

The Dalles Dam Fishway Status Report

Date: 10/13/2013
Inspection Period: 10/6 to 10/11/2013

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. Additional daily monitoring done via automation system in fisheries office.

| The Dalles Dam | Inspections | Criteria Limit | Total Number of Inspections: | 21 | Temperature: | 61.1 F |
|---------------------------------|-----------------|----------------|---|------------------|--|--------|
| | Out of Criteria | | Comments | Secchi: in ' 5.0 | | |
| 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' | Average | 1.3 | | |
| Entrance weir N1 | 0 | depth (≥ 8') | Average | 9.4 | | |
| Entrance weir N2 | | Closed | Bulkhead installed. | | | |
| PUD Intake differential | 1 | ≤ 0.5' | OOC at 0.7' | | | |
| EAST FISHWAY | | | | | | |
| Exit differential | 0 | ≤ 0.5' | | | | |
| Removable weirs 154-157 | 0 | Per forebay | Auto adjusts 1' increments. | | | |
| Weir 158-159 differential | 0 | 1.0' ± 0.1' | | | | |
| Count station differential | 0 | ≤ 0.3' | Picketed leads raked daily due to high debris. | | | |
| Weir crest depth | 0 | 1.0' ± 0.1' | | | | |
| Junction pool weir JP6 | 5 | depth (≥ 7') | OOC at 6.2-6.9' .Manually adjusted as needed. | | | |
| East entrance differential | 0 | 1.0' - 2.0' | Average | 1.6 | | |
| Entrance weir E1 | 0 | No criteria | Average | 10.5 | Manually adjusted. | |
| Entrance weir E2 | 0 | depth (≥ 8') | Average | 12.1 | | |
| Entrance weir E3 | 0 | depth (≥ 8') | Average | 12.7 | | |
| Collection channel velocity | 0 | 1.5 - 4 fps | Average | 2.0 | See Velocities tab for more complete information. | |
| Transportation channel velocity | 0 | 1.5 - 4 fps | Average | 2.3 | | |
| North channel velocity | 0 | 1.5 - 4 fps | Average | 2.6 | | |
| South channel velocity | 0 | 1.5 - 4 fps | Average | 2.6 | | |
| West entrance differential | 0 | 1.0' - 2.0' | Average | 1.5 | Daily differentials & weir depths, see AVGS tab. | |
| Entrance weir W1 | 0 | depth (≥ 8') | Average | 8.2 | | |
| Entrance weir W2 | 0 | depth (≥ 8') | Average | 8.2 | | |
| Entrance weir W3 | 0 | No criteria | Average | closed | | |
| South entrance differential | 0 | 1.0' - 2.0' | Average | 1.2 | | |
| Entrance weir S1 | 0 | depth (≥ 8') | Average | 8.2 | 7.9' due to low tailwater. | |
| Entrance weir S2 | 0 | depth (≥ 8') | Average | 8.2 | 7.9' due to low tailwater. | |
| JUVENILE PASSAGE | | | | | | |
| Sluiceway operation | 13 | units 1,8,17 | MU 8 OOS for a cooling water leak, sluiceway open under 8, MU 7 running | | | |
| Turbine trashrack drawdown | 0 | <1.5', wkly | Range: | 0.1-0.6' | | |
| Spill volume | 0 | 40%, 24hr | On seal. | | | |
| Spill Pattern | 0 | per FPP | On seal. | | | |
| Turbine Unit Priority | 0 | per FPP | | | | |
| Turbine 1% Efficiency | 0 | per FPP | | | | |

OTHER ISSUES:

OOS = out of service

Birds/Sea lions:

Bird observation data collected twice daily. Gull numbers low. Cormorant numbers increasing on rocks or towers. See avian zones map and distribution tabs. No sea lion sightings this week.

