

# The Dalles Dam Fishway Status Report

10/1/2017

Inspection Period: 09/24/2017-09/30/2017

## 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<br>Out of Criteria | Criteria<br>Limit | Total Number of Inspections:                                      | 21      | Temperature:  | 66.3 °F |
|---------------------------------|--------------------------------|-------------------|---|---------|---|---------|
|                                 |                                |                   | Comments  | Secchi: | 5.0   | feet    |
| <b>NORTH FISHWAY</b>            |                                |                   |   |         |   |         |
| 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'       | 1.3   |         |   |         |
| Entrance weir N1                | 0                              | depth (≥ 8')      | 9.2   |         |   |         |
| Entrance weir N2                | 0                              | Closed            |   |         |   |         |
| PUD Intake differential         | 14                             | ≤ 0.5'            | 0.6'  |         | PUD rake crane being repainted. Return to service 9/28. |         |
| <b>EAST FISHWAY</b>             |                                |                   |   |         |   |         |
| 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. Debris load light.                  |         |   |         |
| Weir crest depth                | 0                              | 1.0' ± 0.1'       |   |         |   |         |
| Junction pool weir JP6          | 0                              | 0.0               | 10.9  |         |   |         |
| East entrance differential      | 0                              | 1.0' - 2.0'       | 1.5   |         |   |         |
| Entrance weir E1                | 0                              | No criteria       |   |         |   |         |
| Entrance weir E2                | 0                              | depth (≥ 8')      | 12.0  |         |   |         |
| Entrance weir E3                | 0                              | depth (≥ 8')      | 12.0  |         |   |         |
| Collection channel velocity     | 0                              | 1.5 - 4 fps       | 2.29  |         |   |         |
| Transportation channel velocity | 0                              | 1.5 - 4 fps       | 2.22  |         |   |         |
| North channel velocity          | 0                              | 1.5 - 4 fps       | 2.84  |         |   |         |
| South channel velocity          | 0                              | 1.5 - 4 fps       | 3.43  |         |   |         |
| West entrance differential      | 0                              | 1.0' - 2.0'       | 1.4   |         |   |         |
| Entrance weir W1                | 0                              | depth (≥ 8')      | 8.3   |         |   |         |
| Entrance weir W2                | 0                              | depth (≥ 8')      | 8.3   |         |   |         |
| Entrance weir W3                | 0                              | No criteria       |   |         |   |         |
| South entrance differential     | 0                              | 1.0' - 2.0'       | 1.5   |         |   |         |
| Entrance weir S1                | 0                              | depth (≥ 8')      | 8.3   |         |   |         |
| Entrance weir S2                | 0                              | depth (≥ 8')      | 8.3   |         |   |         |
| <b>JUVENILE PASSAGE</b>         |                                |                   |   |         |   |         |
| Sluiceway operation             | 0                              | Units 1, 8, 18    |   |         |   |         |
| Turbine trashrack drawdown      | 0                              | <1.5', wkly       | range: 0.1-0.8'   |         |   |         |
| Spill volume/pattern            | 0                              |                   | Spillway closed midnight Aug31                                    |         |   |         |
| Turbine Unit Priority           | 14                             | per FPP           | MU 13-16 oos  |         |   |         |
| Turbine 1% Efficiency           | 0                              | per FPP           |   |         |   |         |

## OTHER ISSUES:

### **Birds/Sea lions:**

Sea lion observed at The Dalles marina-see pic. No foraging gulls. Moderate cormorant numbers. No USDA hazing. Spillway avian line repair completed 9/14.

### **Operations**

North and east fishladders in full operation.

Spillway closed.

Sluiceway open with 6 gates (units 1, 8 and 18)

### **Current Outages;**

T8 (MU15 & MU16) out for transformer failure. Transformer replacement 7/5/18.

MU13 forced out of service for repairs

MU17 out for overhaul

### **Maintenance;**

East powerhouse avian line grid to be removed Early Oct due to electrical shock hazard. FPOM approved. Avian predation monitoring to continue.

East exit weir electrical panel FCQ7 partially installed. Engineering design and CADD drawings continues. Further installation during winter outage.

PUD crane rake back in service after repaint.

Rebuilding entrance weir and east exit weir spare gearboxes.

