CENWP-OD 16 October 2008

MEMORANDUM FOR THE RECORD

Subject: FINAL Minutes for the 09 October 2008 FPOM meeting.

The meeting was held at The Dalles Discovery Center in The Dalles, OR. In attendance:

Last	First	Agency	Office	Email
Bailey	John	USACE	509-527-7123	John.c.bailey@usace.army.mil
Benner	David	FPC	503-230-7564	dbenner@fpc.org
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Cordie	Bob	USACE	541-298-7406	Robert.p.cordie@usace.army.mil
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Hevlin	Bill	NOAA	503-230-5415	Bill.hevlin@noaa.gov
Klatte	Bern	USACE	503-808-4318	Bernard.a.klatte@usace.army.mil
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Madison	Patricia	USACE-FFU	541-298-9706	Patricia.l.madson@usace.army.mil
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Meyer	Ed	NOAA	503-230-5411	Ed.meyer@noaa.gov
Morrill	Charles	WDFW	360-902-2747	
Moody	Greg	USACE	509-527-7124	Gregory.p.moody@usace.army.mil
Schwartz	Dennis	USACE	503-808-4779	Dennis.e.schwartz@usace.army.mil
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Spurgeon	Bill	USACE	509-282-7211	William.f.spurgeon@usace.army.mil
Sweet	Jason	BPA	503-230-3349	jcsweet@bpa.gov
Tudor	Rosanna	WDFW	541-922-3630	
Wills	Dave	USFWS	360-604-2500	David_wills@fws.gov

Ben Hausmann and Bill Hevlin called in.

1. Review/Approve Agenda and September Minutes. Wills noted the incorrect dates on the September minutes. **ACTION:** Mackey to correct and send to FPOM.

2. Action Items

2.1. [long time ago] BON PH1 Grizzlies. **ACTION:** Hausmann will investigate options for modifying the PH1 draft tube drains. ***STATUS:*** *instead of a larger shroud, the Project wants to look at chipping out more concrete to make drain larger to decrease velocity and suction on the drain. It was suggested the open area be maximized. There was some suggestion that the flow could be controlled.*

2.2. [long time ago] Switchgate seals at BON and JDA. **ACTION:** JDA will move forward with the airbladder seals. NOAA worries about fish being able to access areas under the gate. BON will continue moving forward with reducing leakage around and under the gate. ***STATUS:*** *JDA has turned the task over to the Small Projects team at RDP. Mike Adams is the POC. Project engineer, Dave MacIntosh, will be engaged in the project as well.*

2.3. [Jul 08] Water Quality ad-hoc committee. **ACTION:** Klatte will convene the meeting to discuss water quality testing protocols and needs. ***STATUS:*** *Latest TDA samples came back under the detectable limits. A third set will be completed in October. Powder coating looks to be an option.* **ACTION:** Cordie will draft a memo summarizing all sample results. FPOM will need to make a final decision by November, December at the latest.

2.4. [Sep 08] BON FOG lifting beam status. **ACTION:** BON is still waiting for plans. Hausmann will provide an update at the October FPOM. ***STATUS:*** *Final drawings not yet ready. Once*

the Project has the final drawings, the welder anticipates three weeks until completion. About a month or so behind schedule, but still will have the beam by December.

2.5. [Sep 08] FPOM coordination. **ACTION:** Klatte will talk with Langeslay about coordination and coordination documentation.

2.6. [Sep 08] BON B2CC repairs. The District will inspect and draft recommendations for repairs. **ACTION:** Schwartz will get the recommendations to Mackey and Klatte to send to FPOM. ***STATUS:*** *Lee and Schlenker preparing to inspect the B2CC in the next couple of weeks and get a report out. Bettin asked if there was O&M money. Klatte has a little but it will probably not be enough. McCann asked about the spalling. Schwartz described the concrete that has come out of the joints along the wall and the floor. A full report is expected by the next FPOM.*

2.7. [Oct 08] BON B2CC repairs. The District will inspect and draft recommendations for repairs. **ACTION:** Schwartz will get the report by next FPOM.

