

The Dalles Dam Fishway Status Report

4/29/2017

Inspection Period: 04/23/2017-04/29/2017

THE DALLES DAM



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: 50.2 °F | |
|---------------------------------|--------------------------------|-------------------|--|---|----------------------|--|
| | | | Comments | | Secchi: 3.1 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') | 10.7 | | | |
| 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 | Work cleaning circuit boxes performed. | | |
| Weir 158-159 differential | 0 | 1.0' ± 0.1' | 158 calibrated and adjusted. | | | |
| 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') | 14.3 | | | |
| East entrance differential | 11 | 1.0' - 2.0' | 0.9 | Operating on 1 fish unit - MFR provided to FPOM | | |
| Entrance weir E1 | 0 | No criteria | 2.1 | | | |
| Entrance weir E2 | 8 | depth (≥ 8') | 8.0 | | | |
| Entrance weir E3 | 4 | depth (≥ 8') | 8.8 | | | |
| Collection channel velocity | 0 | 1.5 - 4 fps | 1.70 | | | |
| Transportation channel velocity | 0 | 1.5 - 4 fps | 1.67 | | | |
| North channel velocity | 0 | 1.5 - 4 fps | 2.14 | | | |
| South channel velocity | 0 | 1.5 - 4 fps | 1.24 | | | |
| West entrance differential | 2 | 1.0' - 2.0' | 1.2 | W1 weir out of service. Bulkhead installed. W3 in service in to replace W1. | | |
| Entrance weir W1 | 0 | depth (≥ 8') | 0.0 | | | |
| Entrance weir W2 | 0 | depth (≥ 8') | 9.4 | | | |
| Entrance weir W3 | 0 | depth (>8') | 9.3 | | | |
| South entrance differential | 0 | 1.0' - 2.0' | 1.6 | | | |
| Entrance weir S1 | 18 | depth (≥ 8') | 9.2 | | | |
| Entrance weir S2 | 0 | depth (≥ 8') | 8.9 | | | |
| JUVENILE PASSAGE | | | | | | |
| Sluiceway operation | 0 | Units 1, 8, 18 | | | | |
| Turbine trashrack drawdown | 0 | <1.5', wkly | range: 0.1-0.8' | | | |
| Spill volume/pattern | 14 | | Exceeding 40% due to high flows | | | |
| Turbine Unit Priority | 14 | per FPP | MU 2, 3, 6, 9, 12, 15, 16, 21 out of service | | | |
| Turbine 1% Efficiency | NA | per FPP | Out of fish passage season | | | |

OTHER ISSUES:

Birds/Sea lions:

Sea lions (C014 and 1-31) observed nearly everyday near east and west entrance. USDA notified for hazing.

Gulls increasing downstream of spillway. USDA hazing by boat. Bird observation data collected once daily. Refer to Avian Zone map and bird count.

Operations:

North in full operation. East fishway in 1 fish unit operation per Fish Passage Plan.

Unit 6 sluiceway chaingates are now closed and unit 1 chaingates are now all open in coordination with railway removal.

Spillway open with involuntary spill.

Current Outages;

F2 forced out for exciter problems. Return unknown.

MU2 out for hydraulic diagnosis. Return 6/1/17

MU12 out for hydraulic diagnosis. Return 5/25/17.

T8 (MU15 & MU16) out for transformer failure. Transformer replacement spring 2018.

MU21 out for exciter failure. Return 5/11/17

MU3 out for governor oil level. Return 5/14/17.

MU9 out for oil leak. Return 5/4/17.

MU6 out for annual maintenance. Return 4/27/17.

Maintenance;

Entrance W1 bulkhead installed. Weir W1 wheels replaced with new plastic wheels to be installed next week. W3 operating in its place.

East exit weir electrical panel FCQ7 installation/design resuming design completion with available funds.

PUD crane rake repainting project to start this month.

Rebuilding spare entrance weir gearbox.

Other repair maintenance plans; 154 -157 rehab/weir wheel replace, diffuser valve overhaul (rehab or decommission).

