2012 ANNUAL FISHWAYS STATUS REPORT

JOHN DAY DAM

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2012 FISHWAY OPERATING SCHEDULE

The following information includes fishway operation for calendar year 2012. Total length of annual fishway outages can be determined by referring to previous years' annual report.

2012 JD FISHWAY OPERATING SCHEDULE

	MONTHS											
	J	F	M	A	M	J	J	A	S	O	N	D
ACTIVITY/ OPERATION												
North Adult Fishway												
Dewatered for winter maintenance	1/1 - 3/10											
Mostly orifice flow (new AWS pumps testing)			3/11- 3/3									
In regular service w/attraction water				3/31-11/3								
Attraction water off half day for ROV								2-Aug				
Dewatered for winter maintenance											11/5 - 12/31	
South Adult Fishway												
In service with 2 AWS turbines (due to # 3 rehab work)	1/1 - 1/29		2/14 - 4/5									
Dewatered for winter maintenance		1/31 - 2/13										
Orifice flow (necessary to return AWS turbine 3 to service)				4/6 – 4/11								
In regular service with 3 AWS turbines				4/12 – 12/31								
Attraction water off half day for ROV								1-Aug				
Smolt Monitoring Facility												
Dewatered for winter maintenance	1/1 - 3/30											
In regular service w/ daily smolt sampling				4/1 -8/12					8/26 - 9/15			
Water temp > 70 F. Condition sampling only, Mon. & Thurs.									8/13 - 8/25			
Full flow PIT tag detect (bypass at switch gate)											9/16-11/2	
Dewatered for winter maintenance												11/29- 12/31
Juvenile Bypass System												
1/3 gate well orifice open, rotate 2X/wk	1/1 - 2/07		3/17 - 3/3									12/16-12/31
Dewatered for winter maintenance		2/7 - 3/16										
In regular service w/ 48 STSs installed				4/1 - 12/15								
Spillway (for fish passage)												
No fish spill	1/1 - 4/9											
Fish spill & TSWs evaluations				4/10 - 8/31								
Bay 2 only, 1.5 KCFS daylight hrs only									9/1 - 11/30			
No fish spill												12/1-12/31

DEWATERINGS

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 2012 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
1/31/	SFL		12 j, 3a			10a					0	
11/5	NFL upper										20 shad	dewater
11/19	NFL entrance										144 shad	dewater
11/19	NFL AWS conduit								1ca,1bg,2sp		0	

Smolt Monitoring Facility 2012 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
2/7	JBS Channel		1a								0	
11/29	PDS	6a, 1j	20a			45a		12	1ba,24ca		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 2012 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
1/18	MU3 sc										1sh,8sd	unkn
1/27	MU11 dt							1	15ca		0	
2/26	MU3 sc									No Fish	0	
2/27	MU3 dt		14a								0	
6/26	MU13 sc									No Fish	0	
7/10	MU5 sc			1a							0	
7/10	MU5 dt								14ca	5lg,9small	0	
7/31	MU5 sc									No Fish	0	
8/1	MU5 dt								37ca		0	
8/10	MU12 sc								1ca,1cp		0	
8/10	MU12 dt									No Fish	0	
12/22	MU2 sc								1ca,1bg		3 a. sd	unkn
12/22	MU2 dt		1a					30j	20ca		0	