2.8. [Sep 08] JDA smolt monitoring. **ACTION:** Cordie will get his rationale in writing. Lorz will get the issue on the FPAC agenda for next week. ***STATUS:*** *Cordie e-mailed his write up. It is attached to the minutes. He explained that the memo lays out his justification for the change. McCann reported that FPAC hasn't decided if two or three days a week is acceptable. Klatte asked if he would be receiving something from FPAC soon. This will be carried to the November FPOM meeting. FPAC didn't disagree with the two days a week but there is discussion as to whether or not three days would be better.*

2.9. [Sep 08] Pinniped task group. **ACTION:** Lorz to send Bettin some information about hazing sea lions. ***STATUS:*** *no update on Lorz's action, but there are now two pinnipeds below BON. Fredricks said there was a sea lion that was shot and killed in the Willamette River.*

2.10. [Sep 08] TIES task group. **ACTION:** Klatte to set up a meeting to discuss the data in October. ***STATUS:*** *the contract has been awarded. The crane will be exercised and FPOM can make the call of TIES in or TIES out. Bettin asked if the TIES impact the gatewell environment and if the TIES would impact the gatewell testing. A TIES in and a TIES out test may not be feasible. Testing in is Unit 14, which doesn't get a TIES anyhow. Schwartz says the BGS data should be available by the end of October. The TIES TG will meet after the November FPOM. The BGS data will show you where each fish went, if it went through the unit, but it won't show you any FGE. Wills commented that he thought the point was to determine if TIES were needed due to BGS guidance. Need historical data, CFD model runs, BGS data and route of passage for the TIES meeting. There was a question as to the amount of time needed to install TIES. The Project can get about three in a day. Schwartz added that it depends on when the TIE crane returns. It is currently planned for 1 March, but it may slip. There was a question as to whether or not it is in the Project's work plan. Update-* ***The Project anticipates installing TIES as per the FPP as long as the TIE crane is available.***

2.11. [Sep 08] WDFW fish viewing window light request. **ACTION:** Stephenson will inquire further as to the need for extra lights, then let Mackey know if further coordination is needed.

2.12. [Sep 08] WDFW jack size memo. **ACTION:** Richards will send a copy of the memo to FPOM when he sends it to LeFleur.

2.13. [Sep 08] MCN screen cleaning. **ACTION:** Dykstra to send a driveshaft repair schedule to Mackey for inclusion in the meeting minutes. ***STATUS:*** *Moody provided an update. The screen is back in service since 7 October.*

2.14. [Sep 08] MCN fish pump outage. **ACTION:** FPOM would like to look at emergency back-up operation in the event a pump goes out. ***STATUS:*** *There are already back up operations in the FPP in the event of a pump failing.*

2.15. [Sep 08] NWW 3 September meeting. **ACTION:** Dykstra will compile the various notes taken by others and send them to FPOM. ***STATUS:*** *Meeting notes were e-mailed. Fredricks would like to see a participation list as well.* ***This was sent to Mackey. All items were compiled and sent in one email on 17 October.***

2.16. [Sep 03] SMP protocols. **ACTION:** Dykstra will mesh the FPP language so FPC and USACE protocols are more closely aligned.

2.17. [Sep 08] FPOM coordination. **ACTION:** Mackey will add unit outages to the FPOM calendar. ***STATUS:*** *completed.*

2.18. [Sep 08] BON FGE/VBS mods. **ACTION:** Schwartz will set up a FGE mods meeting for the week of 22 September. ***STATUS:*** *Schwartz set the meeting for 23 September. Schwartz talked about the meeting. The 23 September meeting was only the federal family. FGE mods, Spring Creek testing and FGE testing was discussed. A special FFDRWG on 8 October included the same information for all SRWG members. Unit operation for Spring Creek and bounds for 2009 FGE testing were discussed and agreed to. Notes will be distributed by Langeslay.*

2.19. [Sep 08] BON daylight hours. The Table BON-5 will be updated to reflect the new daylight savings time date. **ACTION:** Mackey will update the daylight spill table to reflect the new daylight savings time. ***STATUS:*** *The Table BON-5 appears to incorporate the dates for daylight savings time. The Oct 30-Nov 30 encompasses the old and new DST dates.*

2.20. [Sep 08] AFF protocols. **ACTION:** Mackey will send the 14 August AFF meeting minutes. ***STATUS:*** *Completed on 11 September.*

2.21. [Sep 08] AFF protocols meeting. CRITFC, FPOM and BON Project Fisheries will meet to discuss how to move forward with the picket lead protocols. **ACTION:** Mackey to set up a meeting room for Monday. ***STATUS:*** *The group met at CRITFC on 15 September at 1500. A summary of the meeting was provided in the September minutes.*

