

# The Dalles Dam Fishway Status Report

6/17/2017

Inspection Period: 06/11/2017-06/17/2017

## 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: Comments	21	Temperature: Secchi:	61.5 °F 3.4 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'	1.4			
Entrance weir N1	0	depth (≥ 8')	10.7			
Entrance weir N2	0	Closed				
PUD Intake differential	0	≤ 0.5'				
<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	callibrated 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	depth (≥ 7')	16.3			
East entrance differential	0	1.0' - 2.0'	1.6			
Entrance weir E1	0	No criteria	3.1			
Entrance weir E2	0	depth (≥ 8')	12.0			
Entrance weir E3	0	depth (≥ 8')	12.0			
Collection channel velocity	0	1.5 - 4 fps	2.51			
Transportation channel velocity	0	1.5 - 4 fps	2.28			
North channel velocity	0	1.5 - 4 fps	2.26			
South channel velocity	0	1.5 - 4 fps	2.38			
West entrance differential	0	1.0' - 2.0'	1.4			
Entrance weir W1	0	depth (≥ 8')	11.9			
Entrance weir W2	0	depth (≥ 8')	11.9			
Entrance weir W3	0	depth (>8')	0.0	Closed		
South entrance differential	0	1.0' - 2.0'	1.5	High TW causing transfer of south channal water to west entrance via bypass		
Entrance weir S1	0	depth (≥ 8')	9.0			
Entrance weir S2	0	depth (≥ 8')	9.0			
<b>JUVENILE PASSAGE</b>						
Sluicgate operation	0	Units 1, 8, 18				
Turbine trashrack drawdown	0	<1.5', wkly	range: 0.1-0.8'			
Spill volume/pattern	2			Exceeding 40% due to high flows		
Turbine Unit Priority	14	per FPP	MU 1, 12, 15, 16, out of service			
Turbine 1% Efficiency	0	per FPP	FERC annual MU exercise			

## OTHER ISSUES:

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

No sea lions observed

Gull numbers have decreased significantly. USDA hazing continues. Refer to avian map and observations.

### **Operations:**

North and east fishladders in full operation.

Spillway open 40% river flow for fish passage through spillgates 1-8.

Sluiceway open with 6 gates (units 2, 8 and 18)

### **Current Outages;**

MU1 out for 5 year overhaul. Return 7/14/17.

MU12 out for hydraulic diagnosis and overhaul. Return 6/29/17.

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

MU22 out for annual maintenance. Return 7/6/17.

### **Maintenance;**

East exit weir electrical panel FCQ7 engineering design underway.

PUD crane rake repainting awaiting lead test confirmation before starting.

Rebuilding spare entrance weir gearbox.

Removal of unused redundant junction pool weirs and fish lock weir gearboxes to start soon.

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

Planning crane pad for north ladder dewatering access. Awaiting cultural approval.

Designing sturgeon tank modifications for improved fish salvage.

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, both awaiting funding.

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

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

*Pikeminnow dam angling* - 132 removed this week, 402 through 6/18. All from west powerhouse tailrace.

*AWS construction* - All work complete for season 1. Planning for season 2 schedule and commissioning procedures.

*Lamprey minor mods* - Rounded entrance weir cap parts for all entrances ordered. Tribal lamprey trap hoist design complete. Fab FY17 and install FY18.

*Railroad track removal* - Intake deck rail removal underway at units 18-22. Lower west powerhouse asphalt next (FPOM approved).