2012 - 2009 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 :	2012		2011		2010		2009	
	Total #	% OOC	Total #	% OOC	Total #	% OOC	Total #	% OOC
John Day Dam								
Number of inspections	622		622		639		638	
NORTH FISHWAY								
Exit differential	4	0.6%	0	0.0%	1	0.2%	1	0.2
Exit regulating weirs position	0	0.0%	0	0.0%	0	0.0%	0	0
Count station differential	2	0.3%	0	0.0%	0	0.0%	0	0
Weir crest depth	2	0.3%	0	0.0%	0	0.0%	1	0.2
Entrance differential	26	4.2%	1	0.2%	9	1.4%	3	0.5
Entrance weir EW1	na	na	4	0.6%	35	5.5%	58	9.1
Entrance weir EW2	na	na	0	0.0%	0	0.0%	0	0
SOUTH FISHWAY								
Exit differential	0	0.0%	0	0.0%	0	0.0%	0	0
Exit regulating weirs position	0	0.0%	0	0.0%	0	0.0%	1	0.2
Count station differential	0	0.0%	0	0.0%	1	0.2%	0	0
Weir crest depth	0	0.0%	0	0.0%	0	0.0%	0	0
South entrance differential	11	1.8%	4	0.6%	4	0.6%	2	0.3
Entrance weir SE1	10	1.6%	13	2.1%	17	2.7%	2	0.3
Collection channel velocity	0	0.0%	5	0.8%	0	0.0%	0	0
Bay 1 differential	10	1.6%	4	0.6%	3	0.5%	2	0.3
N.entrance PH(Bay 19)differential	10	1.6%	8	1.3%	2	0.3%	4	0.6
Entrance weir NE1	14	2.3%	33	5.3%	16	2.5%	10	1.6
Entrance weir NE2	13	2.1%	30	4.8%	3	0.5%	4	0.6
JUVENILE PASSAGE								
Forebay/bypass conduit differential	0	0.0%	0	0.0%	0	0.0%	3	0.5
Submersible traveling screens	0	0.0%	1	0.2%	0	0.0%	0	0
Turbine trashrack drawdown	0	0.0%	22	3.5%	0	0.0%	0	0
Vert barrier screen drawdown	0	0.0%	0	0.0%	0	0.0%	0	0
Spill volume	0	0.0%	0	0.0%	0	0.0%	0	0
Spill pattern	0	0.0%	0	0.0%	0	0.0%	0	0
Turbine Unit Priority	23	3.7%	0	0.0%	34	5.3%	28	4.4
Turbine 1% Efficiency	0	0.0%	0	0.0%	0	0.0%	1	0.2

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

Discussion

2012 was a good year for the JD fish passage as all JD Fishways performed well and without a major failure.

There has been a significant improvement in the Turbine Trashrack Drawdown, which declined in 2012 to 0 from 3.5 % OOC in 2011. This was due to an increased monitoring by JD Fisheries and intensive/ proactive raking of MUs trashracks by JD Structural crew.

JD North Fishway's Entrance Differential was OOC 4.2 % of time in 2012, but this was due to problems created by an intermediate/incomplete stage of the two years' construction schedule for its entrance improvements contract. Specifically, the mid channel velocities were lower than anticipated in September 2012 (related to low tailrace levels that time of year,) and the only practical remedy, was to run the ladder with an increased entrance differential (> 2.0 ',) which showed an improved fish passage. It is expected that the completion of the JD N Entrance improvements in early 2013, will eliminate the above mentioned ladder velocities' issues.

JD South Fishway's Entrance Differentials OOCs (SE1, NE1 & 2) were related to the necessary outage of the AWS in April 2012, when AWS turbine 3 was returning back to service after a three years long overhaul.