Designing fish lock upper and lower bulkhead replacement with concrete for improved isolation and fishladder protection.

W1 entrance weir sticking issue identified. Still maintaining criteria depth. Correction this winter.

Fishway dewatering schedule and work list draft reviewed. Items include; Diffuser valve rehab scope, dewater pump rehab, south weir rehab, Weir caps (lamprey)

Other repair maintenance plans for upcoming fiscal years; 154 -157 rehab/weir wheel replace, diffuser valve overhaul (rehab and decommission).

Fish related /non-fish funded items; Spillway assessment, spillway crane replace and spillgate 9. All awaiting funding.

All spillway items on Critical Infrastructure. Spillgate 9 on large cap list, projected for 2022.

### **Research/Construction/Contractors:**

*Fish Counters* - Normandau counters on site through Oct.

*Pikeminnow dam angling* - 34 removed this week, 1774 through 9/30. All from west powerhouse tailrace.

*AWS construction* - Planning season 2 schedule. Extensions Oct/Nov night work and Nov day work FPOM approved. Commissioning plan underway for 3/31.

*Adult Lamprey translocation project completed trapping at project for season*

*Lamprey minor mods* - Rounded entrance weir cap parts for all entrances ordered. Moorings to assist in assembling. Tribal lamprey trap hoist design pending.

*Railroad track removal* - Lower west powerhouse asphalt 9/8. Tailrace deck start Nov nights (FPOM approved)

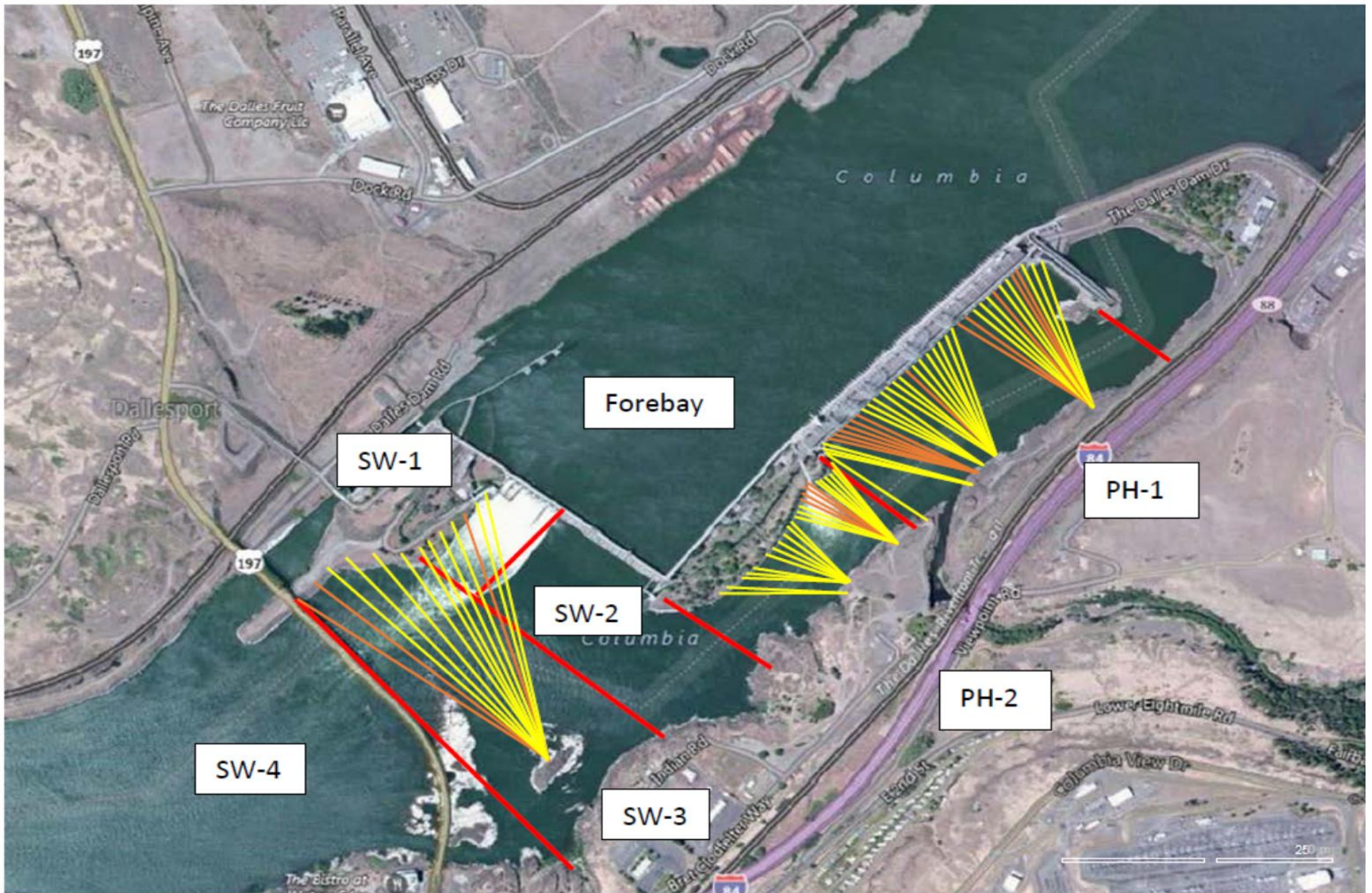
*Fish unit breaker replace*.- Manufacture this summer and install fall 2017. Switchover Jan 2018.

