

# The Dalles Dam Fishway Status Report

6/3/2017

Inspection Period: 05/28/2017-06/03/2017

## THE DALLES DAM



US Army Corps  
of Engineers  
Portland District

The Dalles Project-Fisheries  
P.O. Box 564  
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*Fishways are inspected twice daily plus one SCADA inspection*

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections: 21		Temperature: 58.2 °F
			Comments		Secchi: 3.0 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'	1.4		
Entrance weir N1	0	depth (≥ 8')	10.2		
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 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	depth (≥ 7')	19.1		
East entrance differential	0	1.0' - 2.0'	1.6		
Entrance weir E1	0	No criteria	6.4		
Entrance weir E2	0	depth (≥ 8')	10.6		
Entrance weir E3	0	depth (≥ 8')	10.6		
Collection channel velocity	0	1.5 - 4 fps	2.56		
Transportation channel velocity	0	1.5 - 4 fps	2.36		
North channel velocity	0	1.5 - 4 fps	2.40		
South channel velocity	0	1.5 - 4 fps	2.36		
West entrance differential	0	1.0' - 2.0'	1.6		
Entrance weir W1	0	depth (≥ 8')	12.7		
Entrance weir W2	0	depth (≥ 8')	12.7		
Entrance weir W3	0	depth (>8')	0.0	Closed	
South entrance differential	5	1.0' - 2.0'	1.1	High TW causing transfer of south channel water to west entrance via bypass	
Entrance weir S1	0	depth (≥ 8')	8.9		
Entrance weir S2	0	depth (≥ 8')	8.9		
<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	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	1	per FPP	FERC annual MU exercise		

## OTHER ISSUES:

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

No sea lion sighting since 5/18.

Gull numbers have decreased significantly. USDA hazing by boat downstream of bridge. Refer to avian map and observations.

### **Operations:**

North and east fishladders in full operation.

Spillway open with involuntary spill.

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

Lost E3 HOBOT temperature monitor probe (South Entrance). Replacement on progress.

### **Current Outages;**

MU2 out for hydraulic diagnosis. Return 6/8/17

MU12 out for hydraulic diagnosis and overhaul. Return 6/23/17.

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

### **Maintenance;**

East exit weir electrical panel FCQ7 installation/design resuming engineering design.

PUD crane rake repainting to start soon.

Rebuilding spare entrance weir gearbox.

Planning crane pad for north ladder, and sturgeon tank modifications for improved fishladder dewatering fish salvage.

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

Fish related /non-fish funded items; Spillway crane 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* - 77 removed this week, 178 through 6/4, mostly from west powerhouse tailrace.

*AWS construction* - all work complete for season 1. Planning for season 2 and for 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 13-18. Lower west powerhouse asphalt next (FPOM approved).

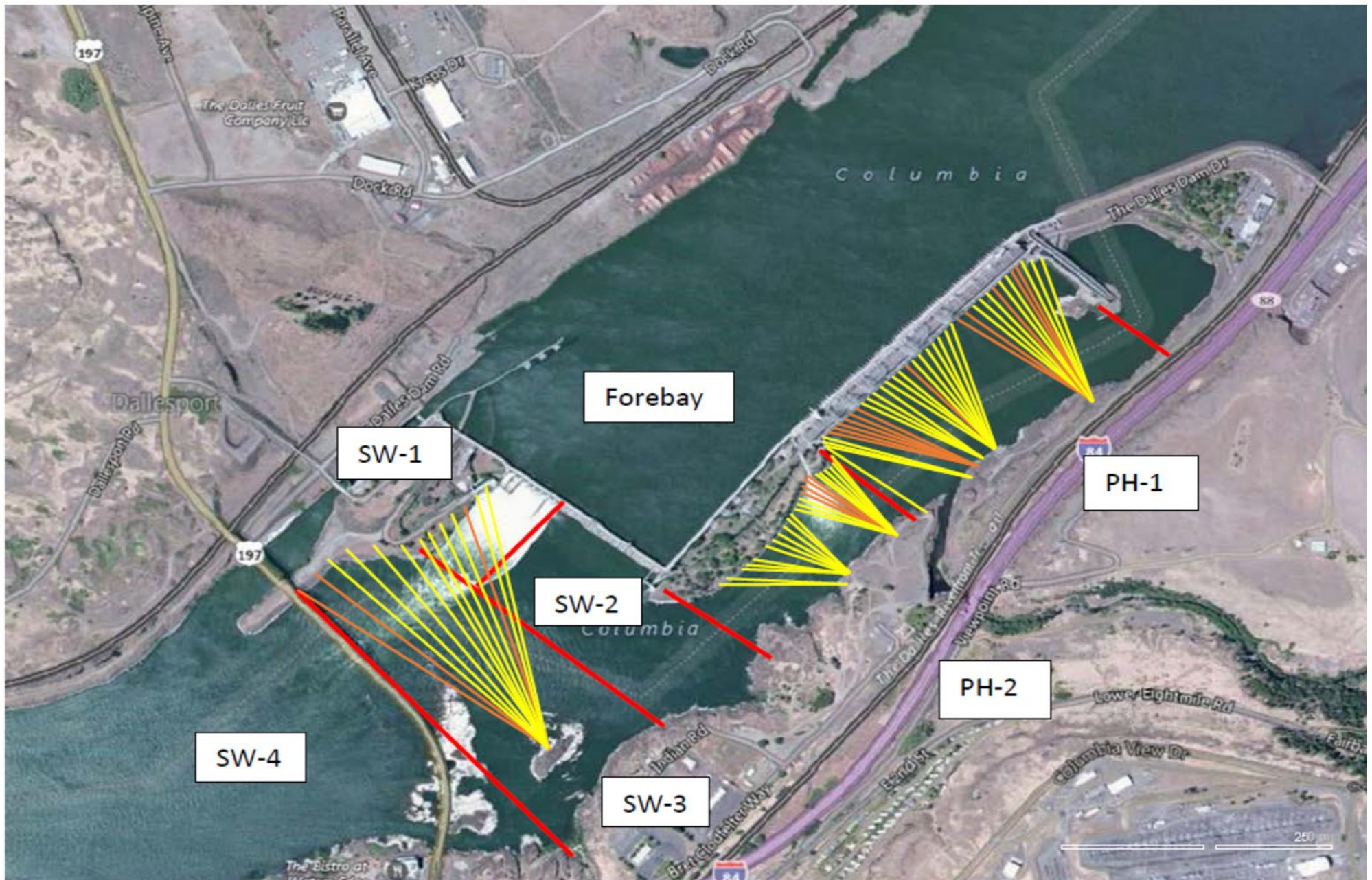
*Fish unit breaker replace*.- Manufacture this summer. Install fall 2017. Switchover Jan 2018.