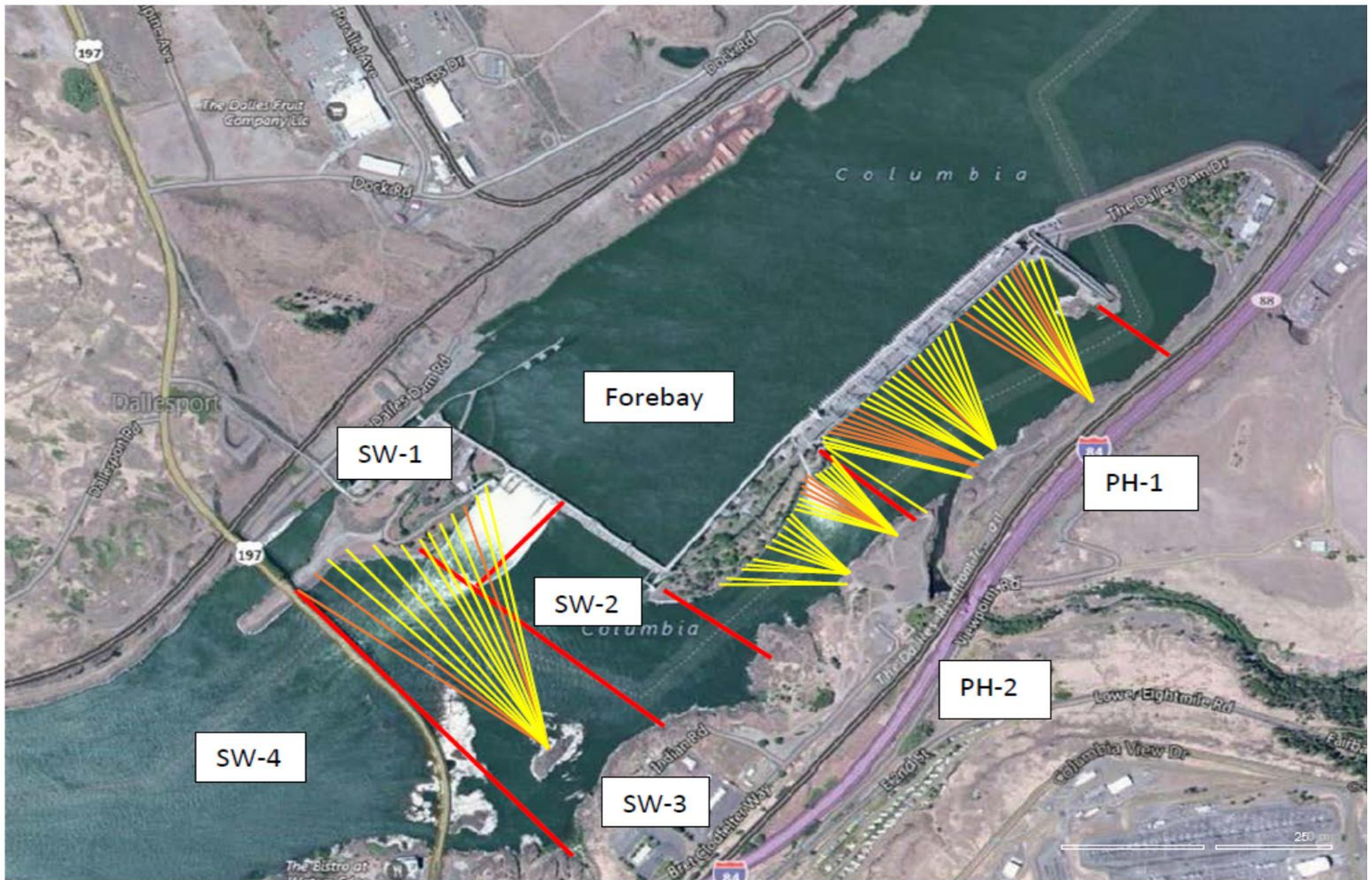
*Fish unit breaker replace*.- Manufacture this summer and install fall 2017. Switchover Jan 2018.

*Fish unit rehab* - Phase 1A report Jan 2018. Award 2020. Completion 2022. Calculating minimum flow. Data collection continues.

