

The Dalles Dam Fishway Status Report

5/7/2016

Inspection Period: 05/01 - 05/07/2016

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 twice daily plus one SCADA inspection

| The Dalles Dam | Inspections Out of Criteria | Criteria Limit | Total Number of Inspections: 21 | | Temperature: 55.6 °F | |
|---------------------------------|--------------------------------|-------------------|---|--|----------------------|--|
| | | | Comments | | Secchi: 4.0 feet | |
| NORTH FISHWAY | | | | | | |
| Exit differential | 0 | ≤ 0.5' | | | | |
| Count station differential | 0 | ≤ 0.3' | | | | |
| Weir crest depth | 0 | 1.0' ± 0.1' | | | | |
| Entrance differential | 0 | 1.0' - 2.0' | 1.4 | | | |
| Entrance weir N1 | 0 | depth (≥ 8') | 9.9 | | | |
| Entrance weir N2 | 0 | Closed | | | | |
| PUD Intake differential | 0 | ≤ 0.5' | | | | |
| EAST FISHWAY | | | | | | |
| Exit differential | 0 | ≤ 0.5' | | | | |
| Removable weirs 154-157 | 0 | Per forebay | Auto adjusts 1' increments. | | | |
| Weir 158-159 differential | 3 | 1.0' ± 0.1' | Adjusted and in criteria now | | | |
| Count station differential | 0 | ≤ 0.3' | Picket leads raked as needed. | | | |
| Weir crest depth | 0 | 1.0' ± 0.1' | | | | |
| Junction pool weir JP6 | 0 | depth (≥ 7') | 12.4 | | | |
| East entrance differential | 0 | 1.0' - 2.0' | 1.6 | | | |
| Entrance weir E1 | 0 | No criteria | 7.1 | | | |
| Entrance weir E2 | 0 | depth (≥ 8') | 13.5 | | | |
| Entrance weir E3 | 0 | depth (≥ 8') | 13.4 | | | |
| Collection channel velocity | 0 | 1.5 - 4 fps | 3.2 | | | |
| Transportation channel velocity | 0 | 1.5 - 4 fps | 2.1 | | | |
| North channel velocity | 0 | 1.5 - 4 fps | 2.0 | | | |
| South channel velocity | 0 | 1.5 - 4 fps | 2.5 | | | |
| West entrance differential | 0 | 1.0' - 2.0' | 1.5 | | | |
| Entrance weir W1 | 0 | depth (≥ 8') | 11.9 | | | |
| Entrance weir W2 | 0 | depth (≥ 8') | 11.9 | | | |
| Entrance weir W3 | 0 | No criteria | Closed | | | |
| South entrance differential | 0 | 1.0' - 2.0' | 1.4 | | | |
| Entrance weir S1 | 0 | depth (≥ 8') | 8.3 | | | |
| Entrance weir S2 | 0 | depth (≥ 8') | 8.3 | | | |
| JUVENILE PASSAGE | | | | | | |
| Sluiceway operation | 0 | Units 1, 8, 18 | | | | |
| Turbine trashrack drawdown | 0 | <1.5', wkly | range: 0-1.1' | | | |
| Spill volume | 0 | Spill at 40% | | | | |
| Spill Pattern | 0 | | | | | |
| Turbine Unit Priority | 9 | per FPP | MU 3, 15 & 16 forced out. Affects turbine block priority order. | | | |
| Turbine 1% Efficiency | 0 | per FPP | Out of fish passage season | | | |

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

Bird observation data collected once daily. Refer to Avian Zone map. USDA hazers started May 7 after 2 week delay due to late approvals.

Bird predation extremely high downstream of spillway. No bird activity at powerhouse.

Sealions observations less frequent than previous week. USDA will haze sea lions when returns.

Operations:

Gatewell drawdown complete. All differentials within criteria.

Calibration done 5/1, east channel minor discrepancy. Maintenance notified.

Spill 40% continues.

Current Outages:

T8 (MU15 & MU16) forced out due to transformer failure. Return unknown.