2.22. [Sep 08] AFF picket lead mods. **ACTION:** Mackey to check with Langeslay to see that the AFF is on the FFDRWG agenda. ***STATUS:*** *The topic was discussed at the 17 September FFDRWG.*

2.23. [Sep 08] JDAN extended outage request. **ACTION:** Cordie to send the analysis to Mackey to include in the minutes. ***STATUS:*** *completed.*

2.24. [Sep 08] Fishway velocity task group. **ACTION:** Mackey to set up a conference line and send attachment to task group members. ***STATUS:*** *Conference call occurred on 29 September. Members needed more information. They wanted to see similar protocols for each project. Cordie provided more information and Mackey is attempting to find another day for a conference call.*

2.25. [Sep 08] SMP protocols. **ACTION:** Mackey to reserve a call line for 29 September at 1300. ***STATUS:*** *completed.*

2.26. [Sep 08] SMP protocols. **ACTION:** McCann will put the ppt. on the website and send the location to Mackey. ***STATUS:*** *completed*

2.27.[Jul 08] AFF trapping protocols when water temperatures reach 70°F. **ACTION:** CRITFC will look PIT tag data for travel time from the AFF to BO3. Lorz will provide an update at the October FPOM meeting. ***Discussed under Agenda Item #6***

2.28. [Sep 08] Kaplan Blade Study. **ACTION:** Fredricks will review the plan and provide a summary to FPOM in October. ***Discussed under Agenda Item #9***

2.29. [Sep 08] Kaplan Blade Study. **ACTION:** HDC (Rod Wittinger) will be invited to discuss with FPOM in October. ***Discussed under Agenda Item #9***

2.30. [Jul 08] McNary dewatering screen monitoring. **ACTION:** Swenson will put together a memo detailing the recommendation. ***STATUS: to be discussed under Agenda Item #12.***

2.31. [Jul 08] LGS back flushing of orifices. **ACTION:** Hevlin will meet with NWW to discuss options. He will present findings to FPOM in September. ***STATUS: Agenda Item #13.***

2.32. [Sep 08] BON split flows. **ACTION:** Mackey will write up the change form to include adults and jacks in FPP BON 2.1.2. ***STATUS:*** *completed on 23 September.* ***Discussed under 17.8.***

2.33. [Sep 08] BON split flows. **ACTION:** Mackey to draft the change form to include a preference for operating at the mid or upper 1% range whenever possible. ***STATUS:*** *Completed on 25 September.* ***Discussed under 17.9.***

2.34. [Sep 08] BON split flows unit priority. A new row should be added to Table BON-11 to clearly indicate the unit priority for each powerhouse. **ACTION:** Mackey to add the row and draft the change form. ***STATUS:*** *Completed on 25 September.* ***Discussed under 17.10.***

2.35. [Sep 08] BON PH1 fish screens. The fish screen install date will be changed to "as soon as possible, after spill ends". **ACTION:** Mackey to draft the change form to modify BON 1.2.1.1, BON 2.4.1.2.f, BON 2.5.3.f, and BON 2.5.3.f.1. ***STATUS:*** *Completed on 25 September.* ***Discussed under 17.11.***

2.36. [Oct 08] September FPOM minutes. **ACTION:** Mackey to update the dates in the draft September FPOM minutes and send Final to FPOM. Mackey to resend June-August FPOM minutes. ***STATUS:*** *completed on 17 October.*

2.37. [Oct 08] Blanket approval for certain maintenance issues. **ACTION:** FPOM will put together the limitations for inclusion into the 2009 FPP. Klatte will take the lead to develop acceptable criteria.

2.38. [Oct 08] TDA fish unit outage on 6 November. **ACTION:** Cordie will check on the option of keeping the fish units in service. ***STATUS:*** *Cordie confirmed that the fish units cannot be run on line 2. The outage on 6 November will include the four main turbines and the two fish units.*

2.39. [Oct 08] LGS orifice back –flushing. **ACTION:** Moody will contact Hevlin to set up a date.

2.40. [Oct 08] FPOM coordination form. **ACTION:** Mackey to send NWW a copy of the form. ***STATUS:*** *completed on 19 October.*

2.41. [Oct 08] MCN fish pump outage. MCN would like to take the fish pumps out of service to have divers inspect the chamber and clean the fish pump stop log sill. **ACTION:** Moody will also send out a coordination form for this activity. He will look at all species passing at the proposed time of year. ***STATUS:*** *a coordination form was e-mailed to FPOM on 14 October.*

2.42. [Oct 08] IHR ITS water pump. **ACTION:** Bailey will provide more details to FPOM. He will include the material the pump line will be made of and how the pumping will occur.

