

AGENDA

Fish Passage O&M Coordination (FPOM) Team
The Dalles Administration Office conference room.
The Dalles Dam

December 4th, (0930-1600)

Includes site visit to TDA spillwall in the morning. (0930-1100)

Conference line- (888)422-7128

Participant code- 166834

Klatte code- 661608

1. 0930-1100 Tour the new spill wall. After the tour, meet in the Administration Office Conference room for FPOM.
2. Review/Approve Agenda and November Minutes (Klatte)
3. Action Items
 - 3.1. [long time ago] BON PH1 Grizzlies. **ACTION:** Hausmann will investigate options for modifying the PH1 draft tube drains. **STATUS:** *Hausmann would like to schedule mods to the drains as the units come out of service. Sounds like drawings need to be confirmed, initial drain installation will determine anticipated costs and schedule.*
 - 3.2. [Nov 08] Switchgate seals at BON and JDA. **ACTION:** Zyndol to check on the progress with MacIntosh. Mackey to follow-up. Hausmann will check with JDA to see if the design could be installed at BON this year. Cordie will take that to the Small Projects team and add BON to the scope of work. MacIntosh will need to contact a BON engineer.
 - 3.3. [Sep 08] Pinniped task group. **ACTION:** Lorz to send Bettin information about hazing.
 - 3.4. [Nov 08] BON B2CC repairs. **ACTION:** Lee will provide a repair schedule.
 - 3.5. [Nov 08] BON B2CC repairs. **ACTION:** Hausmann will talk with the maintenance crews to discuss what repairs could be made this winter.
 - 3.6. [Nov 08] IHR Sacajawea sub-station transformer. **ACTION:** Bettin to draft the FPP change form detailing the unit operation needed to keep the system operating correctly.
 - 3.7. [Nov 08] Screen removal for lamprey passage. **ACTION:** Clugston to look at the temporal passage, impacts to salmon if the screens are pulled, etc.
 - 3.8. [Nov 08] PH2 VBS Task Group. **ACTION:** Klatte/Hausmann to draft memo for next FPOM.
 - 3.9. [Nov 08] LWG jack bars. **ACTION:** NWW bio to draft FPP change form for the new bars.
 - 3.10. [Nov 08] BON Spill response plan. **ACTION:** Mackey to send out BON emergency spill response plan to FPOM. **STATUS:** *Sent on 1 December.*
 - 3.11. [Nov 08] MCN dewatering screen monitoring. **ACTION:** Mackey to call Swenson to find out status. Need to call during the AM since he is on jury duty. **STATUS:** *called on 1 December. Left message. Will try again.*
 - 3.12. [Nov 08] BON Spill response plan. **ACTION:** Hausmann to discuss the plan at next FPOM. **STATUS:** *to be discussed under item #5*
 - 3.13. [Nov 08] Fishway entrance times by adult salmon. **ACTION:** Cordie will talk with Clugston about getting University of Idaho to do the analysis. **STATUS:** *analysis attached to the agenda. To be discussed under item #7*
 - 3.14. [Nov 08] WDFW fish count lights. **ACTION:** Stephenson will draft a write-up detailing what the fish counters are seeing and what they are requesting. It should include what are they seeing, how improvements will be assessed, etc. Stansell offered assistance. **STATUS:** *to be discussed in January.*
4. Updates. (Klatte/Dykstra)
 - 4.1. Galvanized grates- water sample updates.
 - 4.2. LWG holding tanks.
 - 4.3. Kaplan study updates.