Operations:

MU8 OOS 0630 10/7/2013 to 1700 10/15/2013 for Preferred AC Upgrade
MU18 OOS 8/26/2013 to 10/3/2013 for digital governor installation.
MU15 OOS 9/17/2013 to 10/31/2013 for five year over haul.
MU7 OOS 9/30/2013 to 10/10/2013 for Governor Control-Oil Piping Modification
Gatewell drawdown completed 10/11. Values ranged from 0.1-0.6' (within criteria).

Maintenance:

Fishway winter maintenance dewatering schedule out for review. East fishway Dec 4 to mid Jan. North fishway Jan 28 through end of Feb. Winter maintenance items include; resecure west entrance diffuser grating, rehab east exit weirs, remove north ladder vegetation and repair leak over east exit electrical panel,

Studies:

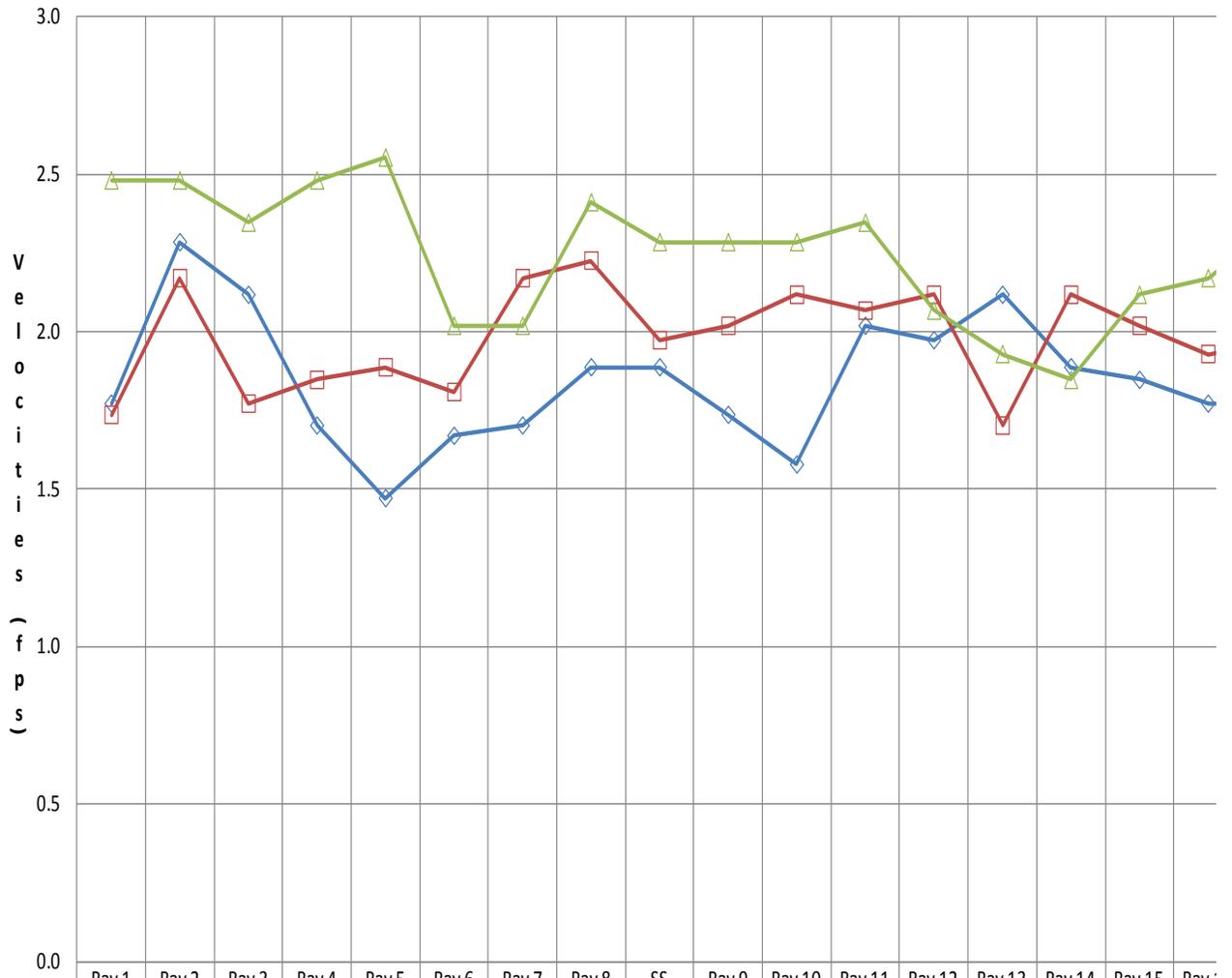
PIT - Temporary Thin Wall PIT tag Antenna continues to work successfully. No more discussion on more permanent option.
EFL - On hold due to Government shutdown. NWW VE Alternative - direct burial closed conduit to AWS chamber with orifice plate energy dissipation. Maintains the intake design and location of a 10' steel pipe presented in the 60% DDR submission, but with a direct line to the AWS conduit.
PUD - "Freedom" turbine proposal out for review. Modification of original FERC license underway.
Lamprey - Planning meeting occurred Oct9 for weir orifice floor plating in lower ladders. To be installed during winter dewatering period.