*Fish unit rehab* - Phase 1A report Jan 2018. Award 2020. Completion 2022. Possible increase flow capacity for redundancy. 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

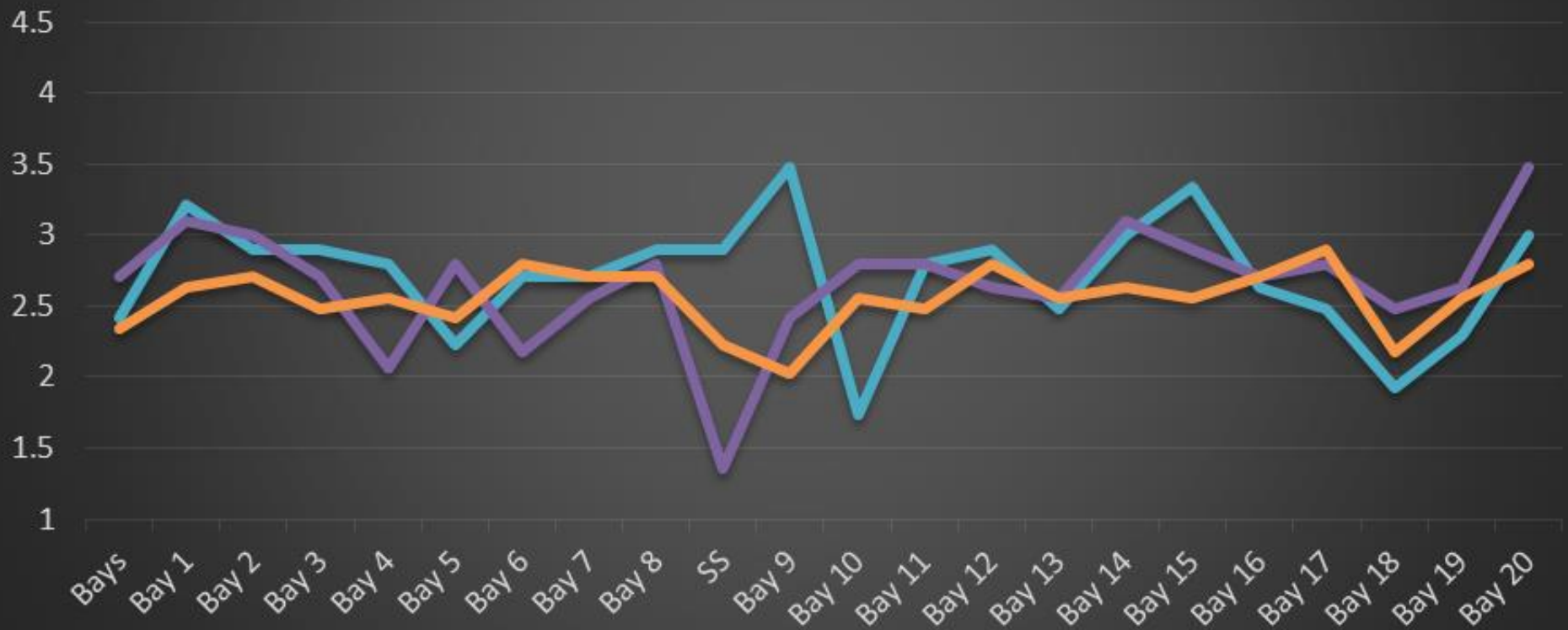
Date	observer	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Grebe		Pelican		Other		Total birds in zone	Notes		
				F	NF	F	NF	F	NF	F	NF	F	NF	F	NF				
5/28	JWR	AM	FB	0	0	1	47	0	0	0	0	0	0	0	0	0	48		
			PH1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	5	
			PH2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
			SW3	18	0	0	0	0	0	0	0	0	0	0	0	0	0	18	
5/29	JWR	PM	FB	0	0	3	54	0	0	0	0	0	0	0	0	0	57		
			PH1	0	0	2	6	0	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	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
			SW3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
5/30	JWR	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	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	
5/31	GJF	PM	FB	0	0	2	47	0	0	0	0	0	0	0	0	0	49		
			PH1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	
			PH2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	14	
			SW3	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
6/1	GJF	AM	FB	0	0	2	44	0	0	0	0	0	0	0	0	0	46		
			PH1	0	0	3	8	0	0	0	0	0	0	0	0	0	0	11	
			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	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
			SW3	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
6/2	GJF	PM	FB	0	0	4	21	0	0	0	0	0	0	0	0	0	25		
			PH1	1	1	3	6	0	0	0	0	0	0	0	0	0	0	11	
			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	22	0	0	0	0	0	0	0	0	0	0	0	0	0	22	
			SW3	51	0	0	0	0	0	0	0	0	0	0	0	0	0	51	
6/3	GJF	AM	FB	0	0	2	51	0	0	0	0	0	0	0	0	0	53		
			PH1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			PH2	4	0	0	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	50	0	0	0	0	0	0	0	0	0	0	0	0	0	50	
			SW3	42	0	0	0	0	0	0	0	0	0	0	0	0	0	42	
SW4	84	0	0	0	0	0	0	0	0	0	0	0	0	0	84				