- 4.4. NWW fish pumps.
- 4.5. MCN spillway gate control check
- 4.6. IHR dive operations
5. **BON spill response plan.** (Hausmann)
6. **CRITFC's review of PIT tag data for travel time from the AFF to BO3.** (Lorz)
7. **Diel passage times of adult salmonids.** (Clugston)
8. **JDA smolt monitoring.** FPAC recommendation for JDA smolt monitoring. (McCann/ Cordie)
9. **Screen removal during peak juvenile lamprey, especially at MCN.** (Clugston) If not discussed in November, plan for December discussion.
10. **MCN dewatering screen monitoring.** (Swenson)
11. **Task Groups meeting today and tomorrow.**
 - 11.1. Blanket outage language. (*Chair- Klatte, Benner, Dykstra, Fredricks, Lorz, Mackey, Wills*)
 - 11.2. Fishway velocity (*Chair-Cordie, Fredricks, Lorz, Meyer, Mackey*).
 - 11.3. PH2 VBSs (*Chair- Hausmann, Benner, Fredricks, Klatte, Lorz, Mackey, Meyer, Schwartz, Wills*).
 - 11.4. TIES (*Chair-Klatte, Bettin, Benner, Fredricks, Kruger, Mackey, Schwartz, Wills*).
 - 11.5. SMP metrics sub-group. Meeting at FPC on 5 December at 0900. New touch screen demonstration.
12. **FPP proposed changes.**
 - 12.1. 08overview001 OV 1.10.2.1 FPOM Coordination- reference/copy of Coordination Form.
 - 12.2. 08BON003 BON sturgeon language. (incorporates changes from May 2008 mtg)
 - 12.2.1.1. Discuss difficulty in slow rolling PH1 units.
 - 12.3. 08BON004 BON 2.4.2.2.n.1 relocation.
 - 12.4. 08BON005 BON shad passage mode criteria.
 - 12.5. 08BON006 BON 2.1.2- include preference for mid to upper 1% turbine ops during split flows.
 - 12.6. 08BON007 BON 1.2.1.1, BON 2.4.1.2.f, BON 2.5.3.f, BON 2.5.3.f.1- change date of PH1 fish screen installation.
 - 12.7. 08BON008 Table BON-11- include split flow unit priority row to the table.
 - 12.8. 08JDA002 JDA Table 5
 - 12.9. 08JDA003 TDA and JDA velocity measurement language.
 - 12.10. 08JDA004 JDA 2.5.1.2.b.1- remove language.
 - 12.11. 08AppG004 Appendix G- BON protocols for holding lamprey.
 - 12.12. 08AppG005 Appendix G- BON valve numbering correction.
13. **Next Meeting-** January 8th, 2009 at NOAA Fisheries. 0900-1600. The meeting will focus on the FPP and the O&M budgets.

26 November 2008

To: David Clugston (USACE)

From: Matt Keefer and Chris Caudill

Re: Hourly detection distributions for adult salmon and steelhead at USACE dams

Introduction: This letter report summarizes the diel passage behavior of adult salmonids at lower Columbia and Snake River dams. The data were assembled to help managers identify the best times for fishway maintenance and other activities that potentially disrupt upstream adult salmonid passage. Adult PIT-tag data and the extensive radiotelemetry studies conducted by the UI and NMFS (e.g., Keefer et al. 2003, 2007, 2008a, 2008b; Burke et al. 2005; Stuehrenberg et al. 2005) have shown that the majority of adult activity in fishways occurs during daylight hours. The relatively limited night-time activity by salmonids has mostly been by fish that entered fishways late in the day.

Methods and Results: Here we generated time-of-day distributions of adult fish activity at fishway entrances (approaches and entries) and top-of-ladder sites (exits into forebays). These two areas bracket the fishway passage environment. We used five years of telemetry data for spring-summer Chinook salmon, fall Chinook salmon, and steelhead (2000-2004) and a single year for sockeye salmon (1997). In these years, all adult fish were collected and radio-tagged at Bonneville Dam. Sample sizes ranged from several hundred to more than 1,100 fish per run per year, and were smallest in 2004.

The level of telemetry coverage differed between dams and years. However, top-of-ladder sites were continuously monitored at all eight dams in all years and most fishway entrances were also monitored at all dams. The combination of large sample sizes and saturation antenna coverage resulted in large numbers of detections, particularly for fishway approaches (Table 1).