3. Updates.

3.1. BON Fish unit outage on 1 Oct. The fish units were out of service for most of the day due to the BPA transmission line work. The fishway was out of criteria. This was reported in the weekly reports but Fisheries wanted to make sure FPOM was aware.

3.2. NWP/ NWW winter maintenance schedules. No concerns from FPOM. Fredricks was interested in concerns from the Project bios. Moody explained that the Project Fisheries created the schedule. Klatte commented on the BON color coded winter maintenance schedule.

3.3. Galvanized grates- water sample update. Discussed under Action item number **2.3**

3.4. FFU fishway fish capacity analysis completed. Would the AFF task group like to have a special meeting for further discussion? A meeting will be set up to discuss with the CRITFC PIT tag information.

4. Joint Technical Memo discussion. FPAC would like more lead time for coordination. There is already a two week requirement for coordination. Fredricks mentioned there should be a way to "pre-coordinate" certain outages. There was talk of a "blanket" approval for things like outages on the fringe of fish passage season, or setting a number of instances that would be tolerated before individual coordination would have to be resumed. **ACTION:** FPOM will put together the limitations for inclusion into the 2009 FPP. Klatte will take the lead to develop acceptable criteria.

5. FPC's coordination concerns letter. It was suggested the Corps fumbled on this one. The meeting was at JDA in the room with poor acoustics and the change forms were new. People were surprised by the language in the FPP despite the discussion at the FPOM meeting. Fredricks reported on a new procedure he and Michelle DeHart worked out. Benner asked that change forms get sent to all of FPOM so each FPOM representative can make sure the people in their agencies are properly notified. Wills suggested the change forms continue to be posted to the website. Include a section for who reviewed it on the form. Benner commented that the change form wasn't attached to the agenda. Klatte said there wasn't a change form. Fredricks said FPC should be included in all coordination with TMT and with FPOM, even though they are not an Action Agency or a Management Agency.

6. CRITFC's review of PIT tag data for travel time from the AFF to BO3. Move to November.

7. BPA transmission line outages. Affects TDA on 6 November. Schedule is attached to the minutes. A future schedule will just include the outages that will impact those projects within FPOM jurisdiction. Bettin said that FPOM will get a copy of the pertinent outages in the future.

7.1. **TDA 6 November fish unit outage.** Schwartz said he was contacted about the line outage and the need to get it coordinated. Schwartz talked with Fredricks and is now bringing it to FPOM for full concurrence. The request is for one day from 0600-1800 on 6 November. Cordie commented that there may be a way to get around taking the fish units out, but he will need to check on that. Fredricks said the fish unit outage may be an issue, not a huge issue, but there are still fish moving through. **ACTION:** Cordie will check on the option of keeping the fish units in service. **FPOM says ok either way, but if the fish units can be kept in service, keep them in service.** Bettin says he is working internally to get better coordination. Schwartz will work with Don Faulkner to make sure the transmission work is fully coordinated. Wills commented that this is an example of something that the Joint Technical Memo addresses.

8. **JDA TSW outage request.** Klatte explained that Wertheimer needs spill bay 2 closed for two hours so Battelle can get the GPS locations on their forebay trolley pipe. Ten spill bays need to be closed as per the clearance. All are currently closed, except Bay 2. Fenton indicated he can probably get the work done in less than two hours but wanted to coordinate at least that much time. Fredricks would like to have the work done in the afternoon. He said the outage isn't that critical, the flow is important but the north ladder gets only 10-20% of the fish run. There was a question about the two week coordination. **FPOM approved the outage for 10 October.** Wills wanted to know why Battelle didn't get the GPS information at the start of the season. Klatte said he asked and the response was that the data was lost. The pier nose isn't an option due to safety concerns so a boat is the best way. RCC will be asked to issue a teletype for a two hour outage on Friday afternoon.

