2013 ANNUAL FISHWAYS STATUS REPORT

JOHN DAY DAM

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2013 FISHWAY OPERATING SCHEDULE

	MONTHS											
DESRIPTION	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
North Adult Fishway												
Dewatered for winter maintenance	**11/05/12 – 3/12/13**											
In full operation with attraction water				**4/1-11/29**								**12/19-12/31**
Attraction water off half day for ROV								**8/1**				
Dewatered for winter maintenance												**12/2 - 12/19**
South Adult Fishway												
In full operation with attraction water	**1/1 - 1/25/13**				**&**			**2/13 - 11/29/13**				
Attraction water off half day for ROV								**8/1**				
Dewatered for winter maintenance	**1/28- 2/12**											**12/2-12/31**
Smolt Monitoring Facility												
Dewatered for winter maintenance	**11/25/12 - 3/30/13**											
In full operation w/juvenile sampling.				**3/31-7/24**								
Limited sampling; water temp> 70F								**7/12- 9/15**				
Bypass for full flow PIT tag detection									**9/16-11/26**			
System dewatered for winter.												**12/17- 12/31**
Juvenile Bypass System												
1/3 gatewell orifice open, rotate 2X/wk	**1/1 - 3/31**											**12/19-12/31**
Full operation with all STSs				**4/1 - 12/15 (for kelts in December)**								
Spillway with TSWs												
Closed	**1/1 - 4/9**											
30% & 40% per FPP schedule				**4/10 - 8/31**								
Bay 2 only, 1.5 KCFS daylight hrs for NFL Attraction.									**9/1 - 11/30**			
Closed.												**12/1-12/31**

FISHWAY DEWATERING PROCEDURES

Bulkheads are installed and drain valves open to dewater various areas of fishways. Fisheries personnel enter these areas to salvage fish that become stranded and /or trapped in shallow pools behind weirs. Minimal handling of fish is applied. Fish that are reluctant to vacate an area are captured and transported to the forebay or tailwater, depending on circumstances such as fish species, age class and stress levels. Follow up inspections are made to account for possible missed fish. Efforts are made to provide continual water supply during the entire operation to reduce fish stranding. Fishway areas not included on this list are inspected by Remote Operated Vehicle (ROV.)

John Day Dam 2013 Fish Ladder Dewatering Results

Key:a=adult, j=juvenile catfish=ca, mountain whitefish=mw, common carp=cc, sucker species=su, bass=ba, blue gill=bg

Date	Event	Chinook	Steelhead	Sockeye	Coho	Lamprey	Shad	Sturgeon	Other	Comments	Morts	Cause
1/28/13	SFL upper	0	2 j	0	0	0	0	0	0	Excellent	0	
12/4/13	NFL upper	0	2 j	0	0	0	0	2 a	0	Excellent	0	
										Condition		

Smolt Monitoring Facility 2013 Dewatering Results

Key:a=adult, j=juvenile catfish=ca, mountain whitefish=mw, common carp=cc, sucker species=su, bass=ba, sculpin=sp

Date	Event	Chinook	Steelhead	Sockeye	Coho	Lamprey	Shad	Sturgeon	Other	Comments	Morts	Cause
01/10/13	JBS Channel	0	0	0	0	0	0	0	0	No Fish	0	
12/17/13	SMF -PDS	10a	30a	0	0	120a	50a	0	20a cats	Excellent condition	0	

TURBINE DEWATERING PROCEDURES

Turbine dewatering for routine maintenance usually involves low numbers of fish, due to operational guidelines. If a turbine unit fails, operational guidelines cannot always be followed, which usually results in higher numbers of fish entrapment. Removal of fish from these areas has a greater fish stress risk due to handling. Procedures are continually analyzed to determine the best method for preventing fish stress or loss. Fish are removed from scroll case and draft tubes by fish bags. If numbers of fish are higher than two bags, transport tanks are placed in the draft tube gallery for transport by crane. Fish are released to tailwater either with bag and rope or tank and crane.