Research/Contractors:

District surveyors verifying marker locations around project Oct 16.
Plans to remove powerhouse and spillway forebay pier nose antennas this winter by dive.
USFWS to remove camera mount equipment from count stations during this winter dewatering period.
Second phase of goats to remove vegetation around north fish ladder occurred 9/30 to 10/4 with limited results. Continued use unlikely.
Normandeau fish counters performing video counting through 9/30 and visual counting to 10/31. No winter time counting planned.
Last set of derelict Vertical Barrier Screens (VBS) from 90's research remains in MU 12 gatewell slot. Removal planned for next unit outage.
University of Idaho adult RT new antennas both fish ladders completed and operating. Plans to clean up unused antennas this winter.

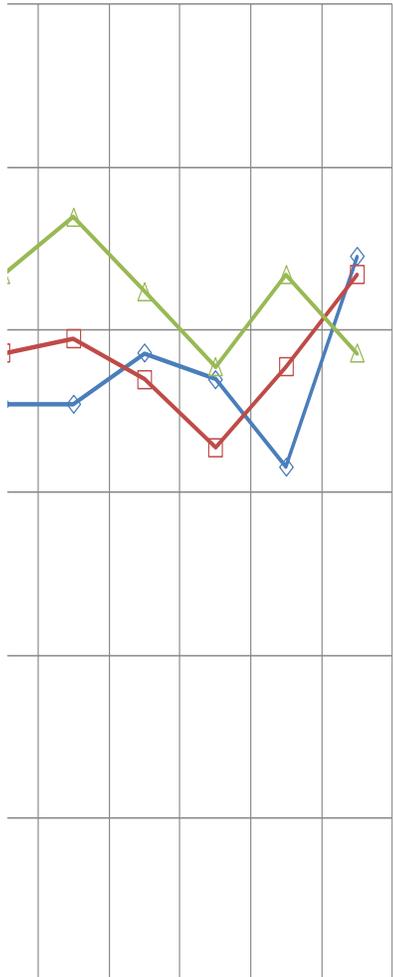
Approved by;
Ron D. Twiner
Operation Project Manager
The Dalles Dam