9. **Kaplan study update**. Fredricks talked with Rod Wittinger on 8 October. LMN, LGS, and LWG are being studied to look at fixing blades on the Kaplan units. Right now units 1 and 2, at each project, will retain movable blades. Unit 3 is still a question at each project. The only other project being looked at is TDA. A maximum of five units are being looked at for fixing blades. The fixed blade units should be spread across the powerhouse. The condensing units, units 13-16, may not be candidates for fixing blades. Bettin added that one of the issues is the components used to move the blades. The question is; do we weld the blades before there is a failure? Bailey is getting more involved in this project; now that Hurson has left. Fredricks explained that this is sort of a pre-emptive strike in the event of a unit failure. A fixed unit would become the last on/first off. FPOM is asked to look at it for fish passage issues. Fredricks didn't see fish passage concerns since the units being looked at for fixing blades are not the priority units used for fish passage. The study isn't yet final, it is only about 60% complete thus far. It will remain on the agenda for updates. Cordie asked if oil loss is one of the motives behind fixing blades. He commented that oil leaks in the fish units have resulted in TDA wanting to look at the possibility of fixing those blades. Sweet mentioned the LGS tailrace is very sensitive to unit operations so maybe fixing blades wouldn't be the best thing for that project. Fredricks said they will also look at unfixing the blade, though it doesn't sound like much of a possibility. Morrill asked if fixed blades impact operation of the unit. The answer is yes, it does; 1% peak efficiency cannot be achieved over a range of water elevations.

10. **SMP condition metrics update.** A meeting will be held following FPOM. McCann gave a quick update. Some progress has been made. FPC is pretty close to identifying the condition metrics. The over-arching goal is to use injury and descaling metrics to diagnose issues at the facilities. Next step is to define metrics carefully so injuries accurately reflect what is going on at the dam and facility. End product is a procedure manual for all sites. Descaling criteria will include partial descaling (<20%) and descaled (>/= 20%). More work needed on the partial descaling definitions. Should 2% descaled be included as partially descaled? User defined buttons will be included. Fredricks asked if the button is per fish. McCann answered yes and he would talk more about it this afternoon. He has a screen shot of how buttons would be laid out. The data entry program is still on track for completion in December.

11. **WDFW update of the jack size.**

12. **MCN dewatering screen monitoring.** Move to November.

13. **LGS orifice back flushing.** Move to November. Moody asked if Hevlin could come out to the project next week. **ACTION:** Moody will contact Hevlin to set up a date.

14. **Unit specific details for FPP inclusion.** Bettin explained this is a request to FPAC. Kiefer had offered FPAC's services to develop the next level of detail to the unit priorities. The idea is to provide more clarity for when units could be taken out of service. Wills reported that this has slipped off the FPAC radar but he will bring it up with Kiefer. Fredricks suggested FPOM could flag critical units. December might be a good time to look at unit priority, planned studies, and potential changes needed to accommodate critical unit outages.

15. **FPOM coordination forms.** Fredricks likes the coordination forms NWP is using for FPOM coordination. He would like to see the same form used for NWW coordination. Moody asked for a template. **ACTION:** Mackey to send NWW a copy of the form.

16. **Other**
    - **16.1. Sturgeon meeting on 6 October**. A group met on 6 October to discuss sturgeon. It was suggested the SLEDs be installed early to keep some sturgeon out of the ladder. Hausmann indicated that the SLEDs share the bulkhead slot so moving them in place and moving them around may be problematic. This year there will be a lot of mobe and de-mobe since we are in all three ladders. It was suggested the SLEDs be tested in one ladder as a test. Hausmann indicated that large sturgeon still get in through the SLEDs so it may not be worth it. Schwartz suggested it may be more work that it is worth as well. Bettin talked about the time needed to remove sturgeon from the ladder so SLEDs might help. There was more discussion about the differences in the configuration of BI and WS ladders. **FPOM suggests installing them in B-branch as a test.**
    - **16.2. MCN pumps.** Fish pump #3 couldn't be dewatered due to stop logs hanging up. The Project would like to have divers come in to look at the fish pump chamber. The divers would look at all three pumps on three different days. Moody said he looked at the historical fish counts for the 23-25th of October. Those look like good days to have the pumps out of service for the dive inspection. Eby said the divers need to move boulders, metal and debris on the stop log sill. He feels the best time to take the pumps out would be from noon to 1700 since fish tend to enter the fishway from 0900 until noon at McNary. **ACTION:** Moody will also send out a coordination form for this activity. Fredricks would like to have the reason why the outage must occur at this time of year included on the coordination form.
        - **16.2.1.** Eby mentioned another fish pump outage request for the first week of December to get new breakers in for the fish pumps.
    - **16.3. LWG Unit 2**. The unit is scheduled to return to service after Christmas. In order to do final testing, Power is needed to run the unit. The only source available is from Unit 1. The contractor would like to do the work no sooner than 31 October and they are willing to do the work at night. Unit 1 would be out of service from 1600 until 0500. Unit 4 would be the one unit running. Bettin commented that this is another example of the type of unit outages we might be able to cover in the FPP ahead of time.
    - **16.4. IHR.** Bailey explained that a broken transformer will be replaced. The ground must be prepared for a concrete pad. The sand must be compacted with water. The easiest water source is the ITS at IHR. The water needed is minimal compared to the amount of water coming through the ITS. The fishway the ITS feeds is currently running higher than FPP criteria so this water removal may benefit the Project. Bettin added that this is a three year project and two transformers have already been burned up. A handout was provided that explained the request in more detail. Fredricks asked if the pump would be submersible. If not, what would the hose be made of and what precautions would be taken to keep scent out of the water. He expressed concerned about scent or contaminants getting in the water. Bettin asked if it would be preferable to remove the pipe each day, rather than leave it in the ITS for 15 days. **ACTION:**