*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 (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			
6/18	GJF	PM	FB	0	0	4	16	0	0	0	0	0	0	0	0	0	20	
			PH1	0	1	2	7	0	0	0	0	0	0	0	0	0	10	
			PH2	8	0	1	0	0	0	0	0	0	0	0	0	0	9	
			SW1	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	20	0	1	0	0	0	0	0	0	0	0	0	0	21	
6/19	BC	AM	FB	0	39	3	46	0	0	0	0	0	1	0	0	89		
			PH1	0	0	0	5	0	0	0	0	0	2	0	0	7		
			PH2	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		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	2	0	0	0	0	0	0	0	0	0	0	0	2		
6/20	JWR	PM	FB	0	0	0	24	0	0	0	0	0	0	0	0	24		
			PH1	0	0	0	13	0	0	0	0	0	0	0	0	13		
			PH2	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		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	11	47	0	0	0	0	0	0	0	0	0	0	58		
6/21	BC	AM	FB	0	0	2	36	0	0	0	0	0	0	0	0	38		
			PH1	0	0	1	23	0	0	0	0	2	0	0	0	26		
			PH2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW1	11	0	0	0	0	0	0	0	0	0	0	0	11		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	0	0	0	0	0	0	0	1	0	0	0	1		
6/22	GJF	PM	FB	0	0	3	25	0	0	0	0	0	0	0	0	28		
			PH1	0	0	19	3	0	0	0	0	16	6	0	0	44		
			PH2	7	0	2	0	0	0	0	0	1	0	0	0	10		
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW2	0	0	0	0	0	0	0	0	2	0	0	0	2		
			SW3	6	0	0	0	0	0	0	0	2	0	0	0	8		
6/23	JWR	AM	FB	1	0	2	49	0	0	0	0	0	0	0	0	52		
			PH1	0	0	1	8	0	0	0	0	2	11	0	0	22		
			PH2	1	0	1	0	0	0	0	0	0	0	0	0	2		
			SW1	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		
			SW3	2	20	0	0	0	0	0	0	0	0	0	0	22		
6/24	JWR	PM	FB	0	0	0	39	0	0	0	3	0	0	0	0	42		
			PH1	0	2	2	17	0	0	0	0	8	1	0	0	30		
			PH2	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		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	14	66	0	0	0	0	0	0	0	0	0	0	80		
SW4	4	0	0	0	0	0	0	0	0	0	0	0	4					

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
6/18	1828	1673	155	3	1	2	0	0	0	1582	0	0	26
6/19	1793	1552	241	17	10	7	0	0	0	2431	0	0	40
6/20	1810	1655	155	7	5	2	0	0	0	2350	0	0	71
6/21	1314	1055	259	17	7	10	0	0	0	3058	0	0	73
6/22	1759	1566	193	3	2	1	0	0	0	2948	0	0	155
6/23	1912	1724	188	16	5	11	0	0	0	3086	0	0	295
6/24	2384	2218	166	15	10	5	0	0	0	2303	0	0	328
<b>total</b>	<b>12800</b>	<b>11443</b>	<b>1357</b>	<b>78</b>	<b>40</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17758</b>	<b>0</b>	<b>0</b>	<b>988</b>