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



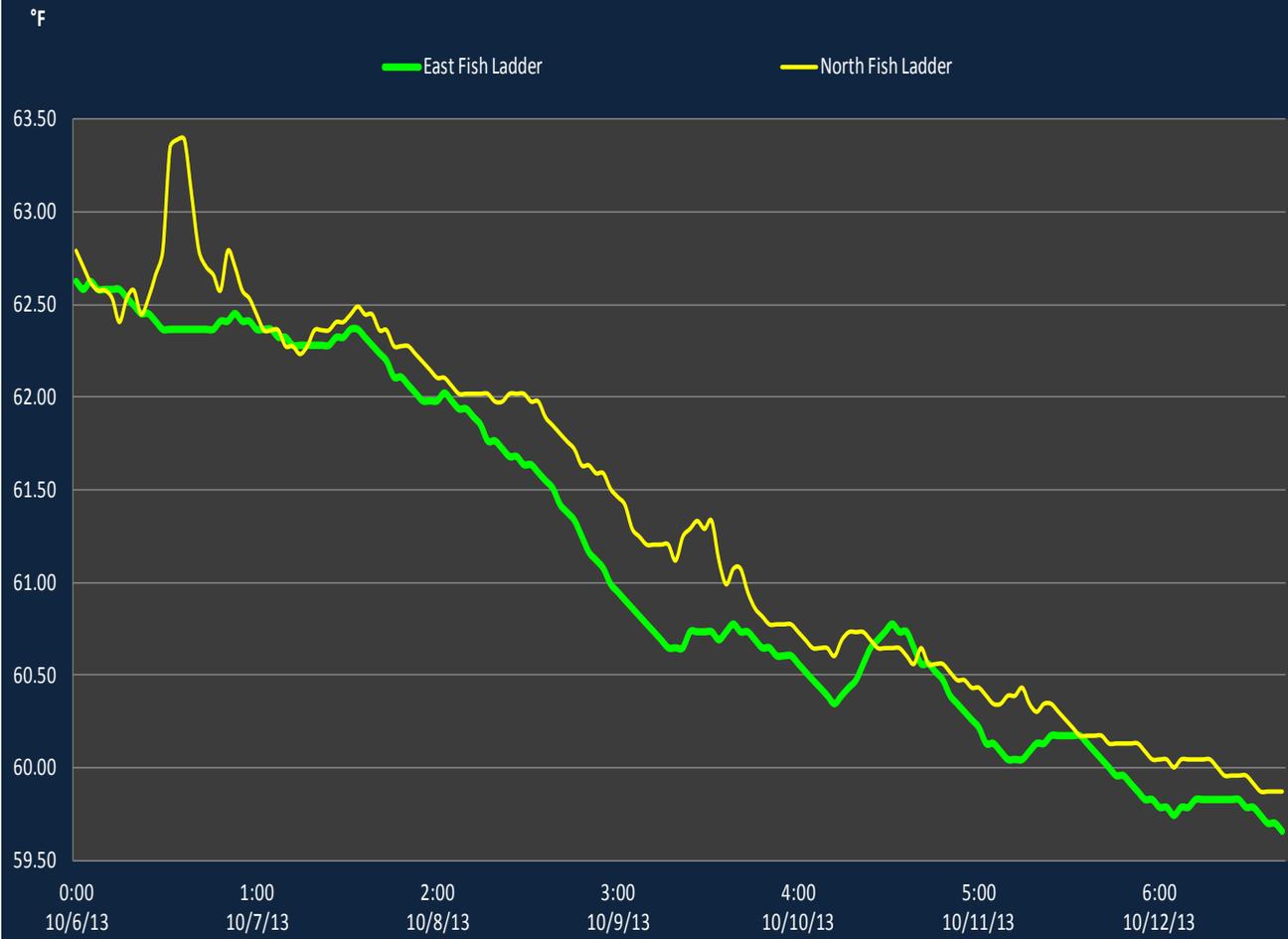
| | Bay 1 | Bay 2 | Bay 3 | Bay 4 | Bay 5 | Bay 6 | Bay 7 | Bay 8 | SS | Bay 9 | Bay 10 | Bay 11 | Bay 12 | Bay 13 | Bay 14 | Bay 15 | Bay 16 |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|--------|--------|--------|--------|--------|--------|--------|
| 9/25/13 | 1.8 | 2.3 | 2.1 | 1.7 | 1.5 | 1.7 | 1.7 | 1.9 | 1.9 | 1.7 | 1.6 | 2.0 | 2.0 | 2.1 | 1.9 | 1.8 | 1.8 |
| 10/2/13 | 1.7 | 2.2 | 1.8 | 1.8 | 1.9 | 1.8 | 2.2 | 2.2 | 2.0 | 2.0 | 2.1 | 2.1 | 2.1 | 1.7 | 2.1 | 2.0 | 1.9 |
| 10/10/13 | 2.5 | 2.5 | 2.3 | 2.5 | 2.6 | 2.0 | 2.0 | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 | 2.1 | 1.9 | 1.8 | 2.1 | 2.2 |