Time-of-day distributions are presented graphically in Figures 1-8. Results were generally similar across runs and dams, with the vast majority of tagged fish detected during daylight hours at each site. Distributions for fishway approaches typically showed a rapid increase in detections after dawn, often followed by a slight lull in mid-day and another increase in late afternoon. Distributions for fishway entrances were very similar to those for approaches, but averaged slightly later than approaches. Top-of-ladder distributions were later overall, reflecting the time fish used to pass through fishways and up ladders. At some dams, peak top-of-ladder passage occurred in the afternoon. At other sites, there was some evidence for two peak passage times, with a lull in mid-day. Differences between runs were relatively limited, and were likely related more to day length or water temperature at different seasons than to biological differences. It is possible that differences in swimming ability had an effect (e.g., the relatively late timing of sockeye salmon).

These results indicate that adult salmonid activity at dams was consistently lowest at night. The hours between approximately 22:00 and 04:00 had the lowest fishway detection numbers (Figures 1-8). At most dams, $\leq 5\%$ of the detections for each run were between midnight and 04:00 (Figure 9). This suggests that this time of night may be best time for maintenance or other actions, at least for adult salmonids. We note that adult Pacific lamprey are primarily nocturnal,

and have passage timing distributions that are nearly the opposite of those for salmonids (see Figure 10).

Literature cited

- Burke, B.J., K.E. Frick, M.L. Moser, T.J. Bohn, and T. C. Bjornn. 2005. Adult fall Chinook salmon passage through fishways at lower Columbia River dams in 1998, 2000, and 2001. Report of National Marine Fisheries Service to U.S. Army Corps of Engineers, Portland district.
- Keefers, M.L., T.C. Bjornn, C.A. Peery, K.R. Tolotti, R.R. Ringe, P.J. Keniry, and L.C. Stuehrenberg. 2003. Adult spring and summer Chinook salmon passage through fishways and transition pools at Bonneville, McNary, Ice Harbor, and Lower Granite dams in 1996. Technical report 2003-5 of Idaho Cooperative Fish and Wildlife Research Unit to U.S. Army Corps of Engineers, Portland and Walla Walla districts.
- Keefers, M. L., C. A. Peery, T. C. Bjornn, M. A. Jepson, K.R. Tolotti, R.R. Ringe, and L. C. Stuehrenberg. 2007. Adult salmon and steelhead passage through fishways and transition pools at The Dalles Dam, 1997-2001. Technical Report 2007-2 of Idaho Cooperative Fish and Wildlife Research Unit to U.S. Army Corps of Engineers, Portland and Walla Walla districts.
- Keefers, M. L., C. A. Peery, T. C. Bjornn, M. A. Jepson, K.R. Tolotti, S. R. Lee, and L. C. Stuehrenberg. 2008a. Adult salmon and steelhead passage through fishways and transition pools at John Day Dam, 1997-2001. Technical Report 2008-4 of Idaho Cooperative Fish and Wildlife Research Unit to U.S. Army Corps of Engineers, Portland and Walla Walla districts.
- Keefers, M. L., D. C. Joosten, C. L. Williams, C. M. Nauman, M. A. Jepson, C. A. Peery, T. C. Bjornn, R. R. Ringe, K.R. Tolotti, S. R. Lee, L. C. Stuehrenberg, M. M. Moser, and B. J. Burke. 2008b. Adult salmon and steelhead passage through fishways and transition pools at Bonneville Dam, 1997-2002. Technical Report 2008-5 of Idaho Cooperative Fish and Wildlife Research Unit to U.S. Army Corps of Engineers, Portland and Walla Walla districts.
- Keefers, M.L., C.T. Boggs, C.A. Peery, and M.L. Moser. *In review*. Adult Pacific lamprey migration in the lower Columbia River: 2007 radiotelemetry and half duplex PIT-tag studies. Technical Report of Idaho Cooperative Fish and Wildlife Research Unit to U.S. Army Corps of Engineers, Portland and Walla Walla districts.
- Stuehrenberg, L. C., M. L. Keefers, C. A. Peery, K. R. Tolotti, R. R. Ringe, T. C. Bjornn, and B. Burke. 2005. Adult steelhead passage through fishways and transition pool at Bonneville, McNary, and Lower Granite dams - 1996. Technical Report 2005-6 of Idaho Cooperative Fish and Wildlife Research Unit to U.S. Army Corps of Engineers, Portland and Walla Walla districts.

