      | 11:49        | SW4  | 0    | 346 | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 346   | 5 BAEA<br>28 COME & 2 GBH<br>17 BAEA & 6 GBH<br>1 GBH   |
|          |          | 12:59        | FB   | 0    | 0   | 4         | 0   | 0            | 0  | 23    | 0  | 0       | 0  | 0     | 5   | 32  |   |
|          |          | 12:36        | PH1  | 4    | 12  | 10        | 19  | 0            | 0  | 0     | 0  | 0       | 0  | 25    | 5   | 75  |   |
|          |          | 12:41        | PH2  | 2    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 23  | 25  |   |
|          |          | 13:11        | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 1   | 1   |   |
|          |          | 12:42        | SW2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 0   |   |
| 12/30/15 | GJF      | 12:44        | SW3  | 0    | 35  | 0         | 67  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 102   | BAEA<br>COME<br>BAEA<br>2 BAEA, 2 GBH                   |
|          |          | 13:03        | SW4  | 0    | 278 | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 278   |   |
|          |          | 9:46         | FB   | 0    | 9   | 15        | 0   | 0            | 0  | 20    | 0  | 0       | 0  | 0     | 5   | 49  |   |
|          |          | 10:40        | PH1  | 8    | 10  | 6         | 41  | 0            | 0  | 0     | 0  | 0       | 0  | 27    | 7   | 99  |   |
|          |          | 9:30         | PH2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 3     | 33  | 36  |   |
|          |          | 9:36         | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 4   | 4   |   |
| 12/31/15 | GJF      | 10:25        | SW2  | 0    | 37  | 0         | 93  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 130   | BAEA<br>COME<br>BAEA<br>2 BAEA, 2 GBH                   |
|          |          | 10:26        | SW3  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 0   |   |
|          |          | 10:27        | SW4  | 0    | 292 | 0         | 31  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 323   |   |
|          |          | 14:49        | FB   | 0    | 35  | 9         | 0   | 0            | 0  | 5     | 0  | 0       | 0  | 0     | 2   | 51  |   |
|          |          | 14:40        | PH1  | 50   | 14  | 21        | 69  | 0            | 0  | 0     | 0  | 0       | 0  | 47    | 5   | 206   |   |
|          |          | 14:29        | PH2  | 0    | 2   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 26  | 28  |   |
| 1/1/16   | GJF      | 14:50        | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 5   | 5   | BAEA<br>COME<br>5 GBH, 21 BAEA<br>1 BAEA, 4 GBH<br>BAEA |
|          |          | 14:31        | SW2  | 0    | 1   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 1     | 0   | 2   |   |
|          |          | 14:32        | SW3  | 0    | 65  | 0         | 123 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 188   |   |
|          |          | 14:35        | SW4  | 0    | 327 | 0         | 56  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 383   |   |
|          |          | 14:40        | FB   | 0    | 7   | 3         | 0   | 0            | 0  | 10    | 0  | 0       | 0  | 0     | 10  | 30  |   |
|          |          | 14:30        | PH1  | 21   | 9   | 15        | 37  | 0            | 0  | 0     | 0  | 0       | 0  | 59    | 5   | 146   |   |
| 1/2/16   | GJF      | 14:20        | PH2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 57    | 57  | BAEA<br>COME<br>5 GBH, 52 BAEA<br>2 BAEA, 3 GBH |   |
|          |          | 14:50        | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 5     | 5   |   |   |
|          |          | 14:25        | SW2  | 0    | 0   | 0         | 5   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 5   |   |   |
|          |          | 14:26        | SW3  | 0    | 0   | 0         | 56  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 56  |   |   |
|          |          | 14:27        | SW4  | 0    | 124 | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 124 |   |   |
|          |          | 13:50        | FB   | 0    | 5   | 21        | 0   | 0            | 0  | 11    | 0  | 0       | 0  | 0     | 11  |   | 48  |
| 1/2/16   | GJF      | 13:35        | PH1  | 18   | 6   | 9         | 61  | 0            | 0  | 0     | 0  | 0       | 0  | 42    | 15  | 151   | BAEA<br>COME<br>6 GBH, 61 BAEA<br>GBH                   |
|          |          | 13:40        | PH2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 67    | 67  |   |   |
|          |          | 13:55        | SW1  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 2     | 2   |   |   |
|          |          | 13:37        | SW2  | 0    | 0   | 0         | 0   | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   |   |   |
|          |          | 13:38        | SW3  | 0    | 6   | 0         | 84  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 90  |   |
|          |          | 13:39        | SW4  | 0    | 194 | 0         | 34  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0   | 228   |   |