*Fish unit rehab* - Phase 1A report Jan 2018. Award 2020. Completion 2022.

*Transformer replacement* - Install start May 2018.

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 | 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 |                     |       |    |  |
| 9/24 | GJF      | PM   | FB   | 0    | 3  | 2         | 6  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 11    |    |  |
|      |          |      | PH1  | 0    | 0  | 3         | 1  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 4  |  |
|      |          |      | PH2  | 0    | 0  | 4         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 4  |  |
|      |          |      | SW1  | 0    | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |  |
|      |          |      | SW2  | 0    | 0  | 2         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 2  |  |
|      |          |      | SW3  | 0    | 0  | 1         | 22 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 23 |  |
|      |          |      | SW4  | 0    | 12 | 0         | 4  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 16                  |       |    |  |
| 9/25 | GJF      | AM   | FB   | 0    | 0  | 0         | 24 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 24    |    |  |
|      |          |      | PH1  | 0    | 1  | 1         | 2  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 4     |    |  |
|      |          |      | PH2  | 0    | 0  | 1         | 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  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |  |
|      |          |      | SW3  | 0    | 0  | 0         | 39 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 39 |  |
|      |          |      | SW4  | 0    | 4  | 0         | 4  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 8                   |       |    |  |
| 9/26 | GJF      | PM   | FB   | 0    | 4  | 5         | 9  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 18    |    |  |
|      |          |      | PH1  | 0    | 1  | 5         | 16 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 22    |    |  |
|      |          |      | PH2  | 6    | 0  | 0         | 2  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 8     |    |  |
|      |          |      | SW1  | 0    | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |  |
|      |          |      | SW2  | 0    | 0  | 2         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 2     |    |  |
|      |          |      | SW3  | 0    | 3  | 0         | 59 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 62    |    |  |
|      |          |      | SW4  | 0    | 0  | 0         | 12 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 12 |                     |       |    |  |
| 9/27 | JWR      | AM   | FB   | 0    | 0  | 0         | 66 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 66    |    |  |
|      |          |      | PH1  | 0    | 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     | 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  | 0    | 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                   |       |    |  |
| 9/28 | JWR      | PM   | FB   | 0    | 0  | 3         | 56 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 59    |    |  |
|      |          |      | PH1  | 0    | 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     | 0  |  |
|      |          |      | 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  | 0    | 0  | 0         | 29 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 29 |  |
|      |          |      | SW4  | 0    | 0  | 0         | 1  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 1                   |       |    |  |
| 9/29 | JWR      | AM   | FB   | 0    | 0  | 1         | 47 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 48    |    |  |
|      |          |      | PH1  | 0    | 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     | 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  | 0    | 0  | 0         | 16 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 16 |  |
|      |          |      | SW4  | 0    | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   |       |    |  |
| 9/30 | JWR      | PM   | FB   | 0    | 0  | 0         | 33 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 33    |    |  |
|      |          |      | PH1  | 0    | 0  | 0         | 8  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 8     |    |  |
|      |          |      | 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  | 0    | 0  | 0         | 21 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 21 |  |
|      |          |      | SW4  | 0    | 1  | 1         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 2                   |       |    |  |