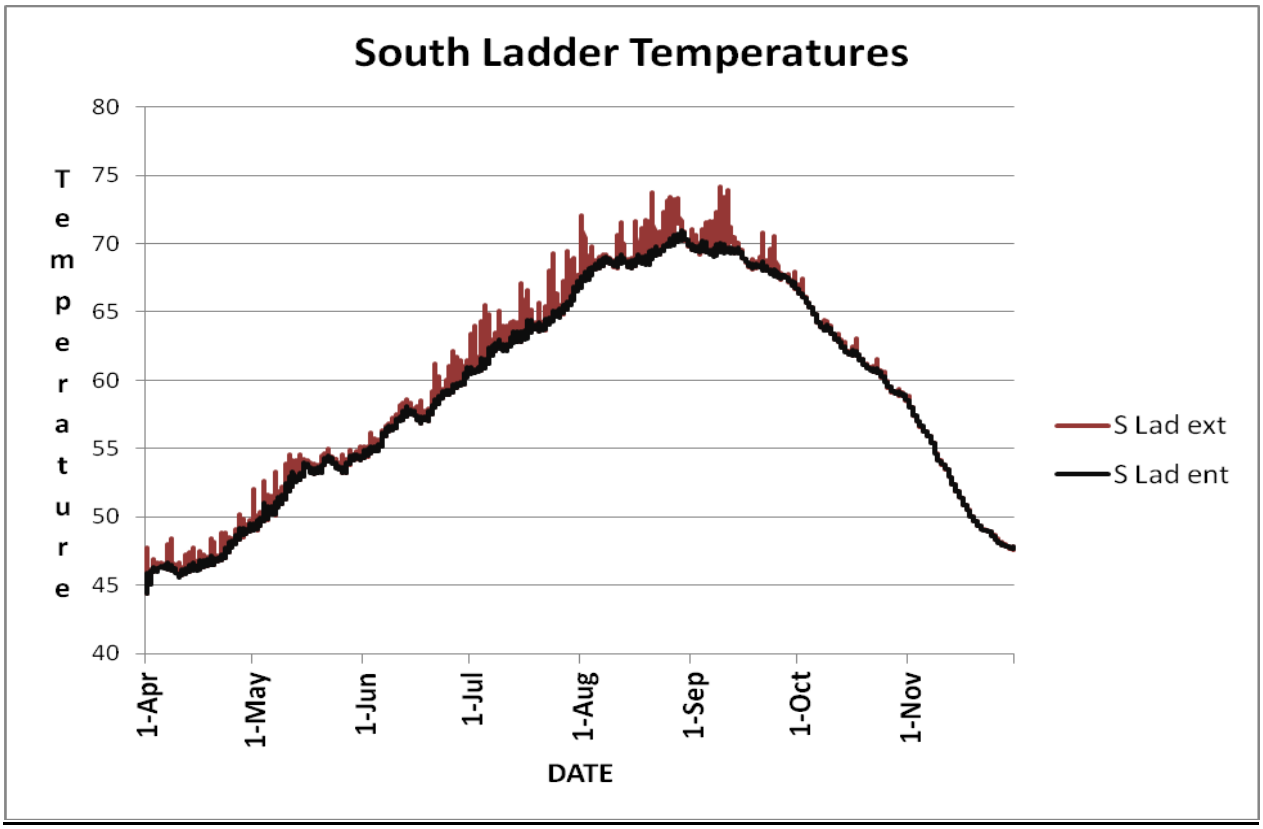
Unit Priority OOCs were a result of the necessary, biannual Line 1 maintenance outage, resulting in MU 1-4 OOS in October 2012.

FISH COUNTING

Visual fish counting was conducted 4/1/12 to 10/31/12 by Washington Dept of Fish and Wildlife contract. Counts were sent electronically directly to data base. No video counting of adult salmonids was performed in 2012.

WATER QUALITY

River temperature was read at south forebay at John Day. Water Temperature was also collected in both fish ladders at the entrance and exits (Fig. 4). Water clarity was read by Secchi dish at a counting station. This data was collected in '11 per regional request to maintain historical data base; it will be compiled into the comprehensive Regional 2012 Annual Fish Passage Report.