John Day Dam 2013 Turbine Dewatering Results

Key: scroll case=sc, draft tube=dt, catfish=ca, steelhead=sh,shad=sd, common carp=cc, sucker species=su, bass=ba, crappie=cp

Date	Event	Chinook	Steelhead	Sockeye	Coho	Lamprey	Shad	Sturgeon	Other	Comments	Morts	Cause
1/7/2013	MU6 sc									No Fish	0	
1/9/2013	MU6 dt									No Fish	0	
1/28/2013	MU9 sc						12a			Old morts	12	
1/29/2013	MU9 dt									No Fish	0	
2/25/2013	MU7 sc									No Fish	0	
2/26/2013	MU7 dt									No Fish	0	
10/16/2013	MU3 sc								1 lrg ct		0	
10/16/2013	MU3 dt							3a	48 ct		0	

2013 - 2010 FISHWAY INSPECTION COMPARISON

Two adult fishway inspections are conducted per day during the adult fish passage season (March 1 to November 31). One adult fishway inspection is conducted per day during the non- passage season. Items shown in *italics* are inspected once per day. All other items are inspected during every fishway inspection. Guidelines are provided by the COE Fish Passage Plan. Weekly fishway status reports are provided throughout the year. Inspections of the John Day Smolt Monitor Facility are made once per two hours, 24 hours per day during the juvenile sampling season (April 1 to Sept 15.) SMF status reports are included in the weekly fishway status report. Increased or continual problem areas indicated in red.
% OUT CRITERIA IS ROUNDED OFF TO THE NEAREST TENTH OF A PERCENT.

TOTALS FOR :	2013		2012		2011		2010	
	Total #	% OOC	Total #	% OOC	Total #	% OOC	Total #	% OOC
John Day Dam								
Number of inspections	634		622		622		639	
NORTH FISHWAY								
Exit differential	0	0.0%	4	0.6%	0	0.0%	1	0.2%
Exit regulating weirs position	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Count station differential	0	0.0%	2	0.3%	0	0.0%	0	0.0%
Weir crest depth	0	0.0%	2	0.3%	0	0.0%	0	0.0%
Entrance differential	3	0.5%	26	4.2%	1	0.2%	9	1.4%
Entrance weir EW1 (now fixed weir)	na	Na	na	na	4	0.6%	35	5.5%
Entrance weir EW2 (eliminated)	na	Na	na	na	0	0.0%	0	0.0%
SOUTH FISHWAY								
Exit differential	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Exit regulating weirs position	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Count station differential	0	0.0%	0	0.0%	0	0.0%	1	0.2%
Weir crest depth	0	0.0%	0	0.0%	0	0.0%	0	0.0%
South entrance differential	2	0.3%	11	1.8%	4	0.6%	4	0.6%
Entrance weir SE1	2	0.3%	10	1.6%	13	2.1%	17	2.7%
Collection channel velocity	0	0.0%	0	0.0%	5	0.8%	0	0.0%
Bay 1 differential	1	0.2%	10	1.6%	4	0.6%	3	0.5%
N.entrance PH(Bay 19)differential	3	0.5%	10	1.6%	8	1.3%	2	0.3%
Entrance weir NE1	5	0.8%	14	2.3%	33	5.3%	16	2.5%
Entrance weir NE2	6	0.9%	13	2.1%	30	4.8%	3	0.5%
JUVENILE PASSAGE								
Forebay/bypass conduit differential	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Submersible traveling screens	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Turbine trashrack drawdown	0	0.0%	0	0.0%	22	3.5%	0	0.0%
Vert barrier screen drawdown	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Spill volume	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Spill pattern	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Turbine Unit Priority	0	0.0%	23	3.7%	0	0.0%	34	5.3%
Turbine 1% Efficiency	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Numbers in RED represent increase of OOC occurrence over the previous year. See discussion below.