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     | Lamprey   |
|--------------|--------------|---------------|--------------|---------------|-------------------|---------------------|-------------|-------------|------------|----------|----------|----------|-----------|
| 9/24         | 4472         | 3907          | 565          | 2316          | 1949              | 367                 | 1916        | 1774        | 142        | 0        | 0        | 1        | 20        |
| 9/25         | 5287         | 4518          | 769          | 1969          | 1541              | 428                 | 1189        | 1118        | 71         | 0        | 0        | 0        | 11        |
| 9/26         | 3726         | 3152          | 574          | 1730          | 1376              | 354                 | 1132        | 1082        | 50         | 0        | 0        | 0        | 7         |
| 9/27         | 3708         | 3269          | 439          | 1379          | 1132              | 247                 | 820         | 762         | 58         | 5        | 0        | 0        | 4         |
|              |              |               |              |               |                   |                     |             |             |            |          |          |          |           |
|              |              |               |              |               |                   |                     |             |             |            |          |          |          |           |
|              |              |               |              |               |                   |                     |             |             |            |          |          |          |           |
| <b>total</b> | <b>17193</b> | <b>14846</b>  | <b>2347</b>  | <b>7394</b>   | <b>5998</b>       | <b>1396</b>         | <b>5057</b> | <b>4736</b> | <b>321</b> | <b>5</b> | <b>0</b> | <b>1</b> | <b>42</b> |