Key: BAEA= Bald Eagle, GBH= Great Blue Heron, COME = Common Merganser

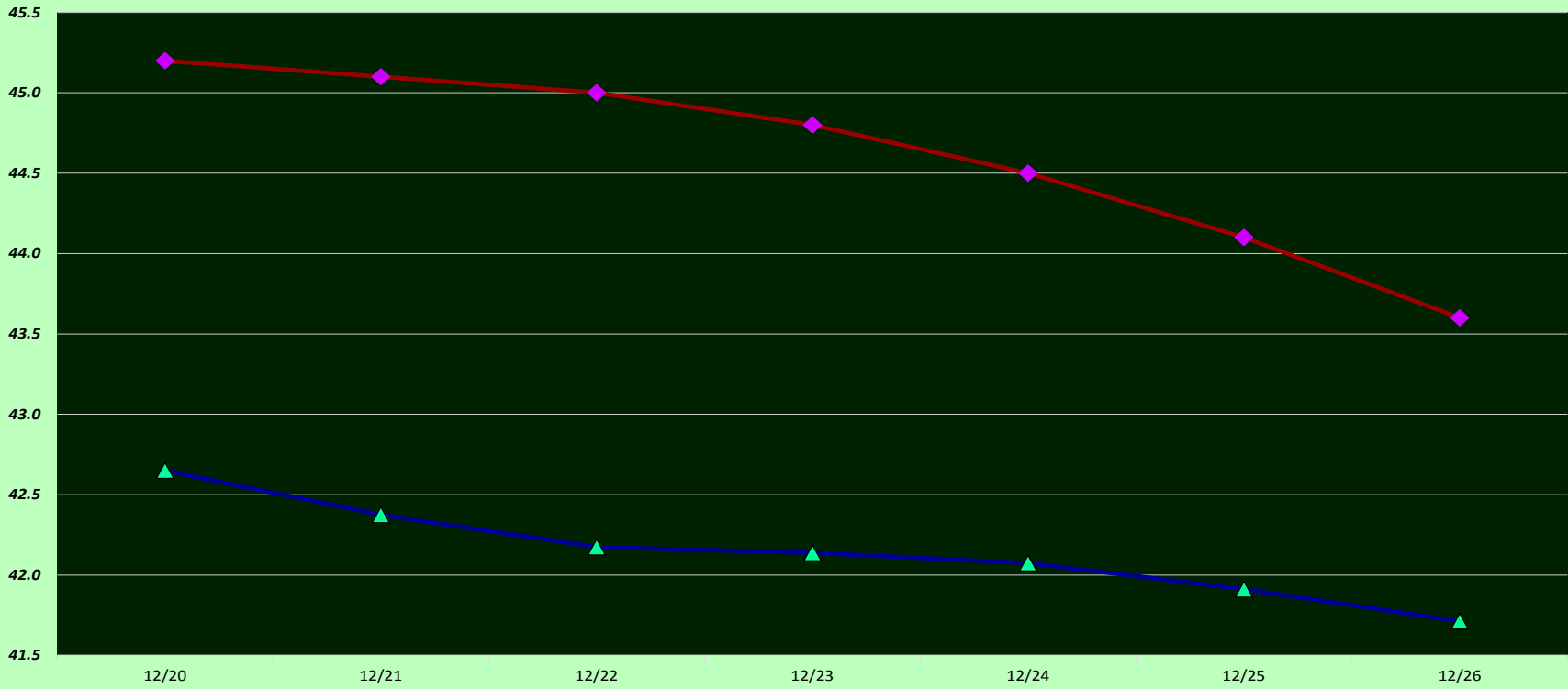


Avian lines in yellow, zones in red, river flow in blue.