FPP Change Forms

Change Request Number: 08overview001

Date: 10/31/2008

Proposed by: FPOM

Location of Change: Overview 1.10.2.1 FPOM Coordination

Proposed Change: Add wording to include the use of the Coordination Form. Insert a copy of the Coordination Form.

“The District biologist will then provide essential information to the fish agencies, tribes, and other affected interests as appropriate, preferably by *the use of the Coordiantion Form (below), and, if necessary,* by telephone call with an e-mail follow-up. Information for planned activities should be provided at least two weeks in advance to FPOM representatives for review. For unanticipated but non-emergency activities such as equipment failures, information should be provided at least three workdays in advance. Emergency coordination may be performed immediately prior to or subsequent to the required action (see section 1.2). Information provided to affected interests will include a summary of the problem, location, date and time, analyses of potential impacts to salmon stocks, and potential alternative actions. The affected interests should in turn respond *by email, in person, or by phone. The response will be documented on the Coordination Form, sent to FPOM and filed for future reference.* A District biologist will forward the decision to project personnel, and in some cases, RCC will issue a teletype to the project for approved activities.”

Reason for Change: To provide a Coordination Form for interested parties and to formalize the use of the form for coordination issues.

Comments from others:

Record of Final Action:

Change Request Number: 08BON003

Date: April 16, 2008

Proposed by: Bonneville Project

Location of Change- BON 5.4.6-5.4.7 and BON 6.5.1-6.5.2 (sections re-numbered as required)

Proposed Change:

- 5.4.6. *From 1 December through 30 April, non-priority turbine units will not be voluntarily scheduled for extended outages. Priority units are 1, 10, 11, and 18.*
- 5.4.7. *From 1 December through 30 April, turbines which have been idle/out of service for more than 12 hours will be started by slow rolling the unit after manually tipping turbine blades from flat to steep back to flat.*

After including the two sections above as 6.5.1 and 6.5.2-
The current 6.5.2 will be re-numbered to 6.5.4. Add “*bottom tail logs should be placed first.*”
The current 6.5.3 will be re-numbered to 6.5.5. Add “*It is recommended adjacent units be operated to flush fish prior to placing tail logs in the unit to be OOS. It is also recommended that units located adjacent to OOS units not be voluntarily taken out of service until the adjacent units return to service.*”

Reason for Change: To better protect sturgeon in the draft tube and turbine environment.

Comments from others: FPOM doesn’t want priority units OOS during fish passage season.

Change Request Number: 08BON004

Date: 6/4/2008

Proposed by: Project Fisheries

Location of Change: BON-18 2.4.2.2.n.1

Proposed Change:

2.4.2.2.n.1 says “coordinate gatewell cleaning with smolt monitoring personnel operating the downstream juvenile sampling facilities”. It should be moved to 2.4.2.2.m.3, which is the section on what to do when cleaning gatewells.

Reason for Change:

2.4.2.2.n.1 is in the wrong location.

Comments from others:

Record of Final Action:

Change Request Number: 08BON005

Date:8/6/08. Update don 10/31/08

Proposed by: BON Project Fisheries

Location of Change: BON Section 2.5.1.2.a

Maintain the water depth over fish ladder weirs at 1’ +/- 0.1’ during non-shad passage season (August 16 through May 14) and 1.3’ +/- 0.1’ during the shad passage season (May 15 through August 15).

