

# The Dalles Dam Fishway Status Report

**Date:** 9/23/2013  
**Inspection Period:** 9/15 to 9/21/2013

## THE DALLES DAM



**US Army Corps  
of Engineers**  
Portland District

The Dalles Project-Fisheries  
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Fishways are inspected twice daily. Additional daily monitoring done via automation system in fisheries office.

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections: 21	Temperature: 70.7 F
			Comments	Secchi: 5.3 Ft.
<b>NORTH FISHWAY</b>				
Exit differential	0	≤ 0.5'		
Count station differential	0	≤ 0.3'	Window cleaned on 9/20.	
Weir crest depth	0	1.0' ± 0.1'		
Entrance differential	0	1.0' - 2.0'	Average 1.2	
Entrance weir N1	0	depth (≥ 8')	Average 9.6	
Entrance weir N2		Closed	Bulkhead installed.	
PUD Intake differential	3	≤ 0.5'	0.8' - 1.4' due to milfoil buildup. Maintenance raked 9/16.	
<b>EAST FISHWAY</b>				
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. Window cleaned 9/20.	
Weir crest depth	0	1.0' ± 0.1'		
Junction pool weir JP6	0	depth (≥ 7')	Manually adjusted as needed.	
East entrance differential	0	1.0' - 2.0'	Average 1.5	
Entrance weir E1	0	No criteria	Average 9.4	Manually adjusted.
Entrance weir E2	0	depth (≥ 8')	Average 13.2	
Entrance weir E3	0	depth (≥ 8')	Average 13.1	
Collection channel velocity	0	1.5 - 4 fps	Average 2.1	See <b>Velocities</b> 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 2.9	
South channel velocity	0	1.5 - 4 fps	Average 3.2	
West entrance differential	0	1.0' - 2.0'	Average 1.4	Daily differentials & weir depths, see <b>AVGS</b> tab.
Entrance weir W1	0	depth (≥ 8')	Average 8.1	
Entrance weir W2	0	depth (≥ 8')	Average 8.1	
Entrance weir W3	0	No criteria	Average closed	
South entrance differential	1	1.0' - 2.0'	Average 1.1	0.9' due to low tailwater.
Entrance weir S1	2	depth (≥ 8')	Average 8.0	7.9' due to low tailwater.
Entrance weir S2	3	depth (≥ 8')	Average 8.0	7.9' due to low tailwater.
<b>JUVENILE PASSAGE</b>				
Sluiceway operation	0	units 1,8,17	MU18 out of service; sluice gates closed. MU17 in service; sluiceways 17-2, 17-3 open.	
Turbine trashrack drawdown	0	<1.5', wkly	Range: 0.0' - 0.4'	
Spill volume	0	40%, 24hr	Spilling 3 kcfs for attraction water for the north fish ladder.	
Spill Pattern	0	per FPP		
Turbine Unit Priority	1	per FPP	Out of criteria; BPA testing Main Units.	
Turbine 1% Efficiency	0	per FPP		

**OTHER ISSUES:****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:**

Main Unit 15, MU16, and transformer T8 limited operation through ~ 2016.

MU18 out of service 0600 8/26/2013 to 1700 10/3/2013 for digital governor installation.

MU15 out of service 0700 9/17/2013 to 1700 10/31/2013 for five year overhaul.

Spillway out of service 0728 hrs. 9/17 for dive inspection of spillwall. Diving was done during day light hours and returned to service 1700 hrs. 9/18.

Spillbay 1 opened to 3kcfs to increase attraction water to the north fish ladder 0500-1200 on 9/14-16. Appeared to be a possible increase to north ladder. Data will be evaluated for final conclusion.

Gatewell drawdown completed 9/16. Values ranged from 0.0' - 0.4' and were within criteria.

Calibration completed on 9/9. Maintenance corrected minor deficiencies.