1)



| 16 | Bay 17 | Bay 18 | Bay 19 | Bay 20 | Bay 21 |
|----|--------|--------|--------|--------|--------|
| 3 | 1.8 | 1.9 | 1.8 | 1.6 | 2.2 |
| 9 | 2.0 | 1.8 | 1.6 | 1.9 | 2.2 |
| 2 | 2.3 | 2.1 | 1.9 | 2.2 | 1.9 |

The Dalles Dam Adult Fish Ladder River/Water Temperatures



| Date | Chinook | | | | Jack Chinook | | | | Steelhead | | | | Steelhead Wil | | |
|----------|-------------|------|--------------|-----|--------------|-----|--------------|-----|-------------|-----|--------------|-----|---------------|-----|--------------|
| | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder |
| | Pct | # | Pct | # | Pct | # | Pct | # | Pct | # | Pct | # | Pct | # | Pct |
| 10/06/13 | 95.4 | 2377 | 4.6 | 114 | 96 | 402 | 4.3 | 18 | 95 | 757 | 5 | 40 | 94.2 | 290 | 5.8 |
| 10/07/13 | 87.2 | 1880 | 12.8 | 276 | 90 | 388 | 10 | 43 | 90.4 | 708 | 9.6 | 75 | 88.3 | 241 | 11.7 |
| 10/08/13 | 91 | 1579 | 9 | 157 | 93 | 332 | 6.7 | 24 | 91.4 | 699 | 8.6 | 66 | 92.9 | 302 | 7.1 |
| 10/09/13 | 96.8 | 2351 | 3.2 | 77 | 95 | 390 | 4.6 | 19 | 91 | 603 | 9 | 60 | 86.7 | 202 | 13.3 |
| 10/10/13 | 96 | 3599 | 4 | 149 | 96 | 530 | 3.6 | 20 | 94.1 | 578 | 5.9 | 36 | 94.7 | 214 | 5.3 |
| Date | Chinook | | | | Jack Chinook | | | | Steelhead | | | | Steelhead Wil | | |
| YTD | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder |
| | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct |
| | 93.8 | | 6.2 | | 94.3 | | 5.7 | | 92.4 | | 7.6 | | 91.5 | | 8 |

| Sockeye | | | | Coho | | | | Jack Coho | | | | Lamprey | | |
|-------------|-----|--------------|-----|-------------|-----|--------------|-----|-------------|-----|--------------|-----|-------------|-----|--------------|
| Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder |
| Pct | # | Pct | # | Pct | # | Pct | # | Pct | # | Pct | # | Pct | # | Pct |
| | 0 | | 0 | 95 | 281 | 5.4 | 16 | 100 | 36 | 0 | 0 | | 0 | |
| | 0 | | 0 | 82 | 145 | 18.1 | 32 | 75 | 12 | 25 | 4 | | 0 | |
| | 0 | | 0 | 91 | 131 | 9 | 13 | 92.3 | 12 | 7.7 | 1 | | 0 | |
| | 0 | | 0 | 90 | 104 | 10.3 | 12 | 92.3 | 12 | 7.7 | 1 | 0 | 0 | 100 |
| | 0 | | 0 | 84 | 114 | 16.2 | 22 | 80 | 4 | 20 | 1 | | 0 | |
| Sockeye | | | | Coho | | | | Jack Coho | | | | Lamprey | | |
| Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder | | Left Ladder | | Right Ladder |
| Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct | Pct |
| 0 | | 0 | | 89.1 | | 10.9 | | 91.6 | | 8.4 | | 0 | | 1 |