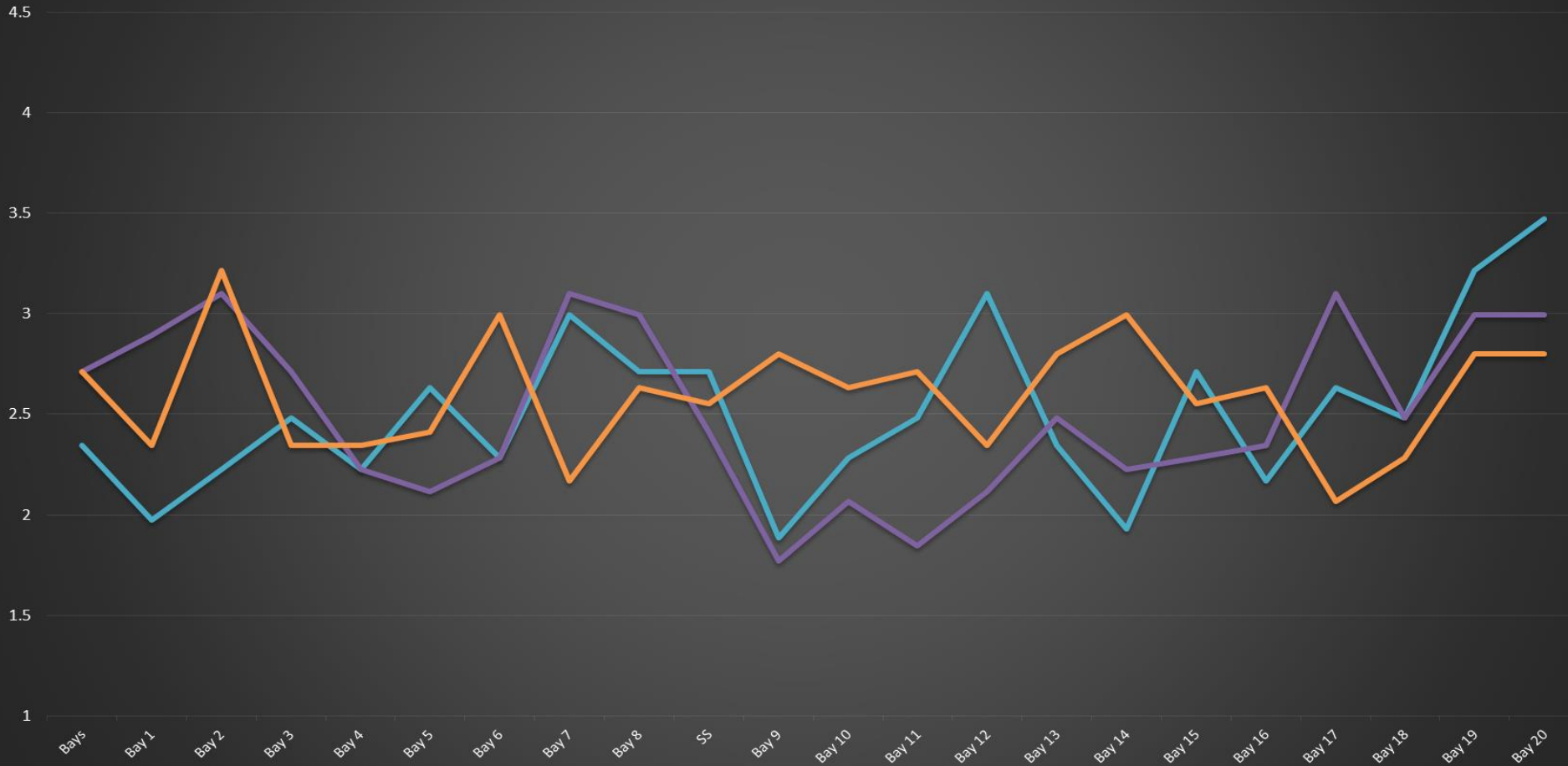
## The Dalles North

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
/18/2017	73	71	2	0	0	0	0	0	0	6	0	0	0
6/19	209	209	0	2	0	2	0	0	0	50	0	0	0
6/20	220	214	6	1	1	0	0	0	0	56	0	0	1
6/21	293	282	11	4	2	2	0	0	0	156	0	0	1
6/22	162	154	8	1	1	0	0	0	0	53	0	0	5
6/23	315	308	7	3	2	1	0	0	0	133	0	0	4
6/24	397	377	20	1	0	1	0	0	0	127	0	0	2
<b>total</b>	<b>1669</b>	<b>1615</b>	<b>54</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>581</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>% North</b>	0.46	0.53	3.8	13.3	13.0	13.6	0.0	0.0	0.0	3.2	0.0	0.0	1.3