### The Dalles North

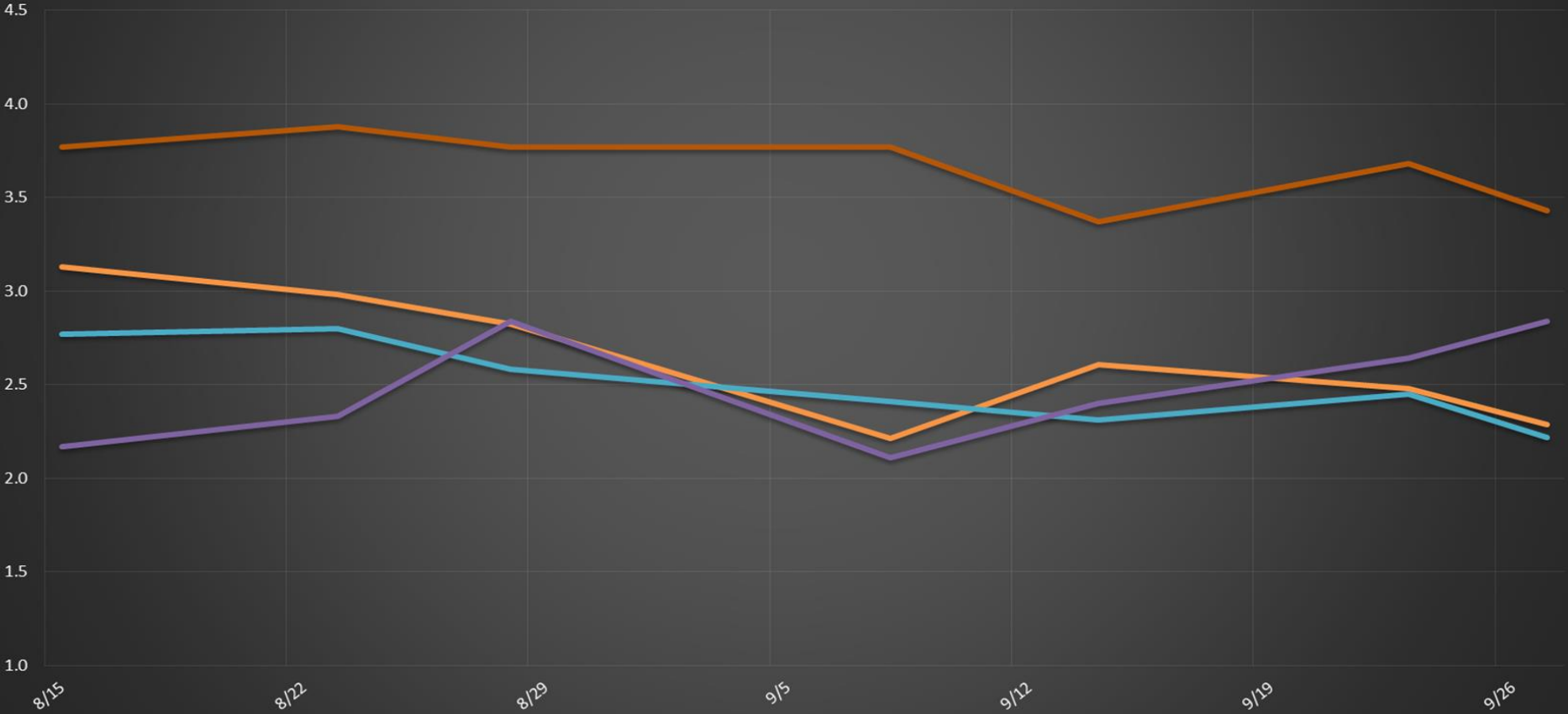
| Date           | All Chinook | Adult Chinook | Jack Chinook | All Steelhead | Clipped Steelhead | Unclipped Steelhead | All Coho    | Adult Coho  | Jack Coho  | Sockeye     | Chum       | Pink       | Lamprey     |
|----------------|-------------|---------------|--------------|---------------|-------------------|---------------------|-------------|-------------|------------|-------------|------------|------------|-------------|
| 9/24           | 348         | 281           | 67           | 524           | 448               | 76                  | 226         | 218         | 8          | 1           | 0          | 0          | 1           |
| 9/25           | 682         | 575           | 107          | 481           | 378               | 103                 | 329         | 316         | 13         | 0           | 0          | 0          | 5           |
| 9/26           | 306         | 266           | 40           | 108           | 89                | 19                  | 54          | 54          | 0          | 0           | 0          | 0          | 0           |
| 9/27           | 78          | 53            | 25           | 72            | 53                | 19                  | 71          | 70          | 1          | 0           | 0          | 0          | 0           |
|                |             |               |              |               |                   |                     |             |             |            |             |            |            |             |
|                |             |               |              |               |                   |                     |             |             |            |             |            |            |             |
|                |             |               |              |               |                   |                     |             |             |            |             |            |            |             |
| <b>total</b>   | <b>1414</b> | <b>1175</b>   | <b>239</b>   | <b>1185</b>   | <b>968</b>        | <b>217</b>          | <b>680</b>  | <b>658</b>  | <b>22</b>  | <b>1</b>    | <b>0</b>   | <b>0</b>   | <b>6</b>    |
| <b>% North</b> | <b>7.6</b>  | <b>7.3</b>    | <b>9.2</b>   | <b>13.8</b>   | <b>13.9</b>       | <b>13.5</b>         | <b>11.9</b> | <b>12.2</b> | <b>6.4</b> | <b>16.7</b> | <b>0.0</b> | <b>0.0</b> | <b>12.5</b> |