**Maintenance:**

Fishway winter maintenance dewatering schedule out for review. East fishway Dec to mid Jan. North fishway mid Jan through Feb.

Winter maintenance items include; resecure west entrance diffuser grating, rehab east exit weirs, remove north ladder vegetation.

**Studies:**

**PIT** - Temporary Thin Wall PIT tag Antenna continues to work successfully. Most likely to be permanent option.

**EFL** - Current design 10' intake pipe near fish lock. PDT progress continues. Install planned for 2015.

**PUD** - "Freedom" turbine proposal out for review. Modification of original FERC license underway. Public tour of site location occurred 9/11.

**Lamprey** - Planned lamprey passage improvements; weir orifice floor plating in lower ladders for attachment through high velocity zones, possible holding tank for tribal collected lamprey.

**Research/Contractors:**

Tribal lamprey trap collection at east count station completed for season. All equipment removed from project. Collected lamprey used to reintroduce into various tributaries to reestablish lamprey populations. Total The Dalles catch were; Yakama Nation - 198, Nez Perce - 54, Umatilla - 97.

WDFW Columbia River Northern Pikeminnow Management Program Dam Angling continues with low catch rates. Most fishing primarily from powerhouse deck. Dam angling effort hours - 27.75, Total NPM - 35. Fishing scheduled through 9/30.

Inland Avian Predation Work Group (IAPWG) meeting 9/16.

Derelict USGS I-beams on pier noses removed by project maintenance. Plans to remove remaining pier nose antennas this winter by dive.

USFWS plans to remove all of their old equipment this winter dewatering and maintenance period from the fish ladders.

Second phase utilizing goats to remove vegetation around north fish ladder scheduled for 9/30 to 10/4. First attempt had limited results.

One more set of derelict Vertical Barrier Screens (VBS) from 90's research remains in MU 12 gatewell slot. ROV inspection verified location.

VBS previously removed are currently stored on the north side.

University of Idaho adult RT new antennas both fish ladders completed and operating. Plans to clean up unused antennas this winter.

Normandeau fish counters performing video counting through 9/30 and visual counting to 10/31. No winter time counting this year.

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

DART The Dalles Adult Ladders Daily Usage with Spill Percent and Outflow

Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye				Coho				Jack Coho				Lamprey				Spill Pct [Right]	Outflow (kcfs)
	Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		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	#						
9/15/2013	93	19681	7.3	1558	83	1207	17	246	87	3304	14	515	82	1121	18	240	0	0	0	0	90	215	10	25	79	26	21	7	71	20	29	8	1.2	72.6
9/16/2013	90	11120	10	1282	93	1470	7.4	118	82	2050	18	456	84	701	16	137	0	0	0	0	89	251	11	31	63	12	37	7	76	19	24	6	1.0	83.8
9/17/2013	98	15614	2.1	337	97	2593	2.7	73	96	2116	4.3	94	94	650	6.3	44	0	0	0	0	96	415	4.2	18	15	2	85	11	67	8	33	4	0.0	112.7
9/18/2013	98	19962	1.9	395	97	2042	3.1	65	95	1613	5.2	88	95	529	5	28	0	0	0	0	92	116	7.9	10	96	25	3.8	1	83	10	17	2	0.0	84.0
9/19/2013	99	22478	1	222	99	2628	1.4	37	97	1934	3.5	71	96	590	4.5	28	0	0	0	0	97	190	2.6	5	95	19	5	1	86	6	14	1	0.0	98.2
9/20/2013	99	21372	0.8	172	98	1638	1.9	32	95	2343	4.6	114	95	745	4.6	36	0	0	0	0	92	241	7.7	20	100	29	0	0	67	10	33	5	0.0	105.9
9/21/2013	95	16069	5.4	924	98	4309	2	90	91	3093	9.2	313	92	989	8.4	91	0	0	0	0	96	625	4	26	93	54	6.9	4	78	7	22	2	0.0	75.6
<b>Weekly Total</b>		<b>126296</b>		<b>4890</b>		<b>15887</b>		<b>661</b>		<b>16453</b>		<b>1651</b>		<b>5325</b>		<b>604</b>		<b>0</b>		<b>0</b>		<b>2053</b>		<b>135</b>		<b>167</b>		<b>31</b>		<b>80</b>		<b>28</b>		
Date	Chinook		Jack Chinook		Steelhead		Steelhead Wild		Sockeye		Coho		Jack Coho		Lamprey		Spill Pct	Outflow																
YTD	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct																		
	96.3	3.7	96	4	90.9	9.1	89.8	10.2	0	0	93.8	6.2	84.3	15.7	74.1	25.9																		