Fish related /non-fish funded items; Spillway crane and spillgate 9, both awaiting funding.

All spillway items on Critical Infrastructure list.

Research/Construction/Contractors:

AWS contraction - 7' valve room complete. Doing final backfilling. Forebay work complete for season 1.

Lamprey minor mods - Rounded entrance weir cap parts for all entrances being ordered. Tribal lamprey trap hoist design 90%. Both install 2018.

Railroad track removal - West powerhouse tailrace deck ~100' track removed. Remaining tailrace deck next winter. Intake deck rail at units 1-8 complete.

All sluiceways returned to original configuration (1, 8 and 18).

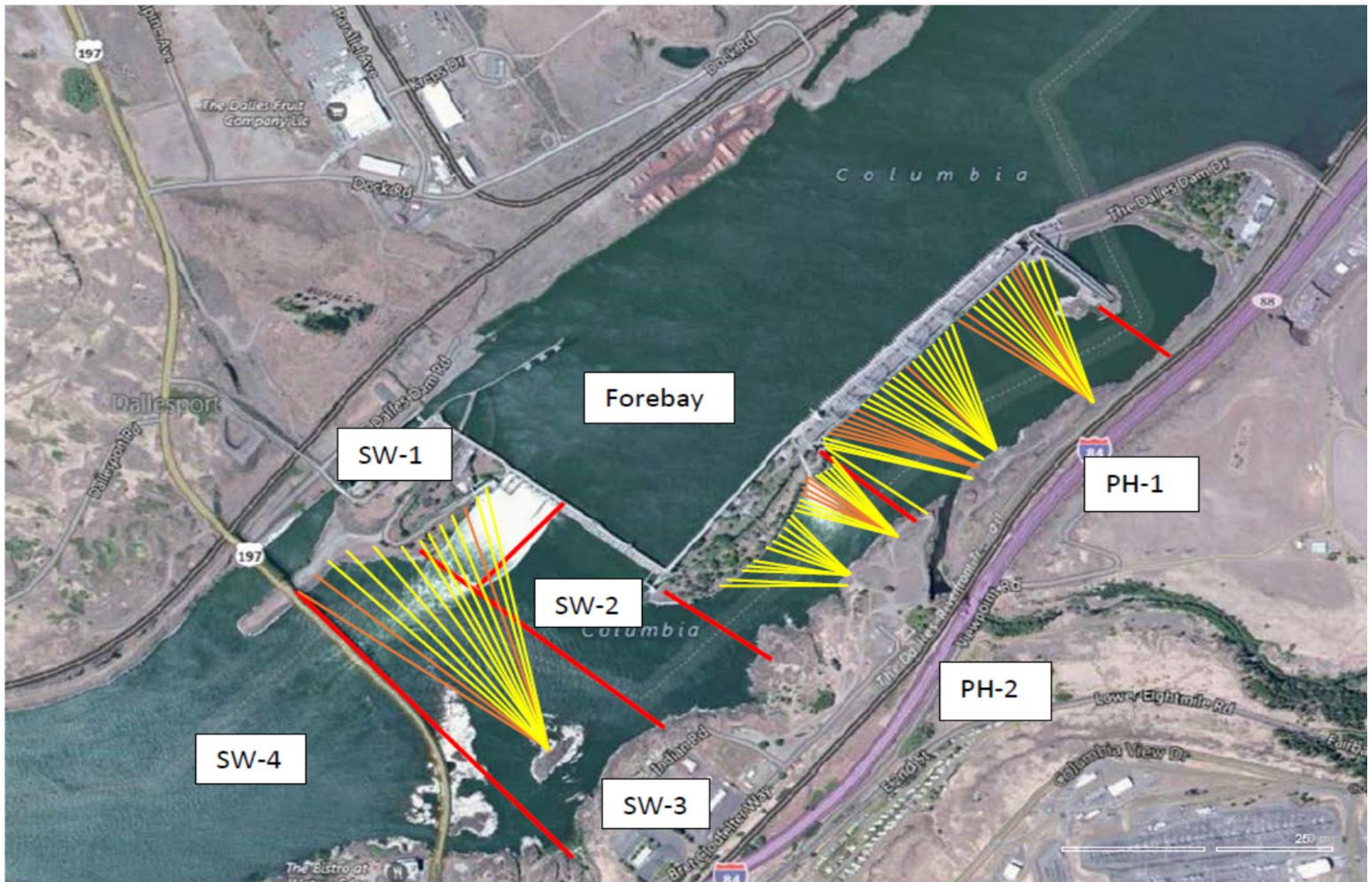
Fish unit breaker replace - Field measurements night Apr26-27 night. FPOM approved. Manufacture over summer. Install fall 2017. Switchover Jan 2018.