Salmon  
Lamprey

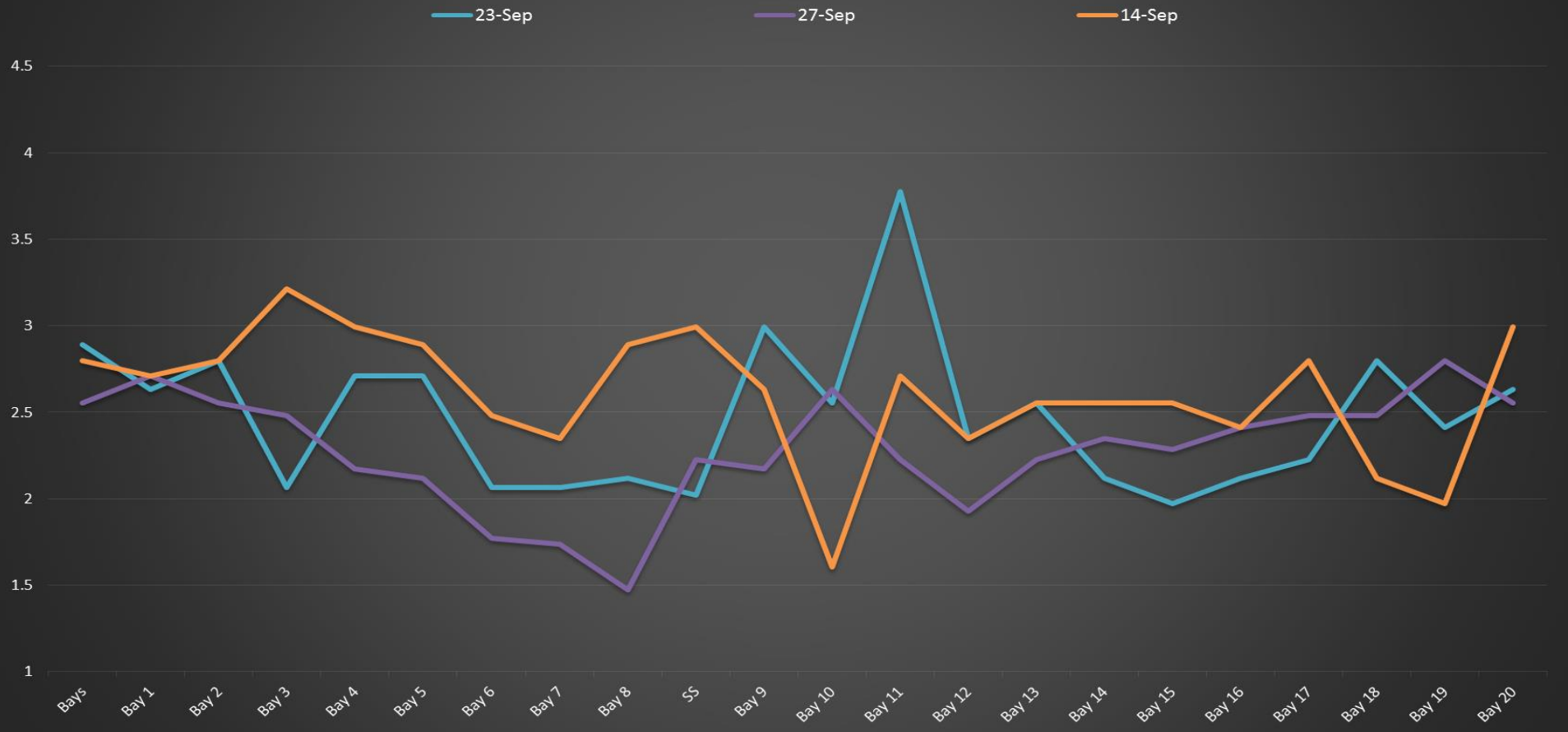


# The Dalles Dam Average Velocities (In criteria 1.5 - 4.0 fps)

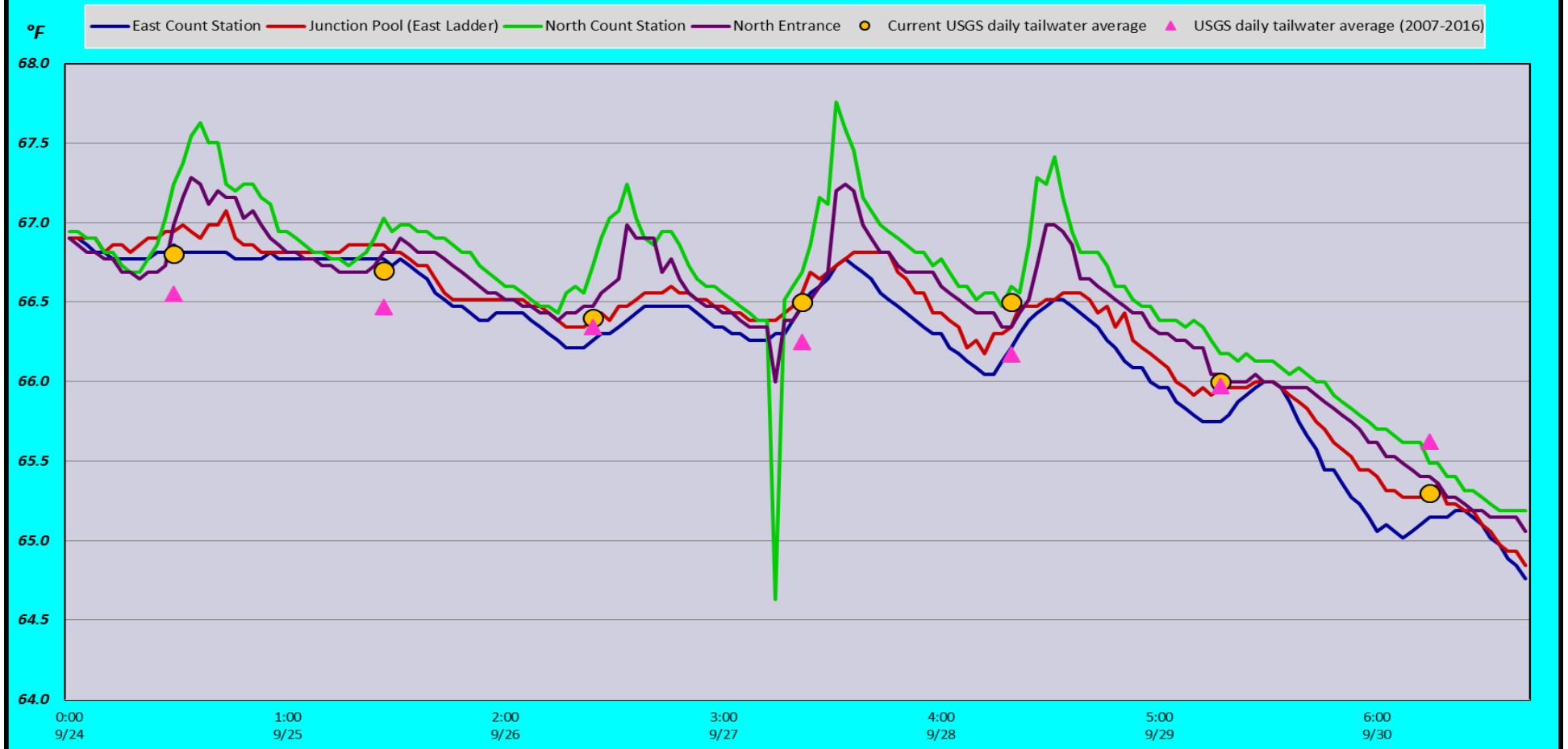
The Dalles Collection Channel    The Dalles Transportation Channel    The Dalles North Entrance    The Dalles South Rock Channel



# The Dalles Dam Collection Channel Velocities (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/201709.icol.html>

| Secchi: |       | Temperatures |
|---------|-------|--------------|
| 5.0     | Sun   | 66.8         |
| 5.0     | Mon   | 66.7         |
| 5.0     | Tue   | 66.4         |
| 5.0     | Wed   | 66.5         |
| 5.0     | Thurs | 66.5         |
| 5.0     | Fri   | 66.0         |
| 5.0     | Sat   | 65.3         |
| 5.0     | AVG   | 66.3         |