Bailey will provide more details to FPOM. He will include the material the pump line will be made of and how the pumping will occur.

16.5. BON BGS dive. Schwartz reminded FPOM about the dive for the BGS in October. It is currently planned for 20-22 October. There would be a maximum of two units and the fish units at PH2 or all PH2 main units would be shut down. Fredricks would like to minimize operations at PH1 as much as possible. He would like to see as much flow at PH2 as much as possible. Schwartz said the hours will be daylight hours. The dive is occurring in autumn this year so there can be time to evaluate any damage. Fredricks asked if this coordination would go through Mackey. Klatte said it would.

16.5.1. Schwartz mentioned that the outage may be extended so USGS researchers can get in the forebay to retrieve equipment. The divers didn't want the researchers in the vicinity while they are underwater. Fredricks expressed concern with fallback through the PH1 units and the proposed operation would nearly fully load PH1.

17. Task Group updates

17.1. Fishway velocity (***Chair-Cordie****, Fredricks, Lorz, Meyer, Mackey*).

17.2. Lamprey (***Chair-Cordie****, Clugston, Dykstra, Lorz, Mackey, Meyer, Moody, Moser, Peery, Rerecich, Zyndol*)

17.3. PH2 VBSs (***Chair- Hausmann,*** *Benner, Fredricks, Klatte, Lorz, Mackey, Meyer, Wills*).

17.4. Pinnipeds (***Chair-Stansell****, Bettin, Benner, Brown, Fredricks, Hausmann, Kruger, Stephenson, Richards, Wills*)

17.5. TIES (***Chair-Klatte****, Bettin, Benner, Fredricks, Kruger, Mackey, Schwartz, Wills*)

17.6. Water Quality (***Chair- Klatte***)

17.7. Smolt Monitoring metrics. Meeting after the FPOM meeting.

18. FPP proposed changes.

18.1. BON sturgeon language. (incorporates changes from May 2008 mtg)

18.2. BON 2.4.2.2.n.1 relocation.

18.3. TDA and JDA velocity measurement language.

18.4. Appendix G- BON protocols for holding lamprey.

18.5. BON shad passage mode criteria.

18.6. Appendix A- increasing the 72 hour heat run time.

18.7. Appendix G- BON valve numbering correction.

18.8. BON 2.1.2- include jacks in salmonids counts for splitting flows.

18.9. BON 2.1.2- include preference for mid to upper 1% turbine operations during split flows.

18.10. Table BON-11- include split flow unit priority row to the table.

18.11. 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.

18.12. JDA 2.5.1.2.b.1- remove language.

19. Next Meeting- 13 November at PSMFC office in Portland. Adjourned at 12:30.

20. FPP approved/rejected changes from March 2008- present.

20.1. LGS spill pattern. **Approved** at the April FPOM.

20.2. LMN spill pattern. **Approved** at the April FPOM**.**

20.3. MCN unit priority. **Approved** at the April FPOM.

20.4. MCN spill pattern. **Approved** at the April FPOM.

20.5.

20.6. TDA ITS closure. **Approved** at the April FPOM

20.7. BON 50K dates. **Approved** at the April FPOM.

20.8. JDA turbine unit 5. **Approved w/changes** at the May FPOM.

20.9. JDA SMF PIT tag shutdown date. **Approved** at the May FPOM. Changed at the August FPOM, back to the original language.