Fish unit rehab - Phase 1A report Jan 2018. Award 2020. Completion 2022. Possible increase flow capacity for redundancy. Team second site visit 4/25.

Transformer replacement - Install start May 2018. Coordinated through FPOM.

Approved by: Ron Twiner

Operation Project Manager The Dalles Dam



Red lines = avian zones

Yellow lines = current wires

Orange lines = down or missing wires

2017 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 | | | | |
| 4/23 | GJF | PM | FB | 0 | 1 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | | |
| | | | PH1 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| | | | PH2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| | | | SW4 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | |
| 4/24 | | AM | FB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | PH1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | PH2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | SW2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | SW3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | SW4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4/25 | GJF | PM | FB | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | | |
| | | | PH1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | PH2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | SW3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| | | | SW4 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| 4/26 | GJF | AM | FB | 0 | 2 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | | |
| | | | PH1 | 0 | 2 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | | |
| | | | PH2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | SW3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| | | | SW4 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | |
| 4/27 | GJF | PM | FB | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | | |
| | | | PH1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | |
| | | | PH2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | | SW3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| | | | SW4 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | |
| 4/28 | JWR | AM | FB | 0 | 0 | 1 | 38 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 42 | | |
| | | | PH1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| | | | PH2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| | | | SW3 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | |
| | | | SW4 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | |
| 4/29 | JWR | PM | FB | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 27 | | |
| | | | PH1 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| | | | PH2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | SW3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| | | | SW4 | 224 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 224 | |