MU3 forced out through 6/9/2016 due to loss of governor sump oil level

Maintenance:

South entrance dewater pump rehab postponed to next season due to budget constraints.

Awaiting east exit weir electrical panel FCQ7 panel. May 20 delivery date. To be installed on gallery and connected as funding allows.

Tailrace crane repair near west entrance delayed to June. No excessive noise observed near west entrance from this work.

Long Term repair maintained plans; 154 -157 weir mods, collection channel diffusers decommission, repair failed diffusers - all on hold due to funding

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

All spillway items on Critical Infrastructure list and Unfunded Requirement list.

Studies:

North fishladder rehab construction 2017/18. FPOM review as needed.

East fishladder emergency backup construction planning for work this winter if awarded.

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. Install start 2017. Planning meetings continue.

No new developments for north lighting video counting improvements.

In process of updating N Wasco Co PUD Memo of Agreement. Near complete.

Fish unit rehab project plan started. Will increase reliability of fish units and potential redundancy.

High numbers of sport fishermen will within 200' of east fishway exit. Catch rates high. Law enforcement notified. Measures to be taken to control proximity to exit includes additional bouys, signage and paint line on rocks.

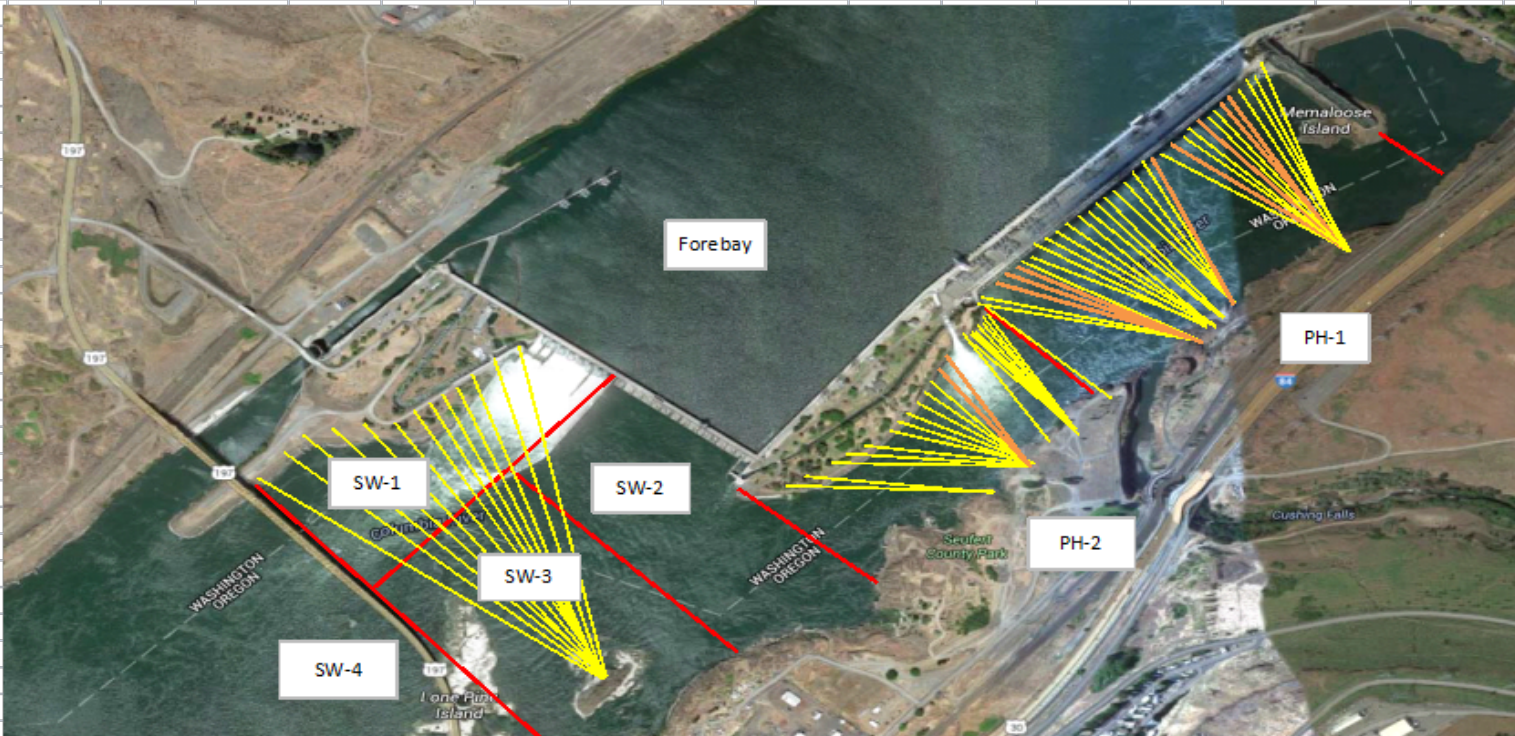
Research/Contractors:

Normandeau fish counters season resumed Apr1. No issues.

USDA avian hazer start delayed. Awaiting contract approvals.

Approved by: Ron Twiner

Operation Project Manager The Dalles Dam



Yellow lines= present avian lines

red lines= Barriers between observation zones

Orange lines= Missing or down avian lines

The Dalles East

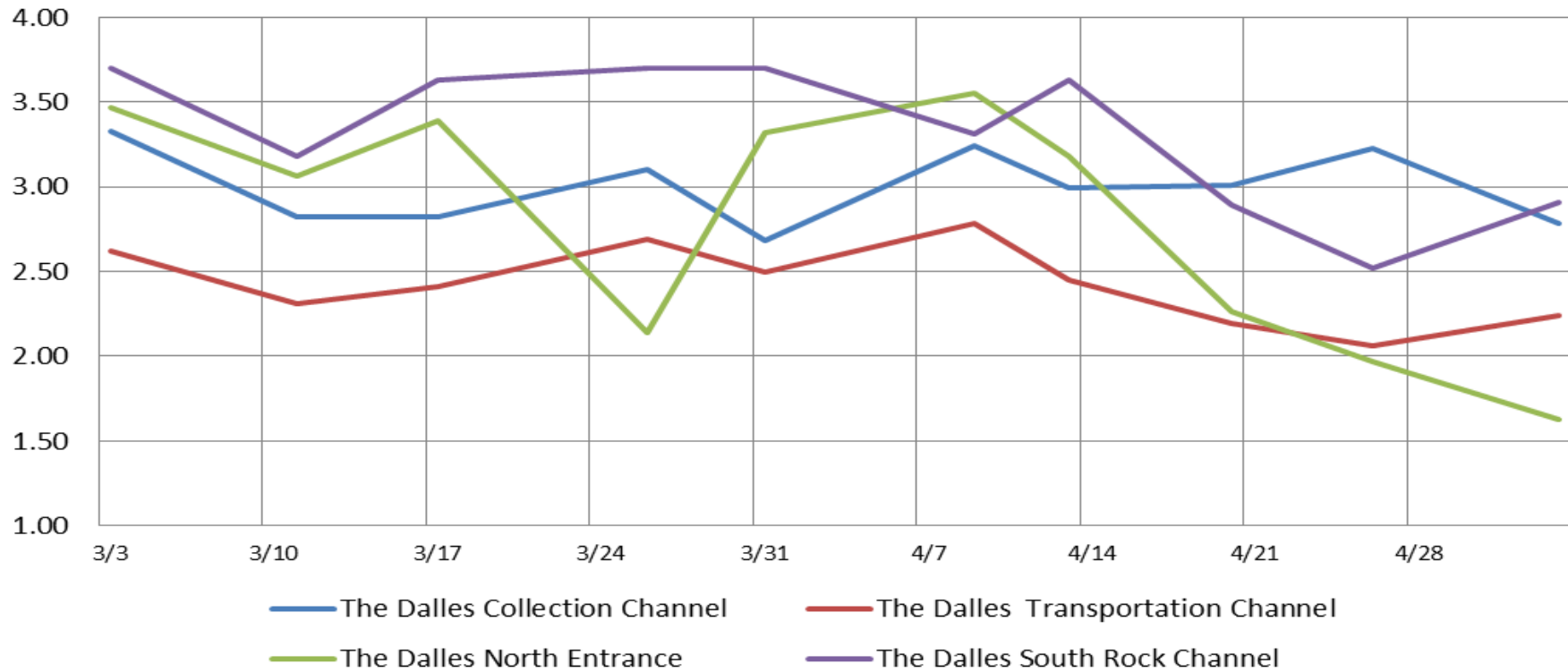
| Date | All Chinook | Adult Chinook | Jack Chinook | All Steelhead | Clipped Steelhead | Unclipped Steelhead | All Coho | Adult Coho | Jack Coho | Sockeye | Chum | Pink | Lamprey |
|--------------|--------------|---------------|--------------|---------------|-------------------|---------------------|----------|------------|-----------|----------|----------|----------|----------|
| 5/1 | 5006 | 4914 | 92 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/2 | 5226 | 5035 | 191 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/3 | 4685 | 4537 | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/4 | 7568 | 7026 | 542 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/5 | 6118 | 5790 | 328 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/6 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/7 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 28603 | 27302 | 1301 | 11 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