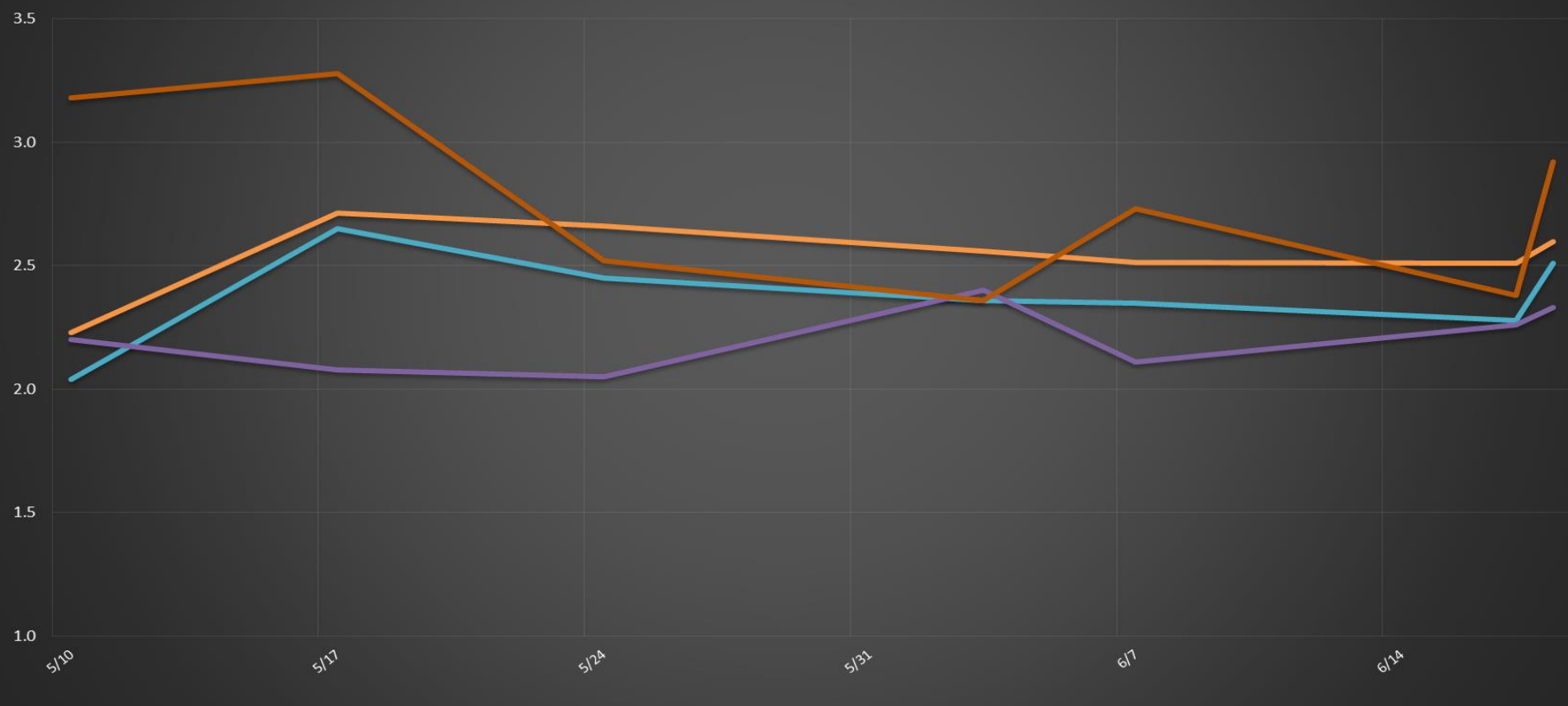
# The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)