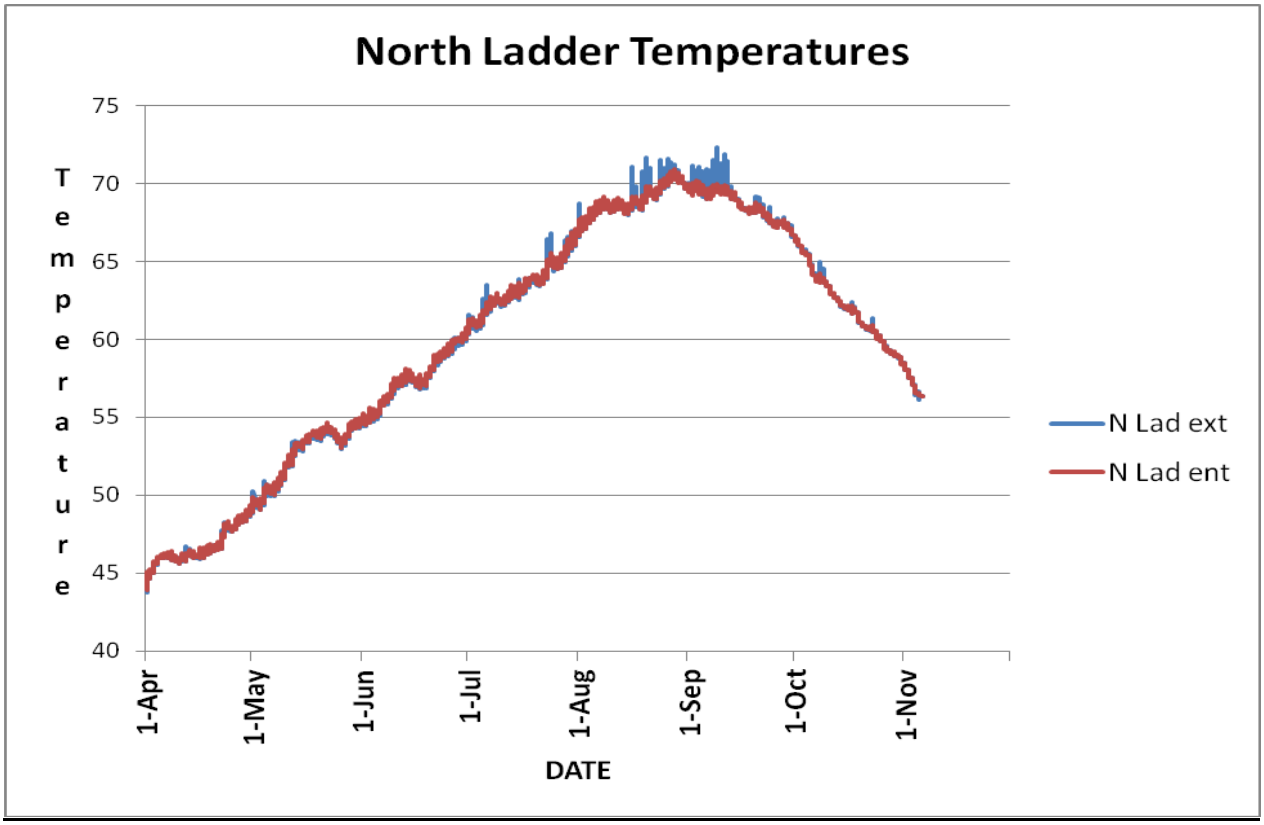
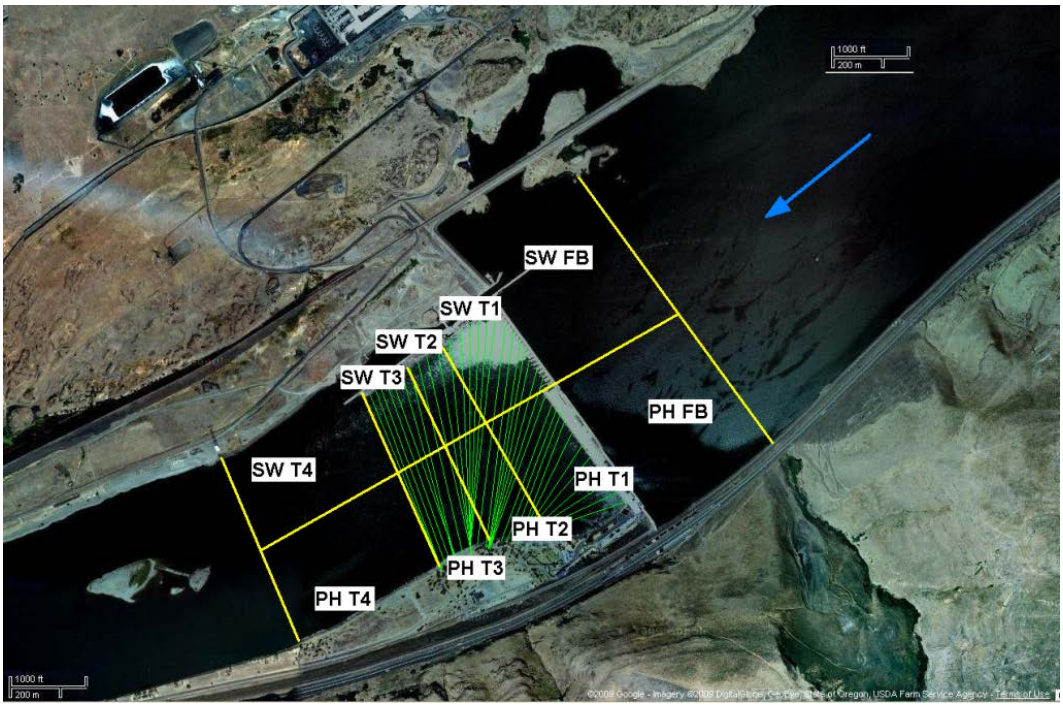