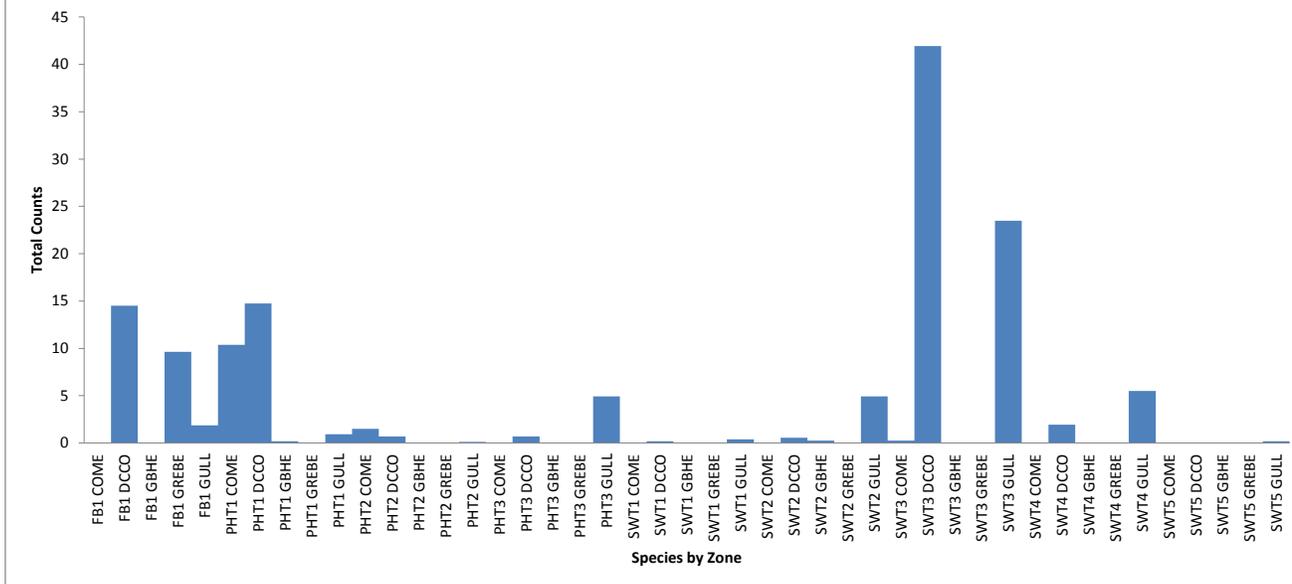
les Adult Ladders passage

| |
|------|
| d |
| ght |
| dder |
| # |
| 18 |
| 32 |
| 23 |
| 31 |
| 12 |
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| 'ct |
| 1.5 |