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

The Dalles East

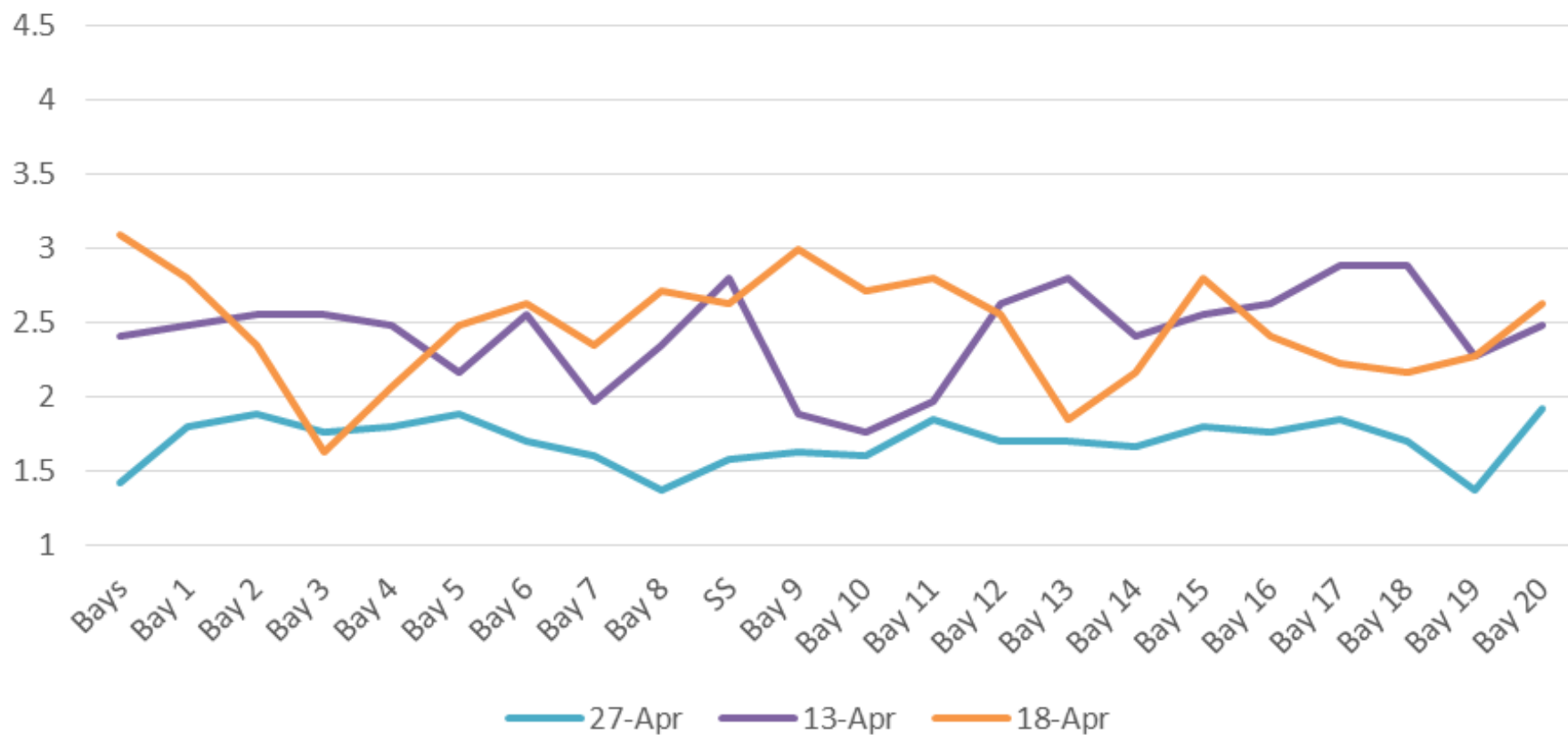
| Date | All Chinook | Adult Chinook | Jack Chinook | All Steelhead | Clipped Steelhead | Unclipped Steelhead | All Coho | Adult Coho | Jack Coho | Sockeye | Chum | Pink |
|--------------|-------------|---------------|--------------|---------------|-------------------|---------------------|----------|------------|-----------|----------|----------|----------|
| 4/23 | 36 | 36 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/24 | 32 | 32 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/25 | 29 | 29 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/26 | 60 | 60 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/27 | 42 | 40 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/28 | 79 | 79 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/29 | 72 | 67 | 5 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 350 | 343 | 7 | 15 | 5 | 10 | 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 |
|----------------|-------------|---------------|--------------|---------------|-------------------|---------------------|----------|------------|-----------|----------|----------|----------|
| 4/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % North | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

http://www.fpc.org/environment/fcounts.asp?fr_cdy=2017&fr_cdm=4&fr_cdd=23&to_cdm=4&to_cdd=29&subbtn=salmon&op=sdaily

The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)



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

- The Dalles Collection Channel
- The Dalles North Entrance
- The Dalles Transportation Channel
- The Dalles South Rock Channel



| Secchi: | | Temperatures |
|---------|-------|--------------|
| 4.0 | Sun | 49.7 |
| 2.5 | Mon | 50.0 |
| 3.0 | Tue | 50.0 |
| 3.0 | Wed | 50.3 |
| 3.0 | Thurs | 50.4 |
| 3.0 | Fri | 50.5 |
| 3.0 | Sat | 50.6 |
| 3.1 | AVG | 50.2 |