The Dalles North

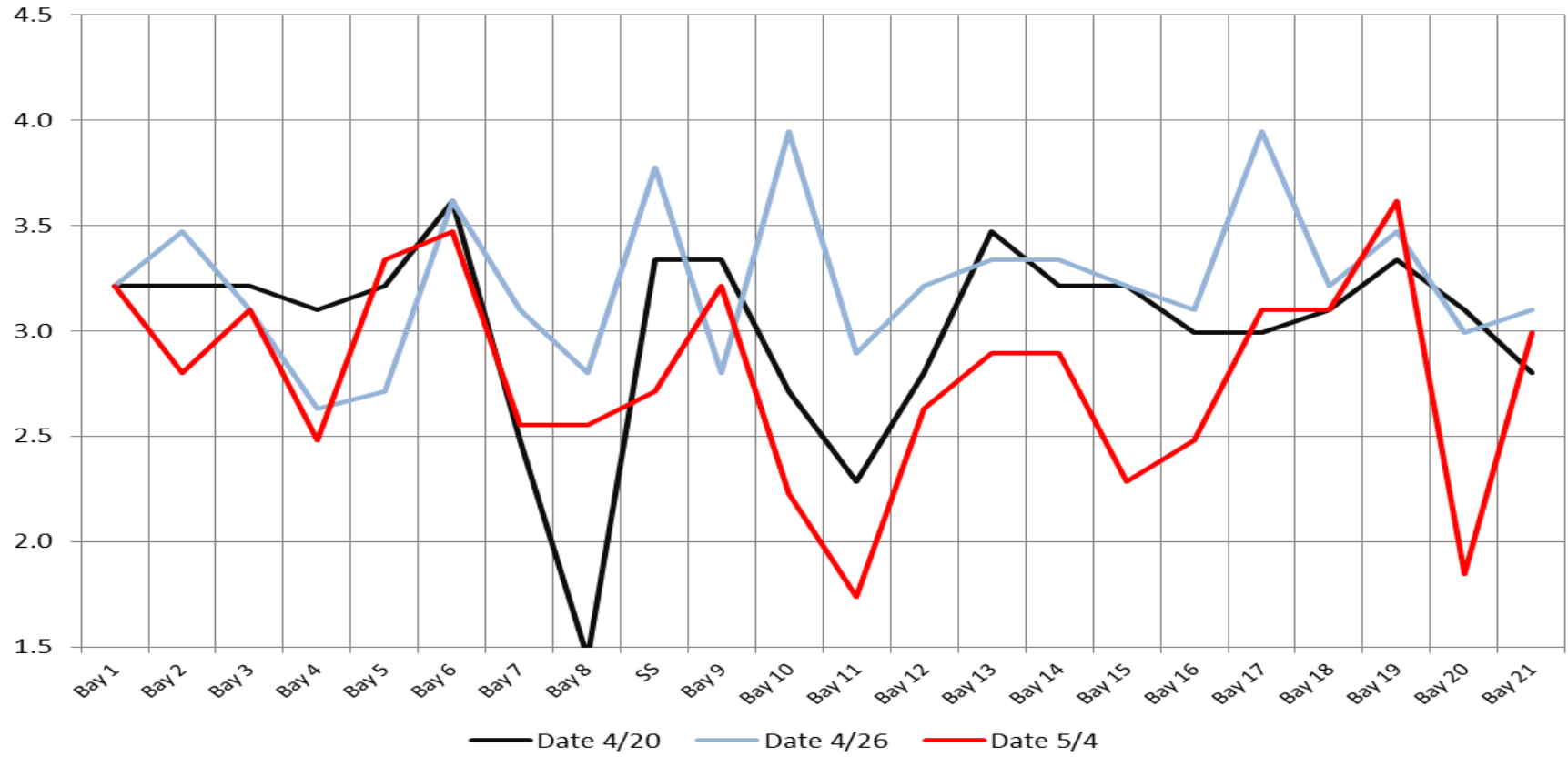
| Date | All Chinook | Adult Chinook | Jack Chinook | All Steelhead | Clipped Steelhead | Unclipped Steelhead | All Coho | Adult Coho | Jack Coho | Sockeye | Chum | Pink | Lamprey |
|----------------|-------------|---------------|--------------|---------------|-------------------|---------------------|------------|------------|------------|------------|------------|------------|------------|
| 5/1 | 792 | 788 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/2 | 1089 | 1088 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/3 | 2851 | 2809 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/4 | 2215 | 2184 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/5 | 1390 | 1372 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/6 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5/7 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 8337 | 8241 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % North | 22.6 | 23.2 | 6.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