Discussion

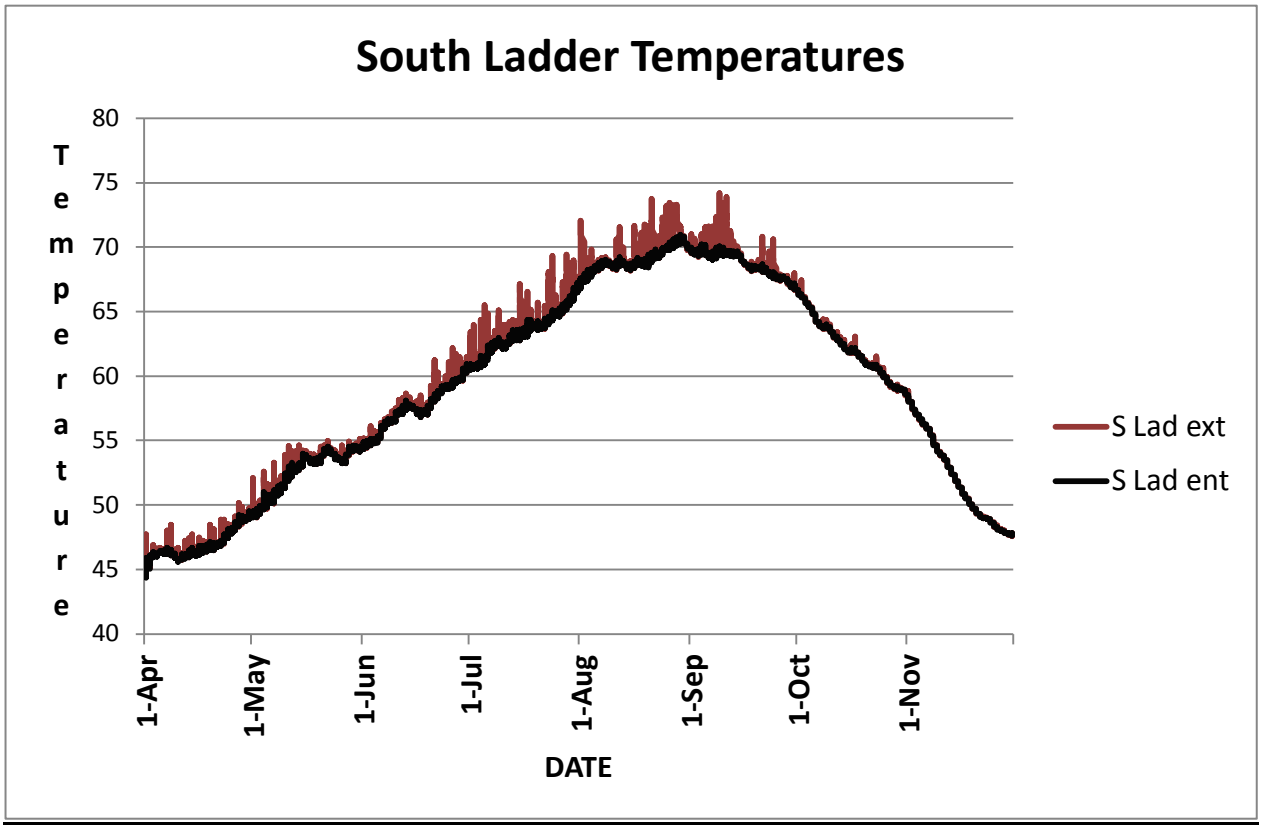
2013 was a very good year for the JD fish passage as all JD Fishways performed well and without a major failure. There has been a significant improvement overall, for all JD fish passage FPP criteria in 2013. They clearly demonstrate that all JD fish passage's control and regulating devices have been properly maintained, operated and monitored. All OOC events were sporadic and without any detrimental impact on fish passage at JD Dam; the highest % OOC occurred at N1 & N2 (0.8 and 0.9 %) during late summer/fall periods of low tailrace levels. Kudos to all JD Maintenance, Operations and Fisheries personnel for their dedication and hard work to improve fish passage at JD Dam.

FISH COUNTING

Visual fish counting was conducted 4/1/13 to 10/31/13 by contract with Normandeau Associates Inc. Counts were sent electronically directly to the web's data base. Video counting was conducted at JD 11/1 to 12/31/13 at both JD ladders, except when they were dewatered for winter maintenance.