| | Spill Pct [Right] | Outflow (kcfs) |
|------|-------------------|----------------|
| ght | | |
| dder | | |
| # | | |
| 0 | 0 | 77.1 |
| 0 | 0 | 76.7 |
| 0 | 0 | 93.6 |
| 1 | 0 | 95.2 |
| 0 | 0 | 97.9 |
| | Spill Pct | Outflow |
| ght | | |
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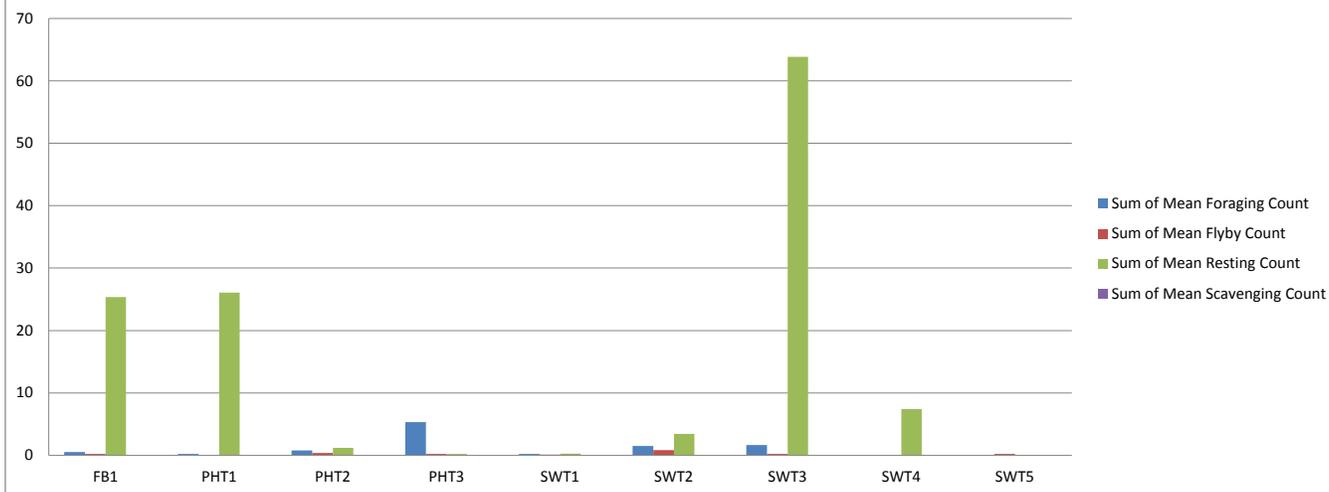


Species by Zone 10/6-12/13



AWPE - American White Pelican; BAEA - Bald Eagle; CATE - Caspian Tern; COME - Common Merganser; DCCO - double crested cormorant; GBHE - Great Blue Heron; GREBE - Grebe; Gull- Gull (all species); OSPR - Osprey

Avian Behavior by Zone 10/6-12/13



| | | |
|-------|------|---------|
| Temp: | SUN | Secchi: |
| 62.6 | MON | 5.0 |
| 62.4 | TUES | 5.0 |
| 61.9 | WED | 5.0 |
| 60.6 | THUR | 5.0 |
| 60.3 | FRI | 5.0 |
| 59.9 | SAT | 5.0 |
| 59.7 | AVG: | 5.0 |
| AVG: | | |
| 61.1 | | |