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



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

17-May 24-May 3-Jun



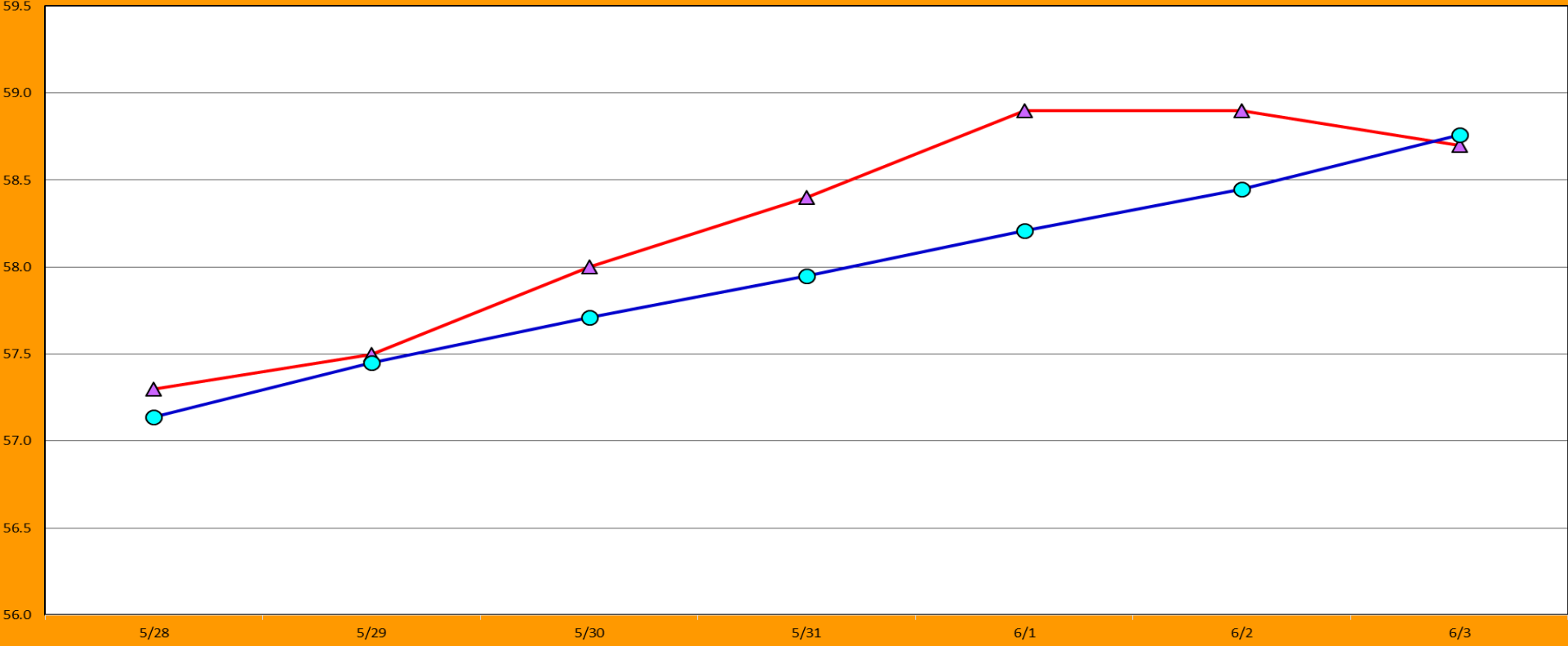
## The Dalles Dam Average Velocities (In criteria 1.5 - 4.0 fps)