WATER QUALITY

Daily River Temperature was read at JD south forebay's electronic display during the daily fishway inspections. Additionally, the Water Temperatures were collected in both fish ladders at the entrance and exits with HOBO data loggers by JD Fisheries, 1 April – Nov. 30 (Fig. 4.)
Water Clarity was read by Secchi disc at one counting station during the daily fishway inspections.



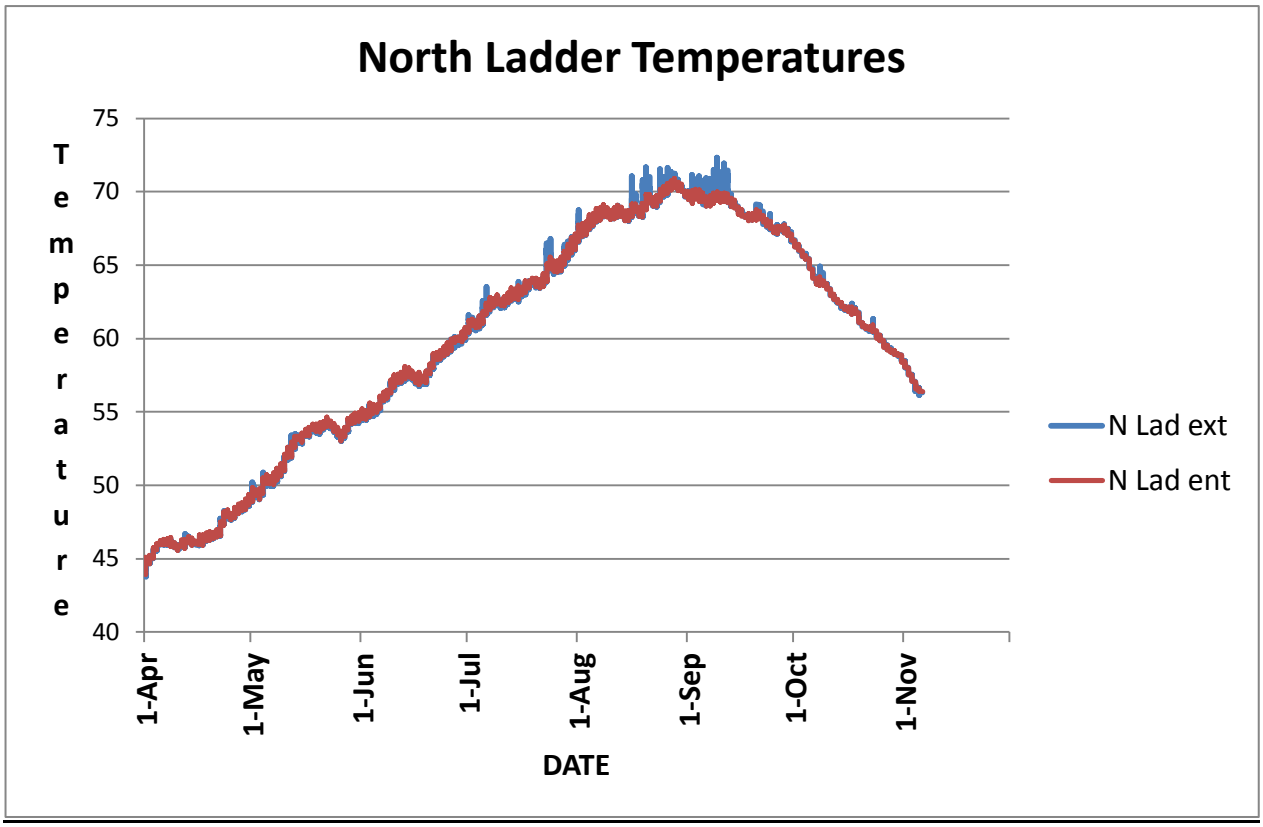
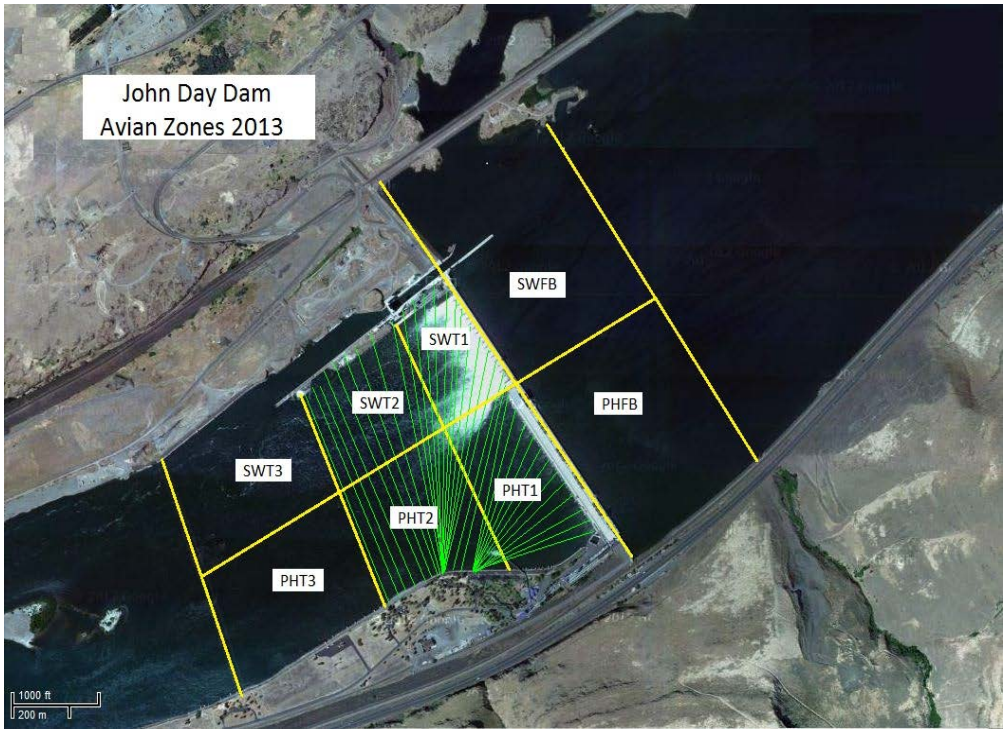