7-Jun 17-Jun 18-Jun



## 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 Adult Fish Ladder(s) River/Water Temperatures



— East Count Station — Junction Pool (East Ladder) — North Count Station — North Entrance • Current USGS daily tailwater average ▲ USGS daily tailwater average (2007-2016)



		USGS:
Secchi:		Temperatures
6/18	4.0	Sun 60.0
6/19	2.0	Mon 60.4
6/20	3.0	Tue 60.9
6/21	3.0	Wed 61.3
6/22	4.0	Thurs 61.8
6/23	3.5	Fri 62.6
6/24	4.0	Sat 63.2
	3.4	AVG 61.5

<http://www.nwd-wc.usace.army.mil/tml/documents/ops/temp/201706.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](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	
6/18			1.8	3.4	10.7	10.8	16.6	1.2	13.1	13.1		1.5	9.3	9.3	
	1.4	10.7	1.6	4.2	10.9	10.9	17.4	1.4	12.9	12.9		1.6	9.2	9.2	
	1.4	10.8	1.8	3.8	10.7	10.8	17.0	1.4	12.9	12.9		1.5	9.2	9.3	
6/19			1.6	3.6	10.8	10.8	16.8	1.3	12.9	12.9		1.5	9.3	9.3	
	1.3	10.8	1.8	3.7	10.9	10.8	16.9	1.3	13.1	13.1		1.4	9.4	9.4	
			1.6	4.3	11.5	11.6	17.5	1.4	13.0	12.9		1.4	9.3	9.3	
6/20			1.8	2.6	11.5	11.5	15.8	1.1	13.1	13.1		1.3	9.4	9.4	
	1.4	10.6	1.4	2.2	11.5	11.5	15.4	1.5	11.0	11.0		1.5	8.8	8.8	
	1.4	10.6	1.6	3.0	12.6	12.6	16.2	1.4	11.5	11.5		1.4	8.8	8.8	
6/21			1.4	4.4	12.6	12.6	17.6	1.6	11.4	11.4		1.6	8.8	8.8	
	1.3	10.8	1.6	3.9	12.5	12.5	17.1	1.5	11.8	11.7		1.6	8.8	8.8	
	1.4	10.6	1.5	3.7	12.5	12.5	16.9	1.5	11.4	11.4		1.6	8.7	8.7	
6/22			1.4	4.0	12.5	12.5	17.2	1.5	11.5	11.5		1.5	8.8	8.9	
	1.4	10.8	1.5	3.3	12.4	12.4	16.5	1.5	11.4	11.4		1.5	8.7	8.7	
	1.4	10.8	1.5	3.3	12.4	12.5	16.5	1.5	11.3	11.3		1.5	8.7	8.6	
6/23			1.4	4.0	12.5	12.5	17.2	1.5	11.5	11.5		1.5	8.8	8.9	
	1.4	10.6	1.6	2.2	12.6	12.6	15.4	1.4	11.7	11.7		1.4	8.9	8.9	
	1.5	10.5	1.6	2.2	12.6	13.0	15.4	1.4	11.7	11.7		1.4	8.9	8.9	
6/24			1.4	0.5	12.4	12.4	13.7	1.3	11.6	11.6		1.4	8.8	8.8	
	1.3	10.6	1.6	0.3	12.5	12.4	13.5	1.5	10.4	10.4		1.4	8.8	8.7	
	1.4	10.6	1.4	2.6	12.5	12.4	15.8	1.5	10.4	10.4		1.5	8.8	8.8	
<b>AVG:</b>	<b>1.4</b>	<b>10.7</b>	<b>1.6</b>	<b>3.1</b>	<b>12.0</b>	<b>12.0</b>	<b>16.3</b>	<b>1.4</b>	<b>11.9</b>	<b>11.9</b>		<b>1.5</b>	<b>9.0</b>	<b>9.0</b>	<b>39.5</b>

Fishways are inspected twice daily plus one SCADA inspection.



Pelicans appeared for about a week near east ladder entrance then left.