20.10. Voluntary v involuntary spill definitions. RCC recommended against including these definitions in the FPP at the June FPOM**.**

20.11. IHR 1% tables. **Approved** at the June FPOM.

20.12. TDA spill pattern change. **Approved** at the June FPOM**.**

20.13. App. G- BON protocols section 4.2. **Approved w/ changes** at the July FPOM**.**

20.14. App. G-BON picket lead operations at high temps. **Rejected** at 16 July meeting.

20.15. App. G- BON protocols for trapping lamprey at water temps of 70°-72°F. **Approved** via e-mail coordination in early August.

20.16. BON 2.1.2- include jacks in salmonids counts for splitting flows. **Approved** at Sep. FPOM.

21. Finalized results from this meeting.

21.1. FPOM suggests installing SLEDs in B-branch as a test to keep sturgeon out.

21.2. FPOM says ok to the 6 November outage at TDA, but if the fish units can be kept in service, keep them in service.

21.3. FPOM approved the JDA TSW/ spill way outage for 10 October.

21.4. FPOM suggested December might be a good time to look at unit priority, planned studies, and potential changes needed to accommodate critical unit outages.

22. The following documents were provided or discussed.

22.1. *Agenda, Fish Passage O&M Coordination Team*.

22.2. *JDA sampling memo-* ***page 10***

22.3. *FFU analysis of fishway capacity for the AFF-* ***pages 11-20***

22.4. *NWP/NWW Winter maintenance schedules-* ***pages 21-27***

22.5. *Joint technical memo regarding coordination-* ***pages 28-29***

22.6. *FPC memo regarding FPP changes to smolt monitoring hours-* ***page 30***

22.7. *NWW 3 September Transport/ SMP meeting documents-* ***pages 31-32***

22.8. *FPP change forms-* ***pages 33-36***

22.9. *FPOM Calendar-* ***pages 37-40***

22.10. *NWW FPOM status handout-* ***pages 41-42***

22.11. *SMP metrics handout-* ***pages 43-45***

22.12. *SMP touchscreen image-* ***page 46***

23. SMP condition metrics meeting. Began at 13:15. Attendees were:

Last	First	Agency	Office	Email
Bailey	John	USACE	509-527-7123	John.c.bailey@usace.army.mil
Ballinger	Dean	PSMFC	509-427-2725	deanb@gorge.net
Benner	David	FPC	503-230-7564	dbenner@fpc.org
Chane	Ian	USACE	503-808-4305	Ian.b.chane@usace.army.mil
Dykstra	Tim	USACE	509-527-7125	Timothy.A.Dykstra@usace.army.mil
Eby	Brad	USACE	541-922-2263	Brad.w.eby@usace.army.mil
Fredricks	Gary	NOAA	503-231-6855	Gary.fredricks@noaa.gov
Klatte	Bern	USACE	503-808-4318	Bernard.a.klatte@usace.army.mil
Layng	Les	WDFW	541-922-3630	
Martinson	Rick	PSMFC	541-296-8989	rickdm@gorge.net
McCann	Jerry	FPC	503-230-4291	jmccann@fpc.org
Mensik	Fred	WDFW	509-843-3084	
Meyer	Ed	NOAA	503-230-5411	Ed.meyer@noaa.gov
Morrill	Charles	WDFW	360-902-2747	
Moody	Greg	USACE	509-527-7124	Gregory.p.moody@usace.army.mil
Spurgeon	Bill	USACE	509-282-7211	William.f.spurgeon@usace.army.mil
Tudor	Rosanna	WDFW	541-922-3630	
Wills	Dave	USFWS	360-604-2500	David_wills@fws.gov

Dykstra started by explaining that NWW needs to get fish into barges and trucks in a timely manner so they need to get the information and get the fish on their way. The purpose of this meeting is to review

definitions and the information McCann provided. Before we all leave today, we will know the next step, the next meeting and where we are headed.

McCann provided a handout defining the metrics. It is a starting point with general definitions. There are condition categories and under each category are the specific metrics.

INJURY (head, body, fin)
Deformities were discussed. Deformities should not be included in injury. Injuries should, ideally, reflect those injuries related to the hydro-system through shear force or mechanical injury. Deformities may skew those injuries.