Proposed Change: Remove the dates and adjust to shad passage mode based on the numbers of shad passing.

Maintain the water depth over fish ladder weirs at 1’ +/- 0.1’ during non-shad passage season (<5,000 shad per day/per ladder) and 1.3’ +/- 0.1’ during the shad passage season (> or = to 5,000 shad per day/per ladder).

Reason for Change: It makes more sense to base shad passage mode on shad numbers passing. It also makes BON criteria consistent with TDA shad criteria.

Comments from others: Add *per ladder* to be consistent with TDA.

Change Request Number: 08BON006

Date: 9/11/08

Proposed by: FPOM

Location of Change: BON 2.1.2

Proposed Change: Include, at the end of the paragraph, “Turbine units should be operated at the mid or upper 1% range whenever possible, during the split flows operation.”

Reason for Change: Without this guidance, the Control Room will allow GDACS to run the units, which may result in some units operating at the lower end of the 1% band.

Comments from others:

Record of Final Action:

Change Request Number: 08BON007

Date: 9/11/08

Proposed by: FPOM

Location of Change: BON 1.2.1.1 , BON 2.4.1.2.f, BON 2.5.3.f, and BON 2.5.3.f.1

Proposed Change: To include language that states the PH1 fish screens would be installed as soon as possible, after spill ends.

BON 1.2.1.1 (original)- “The downstream migration channel (DSM) is also used for adult passage from September 15 through December 15.” **to**

BON 1.2.1.1 (new)- “The downstream migration channel (DSM) is also used for adult passage from *early September, as soon as fish screens are installed*, through December 15.”

BON 2.4.1.2.f (original)- “All gatewell orifices should be opened and DSM1 ran south from September 15 through December 15.” **to**

BON 2.4.1.2.f (new)- “All gatewell orifices should be opened and the DSM1 ran south from *early September, as soon as fish screens are installed*, through December 15.”

BON 2.5.3.f (original)- “STs and VBSs will be installed in two PH1 priority units on September 15.” **to**

BON 2.5.3.f (new)- “STs and VBSs will be installed in two PH1 priority units *as soon as possible after spill ends*.”

BON 2.5.3.f.1 (original)- “The Powerhouse One DSM will be watered up on September 15, with water flow to the south.” **to**

BON 2.5.3.f.1 (new)- The Powerhouse One DSM will be watered up *as soon as screens are installed*, with water flow to the south.”

Reason for Change: This change provides for getting the fish screens installed and providing adult fallback protection earlier in September. This will also provide protection for when flows are split prior to September 15th.

Comments from others:

Record of Final Action:

Change Request Number: 08BON008

Date: 9/11/2008

Proposed by: FPOM

Location of Change: Table BON-11

Proposed Change: Include a row for unit priority, by powerhouse, when splitting flows.

Table BON-11. Turbine unit operating priorities, Bonneville Powerhouses One and Two.

PERIOD	PRIORITY
Year-round; adult fish ladders are in service	11,18,15,12,17,14,13,16, 3,1,4,6,2,5,7,10,9,8
First Powerhouse Adult Fish Ladder out of service	11,18,15,12,17,14,13,16, 3,1,4,6,2,5,7,10,9,8
Second Powerhouse Adult Fish Ladder out of service	3,1,4,6,2,5,7,10,9,8 11,18,15,12,17,14,13,16
Priority for each powerhouse when flows are split due to fish numbers.	PH1- 3,1,4,6,2,5,7,10,9,8 PH2- 11,18,15,12,17,14,13,16

Reason for Change: This clearly lays out the priority for each powerhouse when flows are split.

Comments from others:

Record of Final Action:

Change Request Number: 08JDA003

Date: 5/27/2008

Proposed by: The Dalles John Day Project

Location of Change: TDA 2.5.1.2.4 and JDA 2.5.1.2.a.4

Proposed Change:

Omit from TD - ‘Water velocities will be measured at one location directly and monitored during fishway inspections to verify channels are operating within velocity criteria’.