USGS: http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201704_lcol.html

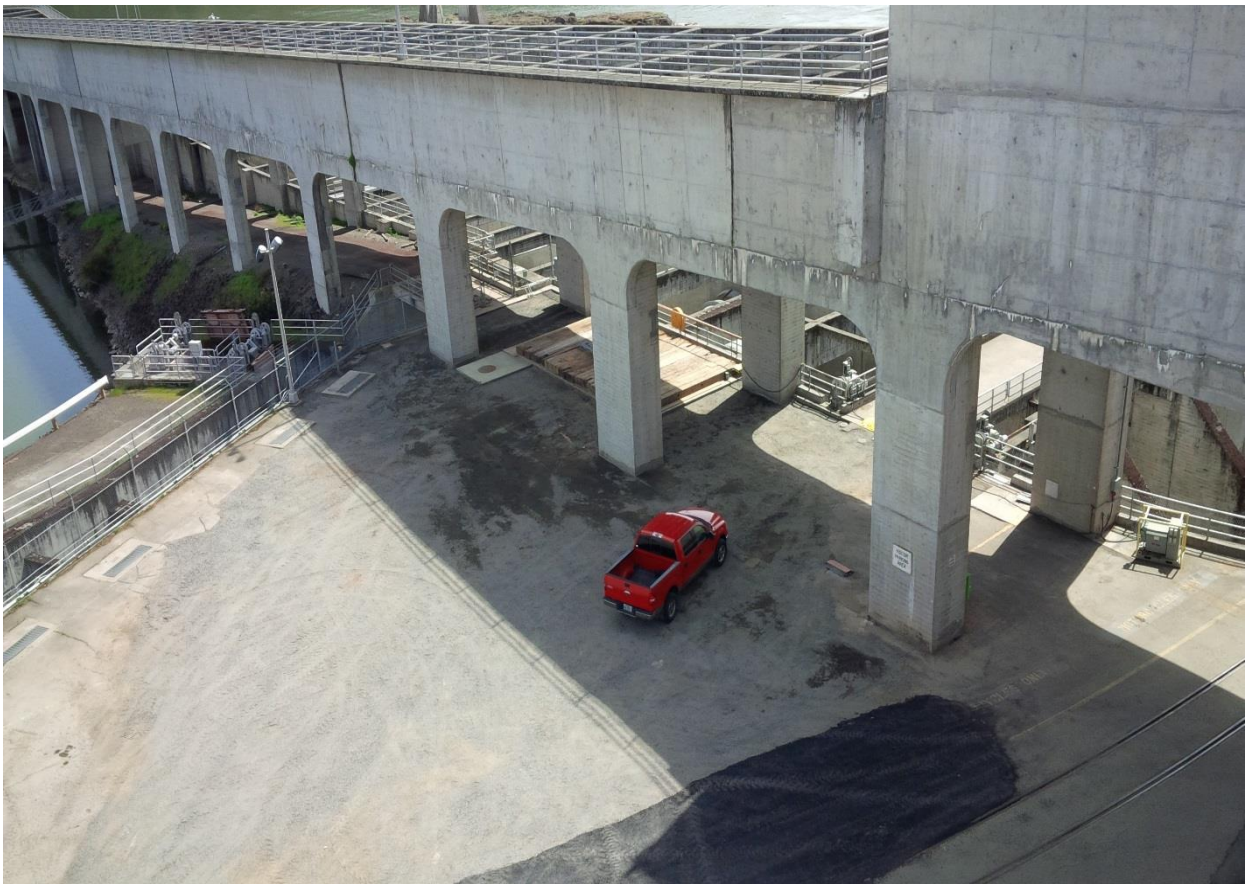
The Dalles Dam Daily Readings and Averages for
Temperatures, Secchi, Entrances, and Spill

= Out of criteria

Spill link
http://www.nwd-wc.usace.army.mil/dd/nwdp/project_hourly/webexec/rep?r=tda&ago=0