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

= Out of criteria

| Date:       | North Ladder   |            | East Ladder   |             |             |             |             |               |            |            |             |                | South Entrance |            |  |
|-------------|----------------|------------|---------------|-------------|-------------|-------------|-------------|---------------|------------|------------|-------------|----------------|----------------|------------|--|
|             | 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   |  |
| 9/24        |                |            | 1.2           | 9.0         | 12.1        | 12.1        | 9.6         | 1.4           | 8.4        | 8.4        |             | 1.4            | 8.3            | 8.3        |  |
|             | 1.2            | 9.2        | 1.2           | 9.0         | 12.1        | 12.1        | 9.6         | 1.4           | 8.4        | 8.4        |             | 1.4            | 8.3            | 8.3        |  |
|             | 1.3            | 9.3        | 1.3           | 9.0         | 11.9        | 11.9        | 9.4         | 1.5           | 8.3        | 8.3        |             | 1.4            | 8.4            | 8.3        |  |
| 9/25        |                |            | 1.5           | 9.1         | 12.1        | 12.1        | 11.0        | 1.4           | 8.4        | 8.4        |             | 1.5            | 8.3            | 8.3        |  |
|             | 1.2            | 9.2        | 1.5           | 9.0         | 12.0        | 12.0        | 11.1        | 1.5           | 8.5        | 8.3        |             | 1.4            | 8.4            | 8.4        |  |
|             | 1.3            | 9.1        | 1.6           | 9.0         | 12.0        | 12.0        | 11.4        | 1.4           | 8.3        | 8.3        |             | 1.4            | 8.4            | 8.4        |  |
| 9/26        |                |            | 1.7           | 10.0        | 12.0        | 12.0        | 11.7        | 1.5           | 8.3        | 8.3        |             | 1.5            | 8.3            | 8.4        |  |
|             | 1.4            | 9.4        | 1.7           | 9.0         | 12.0        | 12.0        | 11.9        | 1.5           | 8.3        | 8.3        |             | 1.5            | 8.4            | 8.3        |  |
|             | 1.2            | 9.4        | 1.8           | 8.9         | 12.1        | 12.0        | 12.5        | 1.5           | 8.4        | 8.4        |             | 1.5            | 8.3            | 8.4        |  |
| 9/27        |                |            | 1.6           | 8.9         | 11.9        | 12.0        | 11.2        | 1.4           | 8.2        | 8.2        |             | 1.5            | 8.4            | 8.3        |  |
|             | 1.3            | 9.0        | 1.6           | 9.0         | 12.0        | 12.0        | 11.4        | 1.3           | 8.2        | 8.3        |             | 1.4            | 8.2            | 8.3        |  |
|             | 1.2            | 9.1        | 1.7           | 9.1         | 11.9        | 12.0        | 11.6        | 1.5           | 8.4        | 8.4        |             | 1.5            | 8.3            | 8.4        |  |
| 9/28        |                |            | 1.6           | 9.1         | 12.1        | 12.1        | 11.2        | 1.4           | 8.2        | 8.2        |             | 1.5            | 8.2            | 8.2        |  |
|             | 1.4            | 9.1        | 1.6           | 9.0         | 12.1        | 12.0        | 11.4        | 1.3           | 8.2        | 8.3        | 1.4         | 8.3            | 8.2            |            |  |
|             | 1.3            | 9.2        | 1.7           | 9.0         | 12.0        | 12.0        | 11.1        | 1.6           | 8.3        | 8.3        | 1.5         | 8.4            | 8.4            |            |  |
| 9/29        |                |            | 1.5           | 9.1         | 12.2        | 12.2        | 10.8        | 1.4           | 8.4        | 8.4        | 1.5         | 8.3            | 8.3            |            |  |
|             | 1.4            | 9.2        | 1.6           | 9.0         | 12.1        | 12.1        | 11.2        | 1.6           | 8.1        | 8.1        | 1.6         | 8.2            | 8.2            |            |  |
|             | 1.3            | 9.1        | 1.6           | 9.2         | 12.1        | 12.0        | 10.9        | 1.5           | 8.3        | 8.3        | 1.5         | 8.3            | 8.3            |            |  |
| 9/30        |                |            | 1.3           | 9.1         | 12.0        | 12.0        | 10.0        | 1.4           | 8.2        | 8.2        | 1.5         | 8.3            | 8.3            |            |  |
|             | 1.3            | 9.1        | 1.3           | 9.1         | 12.0        | 12.1        | 10.0        | 1.4           | 8.2        | 8.2        | 1.5         | 8.3            | 8.3            |            |  |
|             | 1.4            | 9.0        | 1.3           | 9.0         | 12.1        | 12.1        | 10.1        | 1.5           | 8.3        | 8.2        | 1.4         | 8.2            | 8.2            |            |  |
| <b>AVG:</b> | <b>1.3</b>     | <b>9.2</b> | <b>1.5</b>    | NO CRITERIA | <b>12.0</b> | <b>12.0</b> | <b>10.9</b> | <b>1.4</b>    | <b>8.3</b> | <b>8.3</b> | NO CRITERIA | <b>1.5</b>     | <b>8.3</b>     | <b>8.3</b> |  |

Fishways are inspected twice daily plus one SCADA inspection.



Resident sea lion relaxing at the Marina