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



# The Dalles Dam River Temperatures

Current USGS daily tailwater average      USGS daily tailwater average (2007-2016)





Secchi:		USGS: Temperatures
3.0	Sun	57.3
3.0	Mon	57.5
3.0	Tue	58.0
3.0	Wed	58.4
3.0	Thurs	58.9
3.0	Fri	58.9
3.0	Sat	58.7
3.0	AVG	58.2

<http://www.nwd-wc.usace.army.mil/tml/documents/ops/temp/201705.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	
5/28			1.6	5.7	11.2	11.2	19.2	1.5	12.2	12.2		1.4	9.6	9.6	56.3
	1.3	11.1	1.5	5.8	11.1	11.1	19.3	1.5	12.4	12.4		1.6	9.5	9.5	
	1.4	10.8	1.8	4.8	11.1	11.1	18.3	1.4	12.2	12.2		1.5	9.5	9.5	
5/29			1.6	4.6	11.7	11.5	18.1	1.5	12.2	12.2		1.4	9.6	9.6	54.4
	1.5	10.7	1.6	4.6	12.0	12.0	18.1	1.5	12.3	12.3		1.5	9.5	9.5	
	1.4	10.8	1.5	4.8	11.9	11.9	18.3	1.5	12.3	12.3		1.4	9.6	9.6	
5/30			1.4	5.8	12.0	11.9	19.3	1.4	12.4	12.4		1.5	9.5	9.4	55.5
	1.5	10.8	1.6	6.4	11.6	11.6	19.9	1.6	12.3	12.3		1.5	9.5	9.5	
	1.5	10.8	1.4	6.4	11.8	11.8	19.9	1.5	12.4	12.4		1.7	8.7	8.7	
5/31			1.7	6.6	12.0	11.9	20.1	1.7	12.5	12.5		1.2	9.2	9.2	53.6
	1.4	10.9	1.6	7.2	12.1	12.1	20.7	1.7	12.6	12.7		1.3	11.1	11.1	
	1.5	10.8	1.5	7.6	12.1	12.0	21.1	1.7	12.3	12.3		0.5	8.8	8.8	
6/1			1.7	7.2	10.0	10.1	20.7	1.9	12.0	12.0		1.0	8.1	8.1	53.3
	1.4	10.8	1.6	7.5	8.9	8.9	21.0	1.6	13.6	13.6		0.8	8.1	8.1	
	1.5	1.9	1.5	7.3	9.0	9.0	10.8	1.6	13.6	13.6		1.0	8.1	8.1	
6/2			1.6	7.1	9.0	8.9	20.6	1.6	13.6	13.6	1.1	8.0	8.0	54.3	
	1.4	10.8	1.8	6.7	9.0	9.0	10.2	1.6	13.5	13.5	1.4	8.1	8.1		
	1.4	10.8	1.7	7.0	9.1	9.0	20.5	1.6	13.6	13.6	1.2	8.0	8.1		
6/3			1.0	8.5	8.9	8.9	22.0	1.7	13.6	13.6	0.2	8.2	8.2	56.9	
	1.4	10.8	1.9	6.2	9.3	9.4	21.0	1.8	12.3	12.3	0.5	8.1	8.1		
	1.4	10.8	1.8	6.4	9.4	9.4	21.2	1.9	12.2	12.2	0.3	8.1	8.1		
<b>AVG:</b>	<b>1.4</b>	<b>10.2</b>	<b>1.6</b>	<b>6.4</b>	<b>10.6</b>	<b>10.6</b>	<b>19.1</b>	<b>1.6</b>	<b>12.7</b>	<b>12.7</b>		<b>1.1</b>	<b>8.9</b>	<b>8.9</b>	<b>54.9</b>

Fishways are inspected twice daily plus one SCADA inspection.