Fig. 4; Temperature observed in JDA North and South fish ladders.

AVIAN PREDATOR ABATEMENT

The comprehensive grid of 125 lines installed at JD tailrace BRZ for the 2011 passage season (see Map 1) performed well in 2013. All 125 lines were in place and properly tensioned before the beginning of 2013 juvenile passage season on 1 April. Additionally, there was the pyrotechnic hazing from a boat by USDA crew, located just downstream of the tailrace BRZ; one 8 hrs shift 0600-1400 hrs, 7 days a week, April 15 – July 31. There was a slight increase in the gulls' presence/numbers in the JD tailrace BRZ in 2013 as compared with 2012 and 2011 (fig. 1) However, the gulls' predation on smolts appear to be well under control as compared with 2006 through 2009, which was before the current avian lines grid was constructed (in 2011.)



Map 1; avian array at JD Tailrace BRZ installed in 2010 and re-tensioned for 2013.

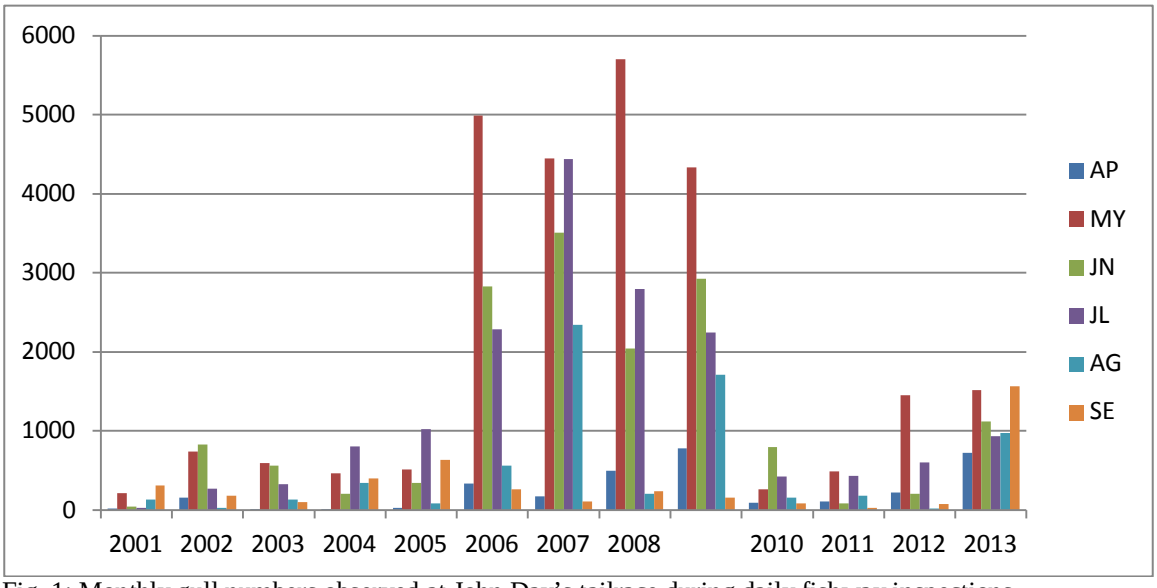


Fig. 1; Monthly gull numbers observed at John Day's tailrace during daily fishway inspections

PIKEMINNOW ABATEMENT

Dam angling at the John Day powerhouse BRZ was performed in May through September 2013 by a crew from Washington Department Fish and Wildlife, under contract with the Pacific States Marine Fisheries Commission. The 2013 total catch of 2,370 NPM was slightly higher than the 2012 catch of 2,217 NPM & significantly lower than the 2011 catch of 3,271 NPM. (See the PSMFC report for details.)

FISHWAY VELOCITIES – Collection channel

2013 JD South Fishway Collection Channel Velocities were conforming to the FPP criteria of 1.5 to 4.0 f/s. A multiyear data confirm the optimal channel velocities at all times, year round.

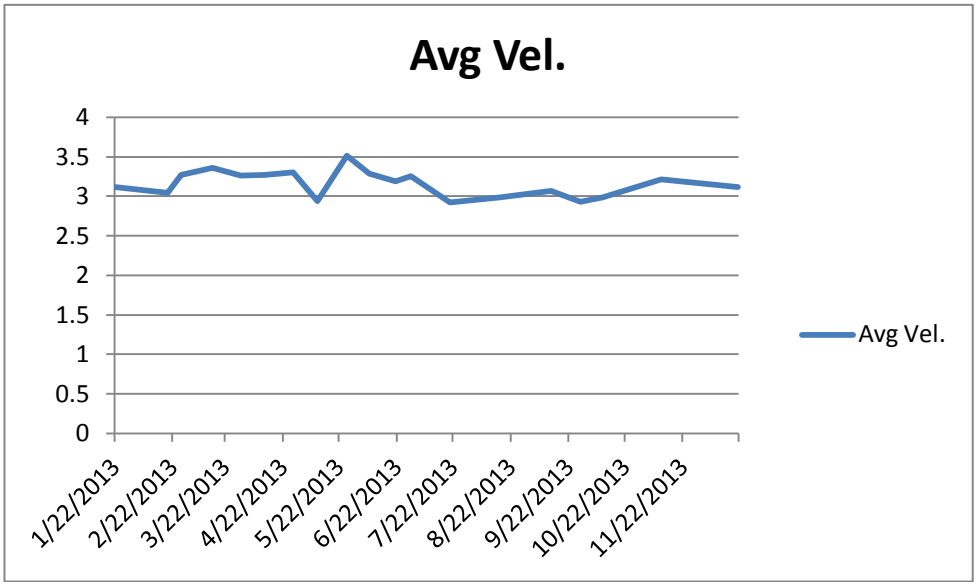


Fig. 5; JD South Fishway collection channel's velocities were estimated weekly during Adult Fish Passage Season (Mar – Dec 1) in 2013. Wooden floats were timed through the entire length of the channel and results were provided in the JD Fishways' status reports.