<http://www.nwp.usace.army.mil/Missions/Environment/Fish/Counts.aspx>

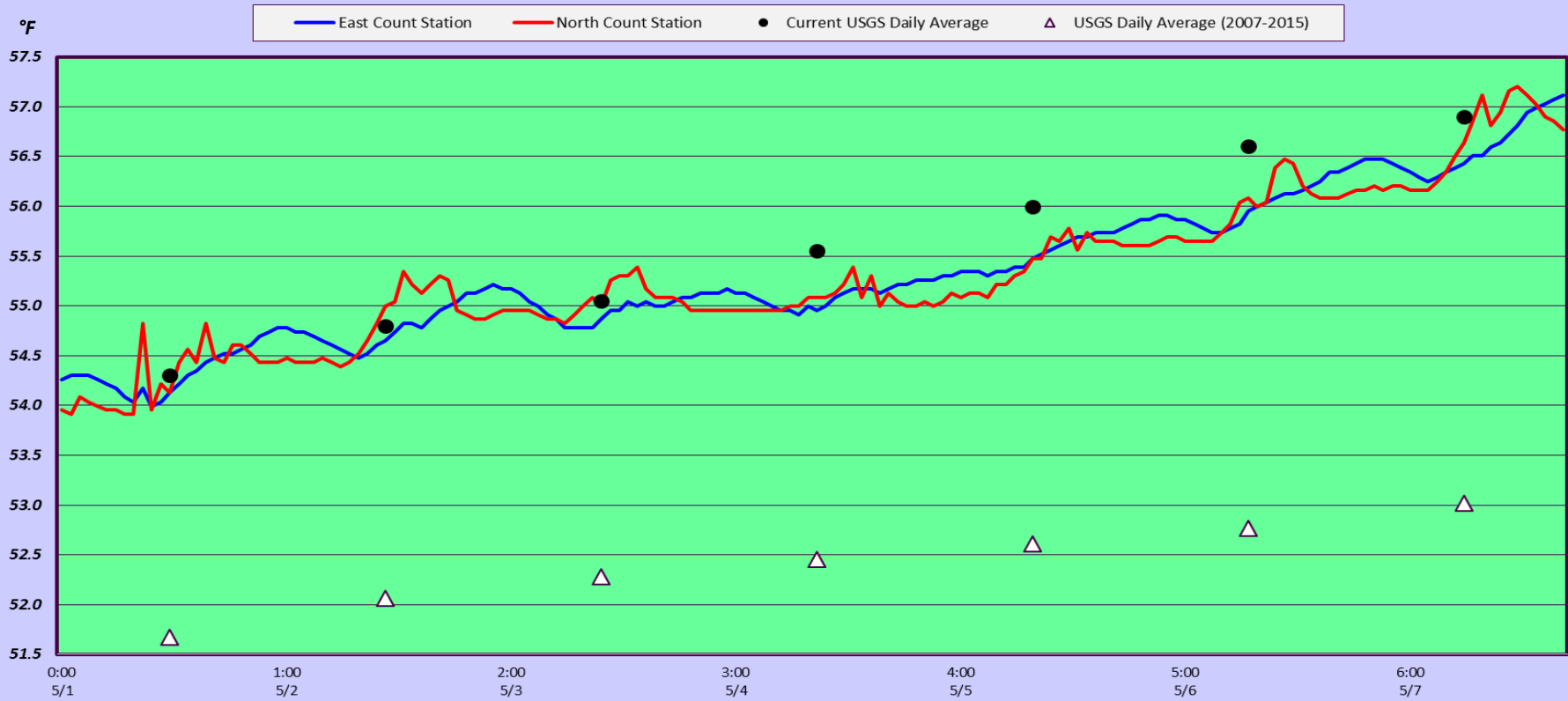
The Dalles Dam Averages Velocities (In criteria 1.5 - 4.0 fps)



The Dalles Dam Collection Channel Velocites (In criteria 1.5 - 4.0 fps)



The Dalles Dam Adult Fish Ladder(s) River/Water Temperatures



USGS: <http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201605.lcol.html>

| Secchi: | | Temperatures |
|---------|-------|--------------|
| 3.5 | Sun | 54.30 |
| 3.5 | Mon | 54.80 |
| 4.0 | Tue | 55.05 |
| 4.5 | Wed | 55.55 |
| 4.5 | Thurs | 56.00 |
| 4.0 | Fri | 56.60 |
| 4.0 | Sat | 56.90 |
| 4.0 | AVG | 55.60 |