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

| North Fish Ladder | | East Fish Ladder | | | | | | | | | | | | | |
|-------------------|--------------|------------------|--------------|---------|----------|----------|------|---------------|---------|----------|----------------|--------------|----------|----------|----------------------------|
| North Entrance | | East Entrance | | | | | | West Entrance | | | South Entrance | | | KCFS | |
| Date: | Differential | N1 Depth | Differential | E1Depth | E2 Depth | E3 Depth | JP 6 | Differential | W1Depth | W2 Depth | W3 Depth | Differential | S1 Depth | S2 Depth | % Spill |
| 10/6 | 1.1 | 9.6 | 1.6 | 8.6 | 13.4 | 13.0 | 6.9 | 1.5 | 8.2 | 8.2 | | 1.1 | 8.3 | 8.2 | O n s e a l |
| 10/6 | 1.2 | 9.6 | 1.7 | 8.4 | 13.4 | 13.0 | 6.9 | 1.4 | 8.1 | 8.2 | | 1.2 | 8.2 | 8.1 | |
| 10/6 | | | 1.6 | 9.5 | 13.4 | 13.1 | 7.0 | 1.5 | 8.2 | 8.2 | | 1.2 | 8.1 | 8.2 | |
| 10/7 | 1.2 | 9.4 | 1.6 | 8.5 | 12.0 | 12.7 | 6.6 | 1.5 | 8.3 | 8.2 | | 1.1 | 8.2 | 8.2 | |
| 10/7 | 1.1 | 9.6 | 1.5 | 8.5 | 13.5 | 13.1 | 7.0 | 1.5 | 8.2 | 8.1 | | 1.2 | 8.2 | 8.2 | |
| 10/7 | | | 1.6 | 8.7 | 13.3 | 12.7 | 6.6 | 1.3 | 8.2 | 8.3 | | 1.0 | 8.2 | 8.2 | |
| 10/8 | 1.3 | 9.4 | 1.8 | 9.5 | 12.0 | 11.6 | 7.0 | 1.4 | 8.3 | 8.2 | | 1.1 | 8.3 | 8.2 | |
| 10/8 | 1.2 | 9.3 | 1.7 | 9.5 | 11.7 | 11.3 | 7.0 | 1.5 | 8.1 | 8.2 | | 1.1 | 8.2 | 8.3 | |
| 10/8 | | | 1.6 | 9.5 | 11.2 | 12.0 | 6.2 | 1.4 | 8.2 | 8.2 | | 1.2 | 8.1 | 8.1 | |
| 10/9 | 1.3 | 9.3 | 1.9 | 9.4 | 11.5 | 11.7 | 8.0 | 1.6 | 8.2 | 8.2 | | 1.3 | 8.1 | 8.1 | |
| 10/9 | 1.4 | 9.5 | 1.8 | 11.0 | 11.9 | 11.7 | 7.4 | 1.4 | 8.2 | 8.3 | | 1.3 | 8.1 | 8.1 | |
| 10/9 | | | 1.8 | 9.5 | 12.1 | 11.7 | | 1.6 | 8.2 | 8.1 | | 1.3 | 8.1 | 8.1 | |
| 10/10 | 1.2 | 9.4 | 1.9 | 11.7 | 11.5 | 11.6 | 7.7 | 1.5 | 8.2 | 8.3 | | 1.3 | 8.1 | 8.1 | |
| 10/10 | 1.3 | 9.5 | 1.4 | 9.8 | 11.9 | 13.6 | 7.9 | 1.5 | 8.2 | 8.3 | | 1.1 | 8.3 | 8.3 | |
| 10/10 | | | 1.7 | 12.1 | 11.9 | 12.2 | 7.4 | 1.6 | 8.3 | 8.2 | | 1.1 | 8.2 | 8.2 | |
| 10/11 | 1.4 | 9.4 | 1.4 | 13.6 | 11.9 | 13.6 | 8.4 | 1.5 | 8.3 | 8.3 | | 1.2 | 8.3 | 8.3 | |
| 10/11 | 1.4 | 9.3 | 1.4 | 13.5 | 11.7 | 13.4 | 8.2 | 1.6 | 8.2 | 8.2 | | 1.2 | 8.1 | 8.1 | |
| 10/11 | | | 1.5 | 13.5 | 12.0 | 13.4 | | 1.6 | 8.1 | 8.2 | | 1.2 | 8.2 | 8.2 | |
| 10/12 | 1.4 | 9.3 | 1.3 | 13.4 | 11.5 | 13.5 | 8.0 | 1.6 | 8.1 | 8.2 | | 1.2 | 8.2 | 8.2 | |
| 10/12 | 1.3 | 9.4 | 1.5 | 13.4 | 11.2 | 13.4 | 7.7 | 1.6 | 8.1 | 8.1 | | 1.2 | 8.2 | 8.2 | |
| 10/12 | | | 1.4 | 9.4 | 11.9 | 13.6 | 8.4 | 1.5 | 8.3 | 8.3 | | 1.2 | | | |
| AVG: | 1.3 | 9.4 | 1.6 | 10.5 | 12.1 | 12.7 | 7.4 | 1.5 | 8.2 | 8.2 | closed | 1.2 | 8.2 | 8.2 | |

Third fish way inspection for east fish ladder, east, west, and south entrances completed via automation system in fisheries office (SCADA).