Fig. 4; Temperature observed in JDA North and South fish ladders.

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 2012. An excessive lines' stretching, which occurred in early winter 2010/2011, was corrected by a follow on contract; all lines 125 were properly tensioned before the beginning of 2012 juvenile passage season on 1 April.

There was a slight increase in the gulls' presence/numbers in the JD tailrace BRZ in 2012 as compared with 2011 (fig. 1) This was most likely a result of the reduction of USDA boat hazing effort to one boat shift per day in 2012, from two boat shifts in 2011. 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 2010.)



Map 1; avian array at JD Tailrace BRZ installed in 2010 and re-tensioned for 2011.

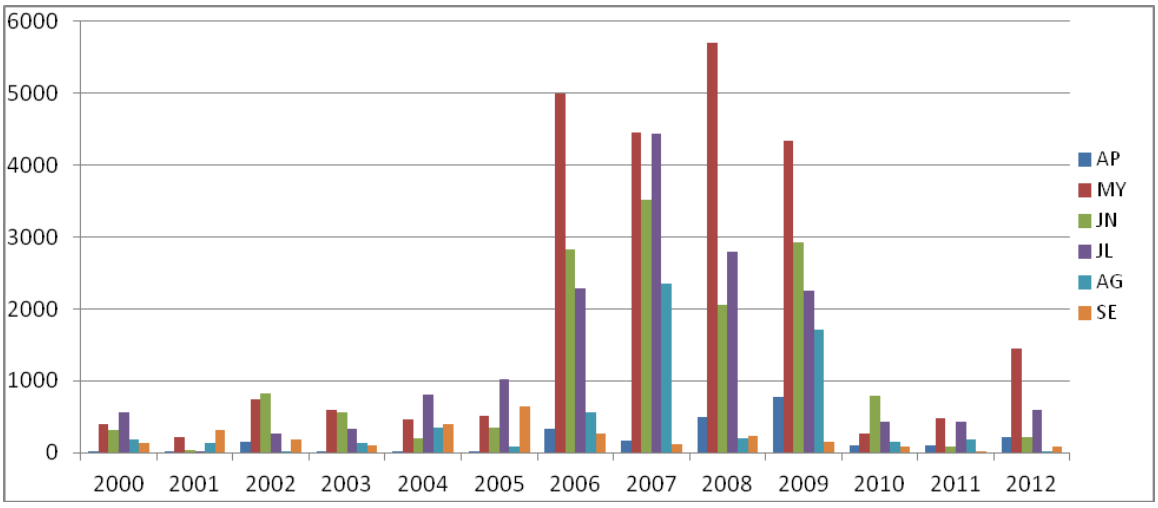


Fig. 1; Monthly gull numbers observed at John Day's tailrace during daily fishway inspections