### The Dalles Dam-USGS Tailwater Daily Averages

°F

◆ Current USGS daily tailwater average    ▲ USGS daily tailwater average (2007-2014)



| Secchi: |       | USGS: Temperatures |
|---------|-------|--------------------|
| 5.0     | Sun   | 45.2               |
| 5.0     | Mon   | 45.1               |
| 5.0     | Tue   | 45.0               |
| 5.0     | Wed   | 44.8               |
| 4.0     | Thurs | 44.5               |
| 4.0     | Fri   | 44.1               |
| 4.0     | Sat   | 43.6               |
| 4.6     | AVG   | 44.6               |

<http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201512.lcol.html>

The Dalles Dam Daily Readings and Averages for  
Temperatures, Secchi, Entrances, and Spill

= Out of criteria

| Date:       | North Ladder   |          | East Ladder   |            |          |             |        |               |            |            |                |              |            | SPILL<br>ON<br>SEAL |            |     |
|-------------|--|----------|---------------|------------|----------|-------------|--------|---------------|------------|------------|----------------|--------------|------------|---------------------|------------|-----|
|             | North Entrance   |          | East Entrance |            |          |             |        | West Entrance |            |            | South Entrance |              |            |                     |            |     |
|             | Differential   | N1 Depth | Differential  | E1 Depth   | E2 Depth | E3 Depth    | JP 6   | Differential  | W1 Depth   | W2 Depth   | W3 Depth       | Differential | S1 Depth   | S2 Depth            |            |     |
| 12/27       | PUD turbine in service. Entrance criteria not monitored. |          | 1.1           | Closed     | Closed   | 11.3        |        | 1.5           | 9.9        | Closed     | closed         | 1.6          | Closed     | 10.0                |            |     |
|             |  |          | 1.2           |            |          | 11.3        | 9.8    | 1.5           | 10.0       |            |                | 1.6          |            | 10.1                |            |     |
| 12/28       |  |          | 1.2           |            |          | 11.9        | 10.3   | 1.6           | 10.0       |            |                | 1.6          |            | 10.1                |            |     |
|             |  |          | 1.1           |            |          | 12.4        | 10.8   | 1.6           | 9.5        |            |                | 1.6          |            | 9.7                 |            |     |
| 12/29       |  |          | 1.3           |            |          | 8.5         |        | 1.3           | 8.5        |            |                | 1.4          |            | 9.1                 |            |     |
|             |  |          | 1.3           |            |          | 8.5         | 11.5   | 1.5           | 8.5        |            |                | 1.5          |            | 9.1                 |            |     |
| 12/30       |  |          | 1.3           |            |          | 8.6         |        | 1.4           | 5.1        |            |                | 1.5          |            | 8.9                 |            |     |
|             |  |          | 1.3           |            |          | 8.4         | 11.6   | 1.4           | 8.6        |            |                | 1.5          |            | 9.1                 |            |     |
| 12/31       |  |          | 1.3           |            |          | 9.1         | Closed |               |            |            |                | 1.3          |            | 8.7                 | 1.3        | 8.7 |
|             |  |          | 1.1           |            |          | 9.2         |        |               | 10.6       |            |                | 1.2          |            | 8.3                 | 1.4        | 8.6 |
| 1/1         |  |          | 1.5           |            |          | 7.3         |        |               |            |            |                | 1.4          |            | 8.2                 | 1.5        | 8.6 |
|             |  |          | 1.3           |            |          | 7.4         |        |               | 10.6       |            |                | 1.4          |            | 8.3                 | 1.5        | 8.8 |
| 1/2         |  |          | 1.3           |            |          | 7.3         |        |               |            |            |                | 1.4          |            | 7.5                 | 1.5        | 8.7 |
|             |  |          | 1.6           |            |          | 8.0         |        |               | 10.1       |            |                | 1.6          |            | 7.2                 | 1.5        | 8.6 |
| <b>AVG:</b> |  |          | <b>1.3</b>    | <b>8.1</b> | <b>#</b> | <b>10.1</b> |        | <b>10.7</b>   | <b>1.4</b> | <b>8.5</b> | <b>#DIV/0!</b> | closed       | <b>1.5</b> | <b>#DIV/0!</b>      | <b>9.2</b> |     |

Fishways are inspected twice daily plus one SCADA inspection.