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

= Out of criteria

| North Ladder | | | East Ladder | | | | | | | | | | | | |
|----------------|--------------|------------|---------------|------------|-------------|-------------|-------------|---------------|-------------|-------------|------------|----------------|------------|----------|---------|
| North Entrance | | | East Entrance | | | | | West Entrance | | | | South Entrance | | | % Spill |
| Date: | Differential | N1 Depth | Differential | E1 Depth | E2 Depth | E3 Depth | JP 6 | Differential | W1 Depth | W2 Depth | W3 Depth | Differential | S1 Depth | S2 Depth | |
| 5/1 | | | 1.4 | 9.0 | 13.4 | 13.4 | 12.4 | 1.4 | 12.6 | 12.6 | | 1.4 | 8.3 | 8.3 | 40.2 |
| | 1.4 | 9.9 | 1.5 | 8.0 | 13.6 | 13.5 | 12.0 | 1.6 | 12.5 | 12.5 | | 1.3 | 8.2 | 8.2 | |
| | 1.4 | 9.9 | 1.6 | 8.0 | 13.7 | 13.7 | 12.1 | 1.3 | 12.6 | 12.6 | | 1.3 | 8.9 | 8.9 | |
| 5/2 | | | 1.2 | 7.4 | 13.4 | 12.3 | 11.3 | 1.3 | 11.9 | 11.9 | | 1.4 | 8.2 | 8.3 | 39.9 |
| | 1.4 | 9.8 | 1.5 | 7.1 | 13.5 | 13.6 | 12.0 | 1.6 | 11.0 | 11.0 | | 1.4 | 8.4 | 8.3 | |
| | 1.4 | 10.0 | 1.5 | 7.0 | 13.6 | 13.5 | 12.7 | 1.8 | 11.1 | 11.1 | | 1.5 | 8.3 | 8.2 | |
| 5/3 | | | 1.3 | 7.0 | 13.4 | 13.6 | 11.5 | 1.3 | 12.0 | 12.0 | | 1.5 | 8.3 | 8.3 | 40.2 |
| | 1.4 | 9.9 | 1.5 | 4.1 | 13.6 | 13.6 | 11.2 | 1.5 | 11.4 | 11.5 | | 1.5 | 8.2 | 8.2 | |