| Date: | North Ladder | | | East Ladder | | | | | | | | | | 24 hr avg | |
|-------------|----------------|-------------|---------------|-------------|------------|------------|---------------|--------------|----------|----------------|------------|--------------|------------|------------|-------------|
| | 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 | |
| 4/23 | | | 1.3 | 1.0 | 12.9 | 12.9 | 14.6 | 1.5 | | 11.1 | 11.1 | 1.7 | 9.2 | 9.2 | 56.9 |
| | 1.4 | 10.8 | 1.4 | 1.0 | 12.7 | 12.8 | 13.9 | 1.5 | | 11.1 | 10.9 | 1.6 | 9.2 | 9.2 | |
| | 1.4 | 10.8 | 1.4 | 1.1 | 12.9 | 12.9 | 14.2 | 1.4 | | 11.1 | 11.1 | 1.6 | 9.3 | 9.3 | |
| 4/24 | | | 1.0 | closed | 8.5 | 8.5 | 12.6 | 1.0 | | 8.7 | 8.7 | 1.4 | closed | 9.1 | 56.1 |
| | 1.4 | 9.8 | 0.9 | | 8.6 | 8.7 | 13.4 | 1.0 | | 8.6 | 8.5 | 1.5 | | 9.0 | |
| | 1.4 | 10.8 | 0.9 | | 7.9 | 7.9 | 14.0 | 1.2 | | 8.2 | 8.3 | 1.6 | | 9.0 | |
| 4/25 | | | 0.8 | | 8.0 | 7.9 | 13.7 | 1.2 | | 8.3 | 8.3 | 1.6 | | 9.1 | 53.8 |
| | 1.4 | 10.8 | 1.1 | | 8.1 | 8.0 | 13.6 | 1.2 | | 8.3 | 8.2 | 1.7 | | 8.5 | |
| | 1.4 | 10.8 | 1.1 | 7.9 | 7.9 | 13.0 | 1.2 | | 8.4 | 8.4 | 1.6 | 8.5 | | | |
| 4/26 | | | 0.8 | 5.1 | 8.0 | 7.9 | 13.7 | 1.2 | | 8.3 | 8.3 | 1.6 | 9.1 | 49.2 | |
| | 1.4 | 10.8 | 0.5 | | 8.0 | 8.1 | 14.8 | 0.4 | | 14.5 | 14.5 | 1.4 | 8.5 | | |
| | 1.4 | 10.7 | 0.6 | | 8.3 | 8.2 | 14.7 | 1.1 | | 8.9 | 8.9 | 1.4 | 8.6 | | |
| 4/27 | | | 0.8 | | closed | 8.0 | 8.1 | 14.8 | 1.2 | | 8.4 | 8.4 | 1.8 | 8.3 | 48.6 |
| | 1.4 | 10.7 | 0.4 | | | 8.2 | 8.2 | 14.4 | 0.4 | | 14.5 | 14.5 | 1.3 | 8.6 | |
| | 1.4 | 10.6 | 0.8 | 8.0 | | 8.0 | 15.4 | 1.3 | | 8.2 | 8.2 | 1.5 | 8.6 | | |
| 4/28 | | | 0.6 | closed | | 7.8 | 8.1 | 15.0 | 1.2 | | 8.3 | 8.3 | 1.5 | 8.4 | 48.4 |
| | 1.3 | 10.8 | 1.0 | | | 2.9 | 8.0 | 14.9 | 1.4 | | 8.3 | 8.3 | 1.7 | 8.4 | |
| | 1.3 | 10.8 | 1.0 | | 3.0 | 8.1 | 14.8 | 1.3 | | 8.3 | 8.3 | 1.6 | 8.5 | | |
| 4/29 | | | 1.0 | | closed | 2.9 | 8.1 | 15.2 | 1.4 | | 8.4 | 8.4 | 1.7 | 8.4 | 53.1 |
| | 1.4 | 10.9 | 0.9 | | | 8.2 | 14.7 | 1.2 | | 8.4 | 8.4 | 1.7 | 9.9 | | |
| | 1.5 | 10.9 | 1.1 | 8.0 | | 14.7 | 1.5 | | 8.2 | 6.5 | 1.7 | 9.9 | | | |
| AVG: | 1.4 | 10.7 | 0.9 | 2.1 | 8.0 | 8.8 | 14.3 | 1.2 | | 9.4 | 9.3 | 1.6 | 9.2 | 8.9 | 52.3 |

Fishways are inspected twice daily plus one SCADA inspection.



AWS work done for this season. 7' valve room enclosed.