NOTES:

1. The species passage percent is not calculated for either ladder on a day, if either the Right Ladder or Left Ladder species count is: negative or null for the day.
2. Ladder orientations reference the side of the river when facing downstream.
3. Data Provided Courtesy of U.S. Army Corps of Engineers

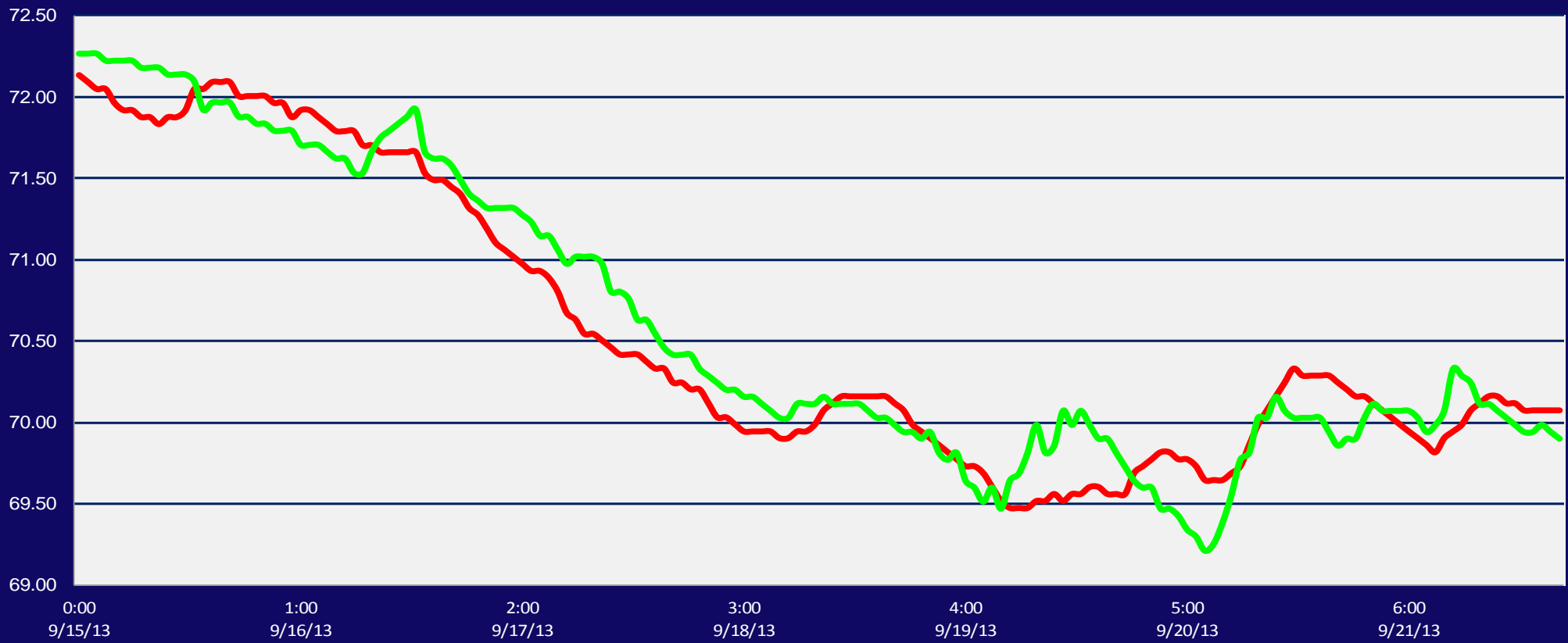
blue indicates attraction spill through bay 1 test to increase north passage use