| | 1.4 | 9.9 | 1.7 | 4.1 | 13.6 | 13.6 | 12.8 | 1.6 | 9.5 | 9.5 | | 1.5 | 8.3 | 8.3 | |
| 5/4 | | | 1.8 | 5.0 | 13.5 | 13.6 | 12.5 | 1.6 | 12.1 | 12.1 | | 1.4 | 8.4 | 8.4 | 40.5 |
| | 1.4 | 9.8 | 1.6 | 7.1 | 13.5 | 13.4 | 12.7 | 1.6 | 11.9 | 11.9 | | 1.4 | 8.4 | 8.4 | |
| | 1.3 | 10.0 | 1.6 | 6.9 | 13.5 | 13.5 | 12.5 | 1.6 | 11.9 | 11.9 | | 1.5 | 8.3 | 8.3 | |
| 5/5 | | | 1.6 | 7.1 | 13.6 | 13.6 | 11.9 | 1.4 | 12.2 | 12.2 | | 1.3 | 8.4 | 8.4 | 40.4 |
| | 1.4 | 10.4 | 1.5 | 6.9 | 13.5 | 13.5 | 12.4 | 1.5 | 12.2 | 12.2 | | 1.4 | 8.4 | 8.4 | |
| | 1.5 | 9.9 | 1.5 | 7.0 | 13.6 | 13.6 | 12.9 | 1.6 | 12.1 | 12.2 | | 1.4 | 8.4 | 8.3 | |
| 5/6 | | | 1.8 | 6.9 | 13.5 | 13.5 | 13.2 | 1.7 | 12.1 | 12.1 | 1.5 | 8.4 | 8.3 | 40.0 | |
| | 1.5 | 9.8 | 1.7 | 7.1 | 13.4 | 13.4 | 13.1 | 1.7 | 12.0 | 12.0 | 1.5 | 8.3 | 8.2 | | |
| | 1.5 | 9.9 | 1.7 | 13.6 | 13.6 | 13.3 | 13.3 | 1.7 | 12.0 | 12.0 | 1.5 | 8.2 | 8.3 | | |
| 5/7 | | | 1.6 | 6.8 | 13.3 | 13.3 | 12.8 | 1.6 | 12.0 | 12.0 | 1.5 | 8.3 | 8.3 | 40.4 | |
| | 1.5 | 9.8 | 1.5 | 6.9 | 13.4 | 13.4 | 13.7 | 1.6 | 12.0 | 12.0 | 1.5 | 8.2 | 8.3 | | |
| | 1.4 | 9.9 | 1.5 | 7.0 | 13.4 | 13.4 | 12.3 | 1.5 | 12.0 | 11.9 | 1.5 | 8.3 | 8.3 | | |
| AVG: | 1.4 | 9.9 | 1.6 | 7.1 | 13.5 | 13.4 | 12.4 | 1.5 | 11.9 | 11.9 | 1.4 | 8.3 | 8.3 | 40.2 | |

Fishways are inspected twice daily plus one SCADA inspection.