Add to TD and JD – ‘Water velocities will be monitored weekly during as part of the fishway inspection program. Project biologist will determine method. Results will be provided in weekly status report. (JD did not have the same wording as TD)

Reason for Change:

Discussion and resolution determined through FPOM velocity task group

Comments from others:

Record of Final Action:

Change Request Number: 08JDA004

Date: 8/13/2008

Proposed by: JDA Project Fisheries

Location of Change- JDA 2.5.1.2.b.1

Proposed Change: Remove the following language “Testing will be conducted to determine if the use of one entrance at greater than 8’ depth allows better passage conditions. (Study plan will be developed through the AFEP Studies Review Work Group.)”

Reason for Change:

Remnant information from previous years FPPs. Decision was made through FPOM to operate 1 entrance weir at >8’

Comments from others:

Record of Final Action:

Change Request Number: 08AppG004

Date: 7/22/2008

Proposed by: Jon Rerecich

Location of Change- Appendix G BON AFF trapping protocols 2.3.

Anytime lamprey are held overnight in the AFF, researchers will notify Project Fisheries and the Control Room.

Proposed Change:

Restrict holding times for lamprey to 48 hours.

Lamprey may be held up to 48 hours in the AFF. Researchers will notify Project Fisheries and the Control Room whenever lamprey are held.

Reason for Change:

To minimize holding lamprey too long. In 2008 there was a mortality due to holding over a weekend.

Comments from others:

Record of Final Action:

Change Request Number: 08AppG005

Date: 091108

Proposed by: Bonneville Project Fisheries

Location of Change Appendix G section 1.12





Proposed Change: App. G section 1.12 currently reads: “Users will be permitted to operate valves 10 and 11” but it should read “Users will be permitted to operate valves 9 and 10”

Reason for Change: Corrects erroneous valve info.





Comments from others:

Record of Final Action:

December 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 BON BI to orifice flow BON F1 OOS BON DSM1 dewater BON ITS mods begin	2 TDA-E dewater Chum workshop	3 JDA-N dewater BON BI dewater	4 FPOM at TDA JDA-N ent dewater TDA spillwall call	5	6
7	8 AFEP Research review- NWP	9 AFEP Research review- NWP	10 AFEP Research review- NWP	11 AFEP Research review- NWP	12	13
14	15 Adult fish counting ends LWG. STS removal begins	16	17 JDA SMF dewater	18 TDA spillwall call BON DSM2 dewater	19	20
21 Happy Hanukkah	22 BON AFF dewater	23 BON two-mile pipe	24	25 Merry Christmas	26 Happy Kwanzaa	27
28	29	30	31			

January 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Happy New Year TDA spillwall call	2 NWW adult fish facility begins	3
4	5 JDA south turbine ROV	6 JDA-S dewater	7 NWP FFDRWG	8 FPOM Meeting- NOAA O&M budget review by FPOM FPP meeting	9 BON CI pickets pulled. BON north blkhd installed.	10 BON WS to orifice flow BON F2 OOS
11	12 BON WS dewater	13 TDA-N dewater	14 TDA-N ent dewater BON ROV inspection	15 AFEP- brief on funded proposals TDA spillwall call	16	17 BON CI to orifice flow
18	19 HOLIDAY	20 BON CI dewater	21	22	23	24
25	26	27	28	29 TDA spillwall call	30	31

February 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 SLEDs installed	3	4	5	6	7
8	9	10	11	12 FPOM TDA spillwall call	13 Revised Draft FPP Due to NWD	14
15	16 HOLIDAY	17	18 TDA PUD ROV	19	20	21
22	23	24	25 JDA south turbine trashrack ROV	26 TDA spillwall call	27	28 Annual FPP Issued Adult fish facility maintenance ends