# The Dalles Dam Adult Fish Ladder River/Water Temperatures

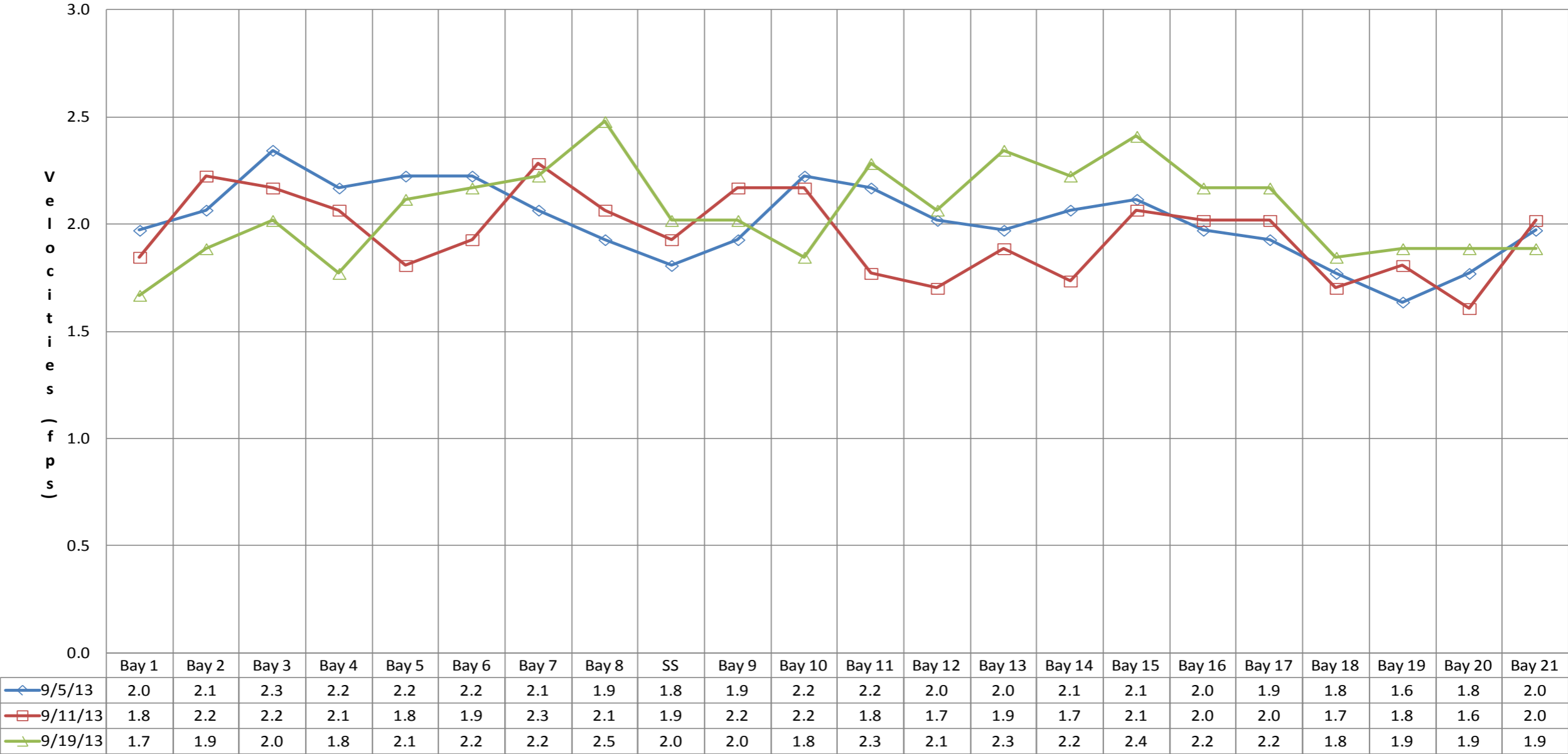
°F

East Ladder

North Ladder



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





# The Dalles Dam Avian Zones

Washington Shore