PIKEMINNOW ABATEMENT

Dam angling at the John Day powerhouse BRZ was performed in May through September 2012, by a crew from Washington Department Fish and Wildlife, under contract with the Pacific States Marine Fisheries Commission. With the total of 2,217 NPM caught, the 2012 season was less productive than 2011 with 3, 321 NPM & 2010, with 2,666 NPM caught. Similar to 2011, the catches were higher later in season, with a majority of NPM caught/removed in August &September 2012.

JOHN DAY DAM FISH WAY VELOCITIES

2012 JD South Fishway's Collection Channel Velocities were conforming to the FPP criteria of 1.5 to 4.0 f/s.

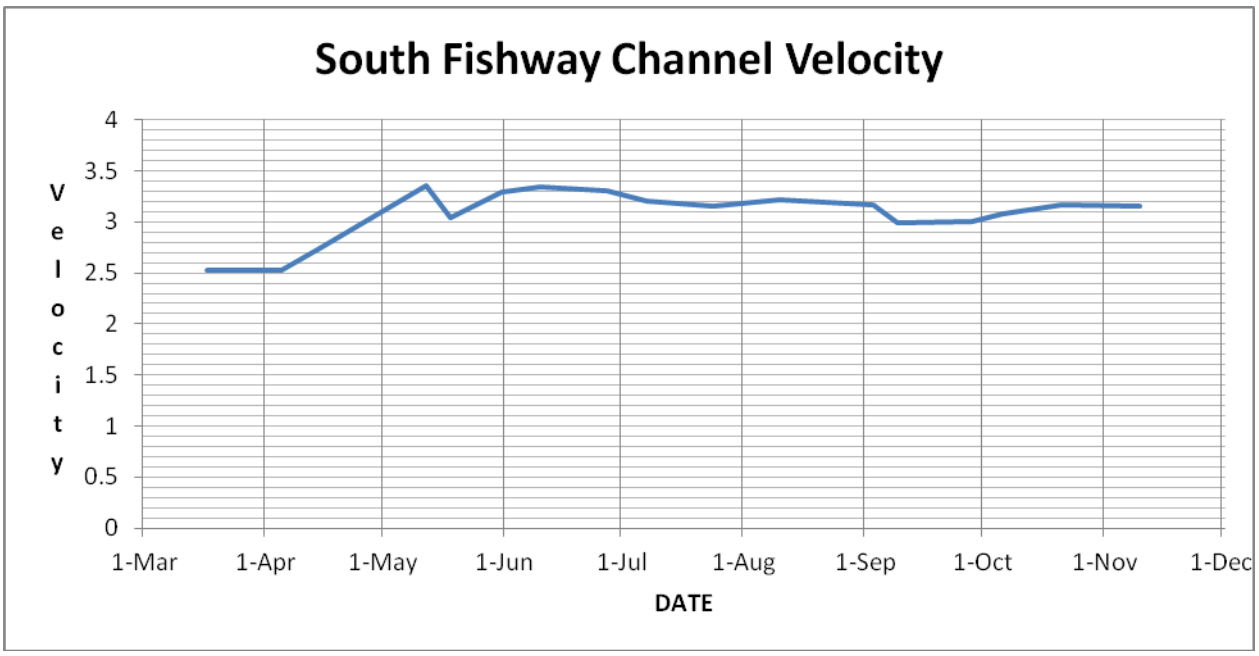


Fig. 5; JD South Fishway collection channel's velocities were estimated weekly during Adult Fish Passage Season (Mar – Dec 1) in 2012. Wooden floats were timed through the entire length of the channel and results were provided in the weekly JD Fishways' status report.