FB1

PH-T1

PH-T2

SW-T1

PH-T3

SW-T3

SW-T2

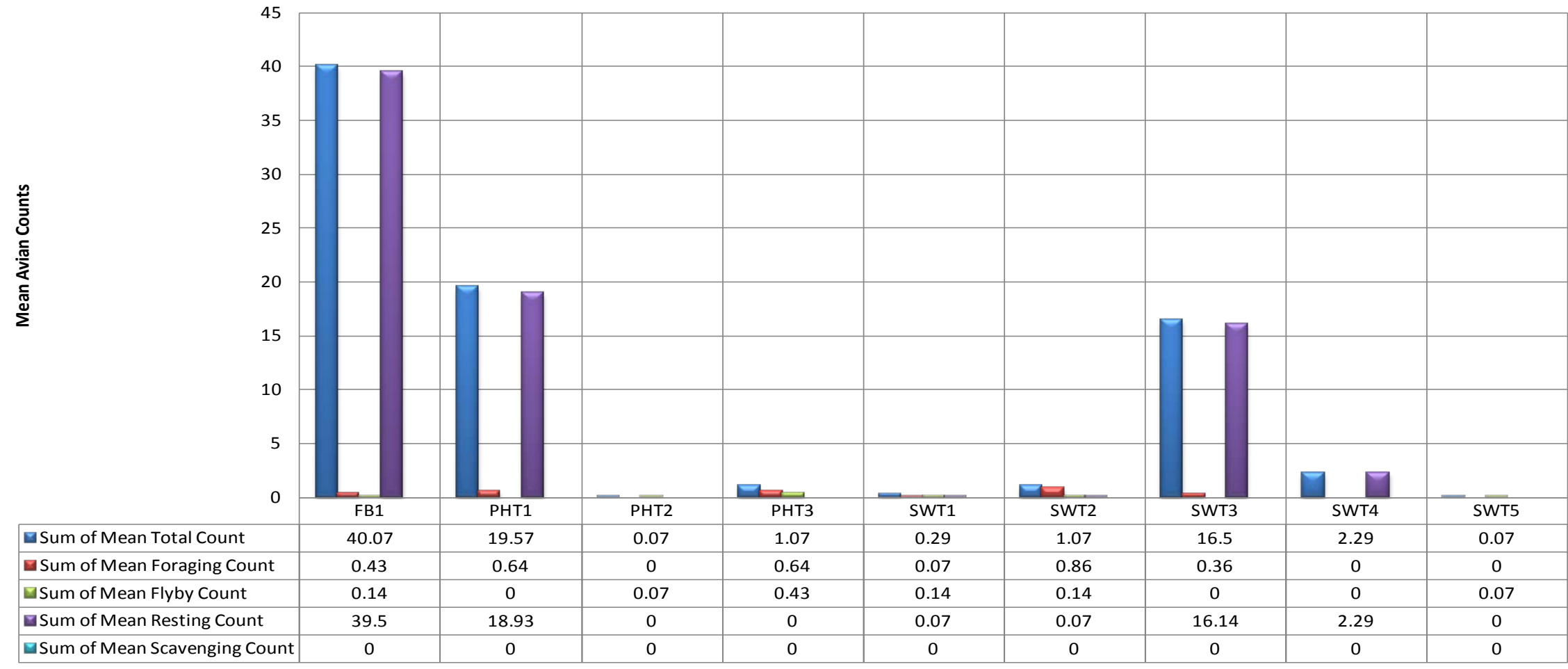
SW-T4

SW-T5

Oregon Shore

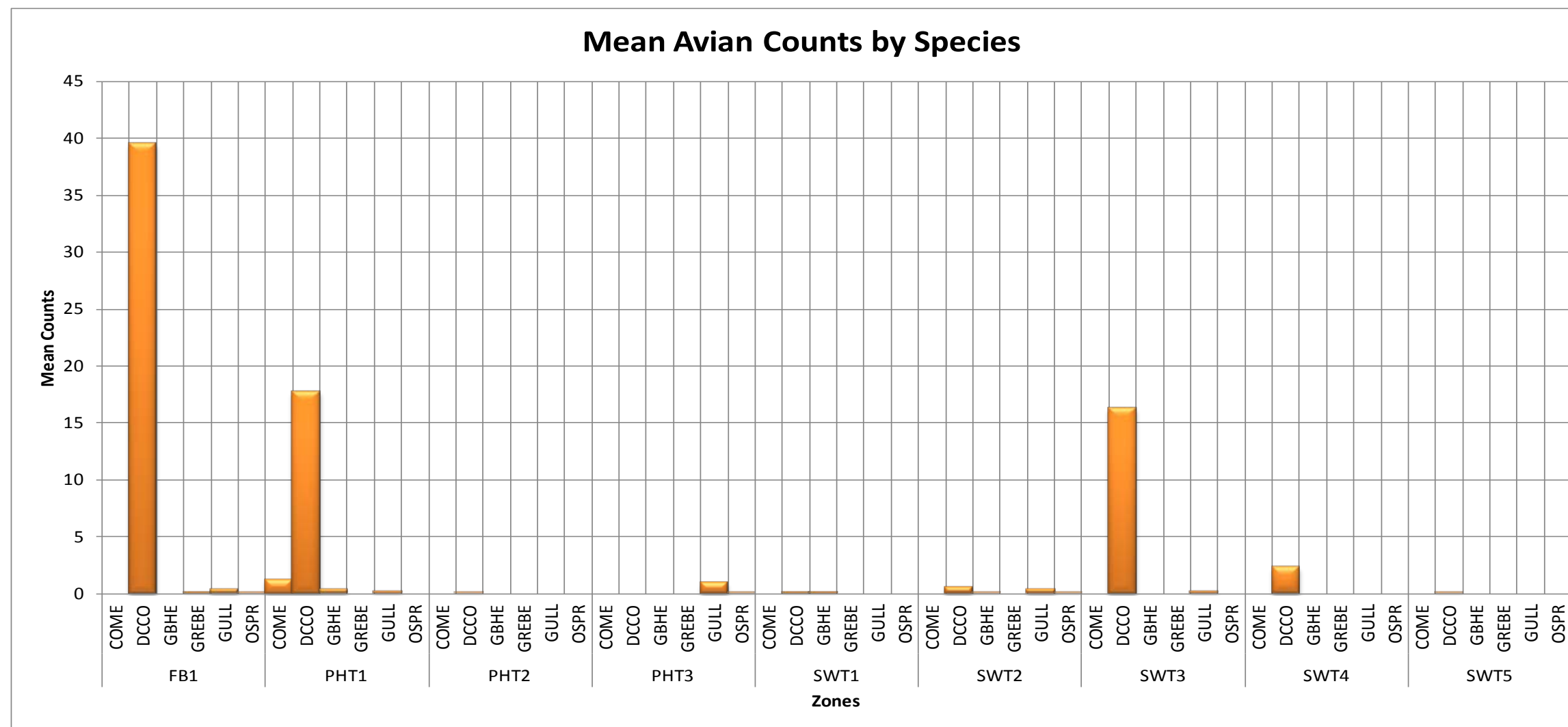


### Mean Avian Counts by Behavior



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

### Mean Avian Counts by Species



Temp:			Secchi:	
	72.2	SUN		5.0
	71.8	MON		5.0
	70.8	TUES		5.5
	70.1	WED		5.5
	69.8	THUR		5.5
	69.9	FRI		5.5
	70.2	SAT		5.0
AVG:	70.7	AVG:		5.3

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

= out of criteria

Date:	North Fish Ladder		East Fish Ladder					East Fish Ladder			South Entrance			KCFS	
	North Entrance		East Entrance					West Entrance			South Entrance			% Spill	
	Differential	N1 Depth	Differential	E1Depth	E2 Depth	E3 Depth	JP 6	Differential	W1Depth	W2 Depth	W3 Depth	Differential	S1 Depth	S2 Depth	
15-Sep-13	1.3	9.6	1.4	10.2	13.6	13.5	7.9	1.2	8.2	8.2		1.0	8.1	8.1	
15-Sep-13	1.3	9.6	1.5	10.6	13.6	13.6	8.3	1.3	8.2	8.2		0.9	8.2	8.1	3.9
15-Sep-13			1.4	10.2	13.4	13.4		1.2	8.2	8.2		1.0	8.2	8.1	
16-Sep-13	1.2	9.6	1.2	10.7	13.4	13.3	7.4	1.3	8.0	8.0		1.1	8.0	8.0	3.2
16-Sep-13	1.2	9.5	1.4	9.1	13.0	13.4	7.7	1.4	8.1	8.1		1.2	7.9	7.9	
16-Sep-13			1.3	10.8	13.5	13.6		1.3	8.2	8.2		1.1	8.0	8.0	
17-Sep-13	1.3	9.7	1.6	9.3	13.0	13.2	8.5	1.4	8.2	8.3		1.2	8.0	8.0	
17-Sep-13	1.3	9.5	1.6	9.2	13.1	13.5	9.0	1.5	8.1	8.1		1.2	8.0	8.0	
17-Sep-13			1.5	9.2	13.1	13.5		1.3	8.1	8.2		1.1	8.1	8.1	
18-Sep-13	1.2	9.5	1.6	11.0	13.1	12.0	7.9	1.5	8.0	8.1		1.2	8.0	8.0	
18-Sep-13	1.3	9.5	1.7	10.9	13.4	12.0	8.0	1.4	8.2	8.1		1.0	8.1	8.1	
18-Sep-13			1.6	9.1	13.0	12.3		1.3	8.1	8.2		1.1	8.0	8.0	
19-Sep-13	1.2	9.6	1.4	10.0	13.0	13.0	7.8	1.3	8.1	8.2		1.0	8.2	8.2	
19-Sep-13	1.2	9.7	1.5	8.0	13.0	13.0	7.8	1.4	8.1	8.2		1.2	8.0	7.9	
19-Sep-13			1.4	11.1	13.4	13.5		1.3	8.1	8.2		1.1	7.9	7.9	
20-Sep-13	1.2	9.7	1.6	8.0	12.9	13.0	8.1	1.5	8.0	8.0		1.1	8.0	8.1	
20-Sep-13	1.2	9.7	1.6	8.0	13.0	13.0	8.2	1.4	8.1	8.2		1.1	8.1	8.1	
20-Sep-13			1.5	8.1	13.0	13.1		1.4	8.2	8.3		1.1	8.0	8.1	
21-Sep-13	1.2	9.7	1.5	7.9	13.1	12.9	8.0	1.5	8.0	8.0		1.1	7.9	8.0	
21-Sep-13	1.3	9.5	1.5	8.1	13.0	13.1	8.0	1.4	8.0	8.1		1.1	7.9	8.0	
21-Sep-13			1.6	7.9	12.9	12.9		1.6	8.0	8.0		1.1	8.0	8.1	
<b>AVG:</b>	1.2	9.6	1.5	9.4	13.2	13.1	8.0	1.4	8.1	8.1	closed	1.1	8.0	8.0	

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





Dive inspection of spillwall to check for erosion.