Head injuries, such as abrasion, would be in OTHER. If there were a high instance of such cases, then FPC would have a button to capture that information.

Pop-eye was a big discussion topic. There was a lot of discussion about diseases associated with pop-eye. Currently it is in the INJURY category. The outcome of the discussion was to move pop-eye to OTHER, unless it can be identified with a disease.

Body injury has language that suggests fungus may be associated with an injury. The decision was to strike that language. Fungus will be captured under OTHER.

Fin injuries need to be defined and photos provided with examples. Fredricks commented that fin injury usually doesn't mean anything. It is hard to tie it to anything specific. Mensik commented that it appears all fin injuries are being lumped together. There was a lot of discussion about fin pinkness and whether or not it should be considered a disease, injury, or other. Dykstra wants to make sure the fin pinkness is not lumped in with injury. McCann thought we had agreed to keep fin pinkness separate but still consider it an injury. There was not consensus on that. It was suggested it comes from handling stress. Tudor gave an example of hemorrhaging as a stress response with GBT sampling during warm water sampling. In this case, it is a handling issue and shouldn't be attributed to the facility.

Predation marks. There was talk about different predation marks and how they are recorded and what they look like.

The next meeting will include photo examples of the different metrics and a discussion of the touch screen.

McCann wants people to think about how they would like the touch screen to look. Wills asked if all the touch screens would look the same and if so, is it really necessary. This will be discussed in November.

Date: Oct 8, 2008
From: Bob Cordie project Biologist, The Dalles/John Day

Re; Justification for Fish Passage Plan 2008 change to reduction of condition sampling to 6hr sampling twice weekly.

The initial reason for sampling reduction at all facilities during periods of high temperatures (>70F) is to reduce potential fish stress. Per Fish Passage Plan 2008, condition sampling in the John Day Smolt Monitor Facility was reduced from daily, 24hr collection subsampling to twice weekly 6hr collection subsampling.
The justification to reduce from 24hr to 6hr sampling is to reduce the total number of fish that need to go over the dry separator, maintain more fish in 30cfs flow vs 3 cfs flow, reduce travel time in flume to river and reduce the amount of time sampled fish need to be in the holding tank prior to sampling.
Temperatures collected in the holding tanks revealed up to 3F fluctuation, resulting in higher potential of temperature exposure stress.
Condition sampling provides the project with an indicator of juvenile bypass system problems that may cause fish injury. Primary injury concerns are from debris plugging various areas of the system. Given that this sampling reduction is primarily during the lowest debris times of year, our comprehensive inspection procedures per Fish Passage Plan guidance and the historical record of condition sampling not indicating system problems in the past, we felt the reduction of sampling from 24hr collection to 6 hour collection was an acceptable risk.

Sincerely,
Bob Cordie

1 October 2008

To: David Clugston, Bernard Klatte, Gary Fredricks, Tom Lorz, Dave Wills, Jonathan Rerecich, Tammy Mackey, and Robert Stansell of FFDRWG

From: Fish Field Unit (John Dalen)

Subject: Reply to the following request; "In an effort to base the AFF picket lead criteria on something more than a gut feeling, the Region asked that we figure out the diurnal distribution by adult and jack salmonids (by species and adult/jack) and these be clumped by month. In addition to distribution, we also need to figure out the capacity of our Washington Shore and our AFF entrance ladder. Dave Wills mentioned that the hatcheries used the fish capacity formula established by Milo C Bell and it was recommended we use that same formula to figure the capacity of our fishways. The following weights were agreed to for each species, adult steelhead 8 lbs, adult coho 5 lbs, adult chinook 20 lbs, and jacks 4 lbs."

Fish Holding Capacity of the Bonneville Washington Shore Fishladder

Milo Bell (Fisheries Handbook of Engineering Requirements and Biological Criteria) set the space requirement for fish in pools at 0.2 cubic feet per pound of fish. The weir pools in the Bonneville Washington shore fishladder each have 1553.4 cubic feet of volume:

Net Volume = raw volume – weir volume – left baffle volume – right baffle volume;
Raw volume = 1680 $feet^3$ = 24' (wide) x 10' (long) x 7' (deep, at 1' of water flowing over the overflow notches);
Weir volume = 112.6 $feet^3$ = 24' (wide) x 0.67' (long) x 7' (deep);
Left side baffle volume = 7 $feet^3$ = 0.67' (wide) x 1.5' (long) x 7' (deep);
Right side baffle volume = 7 $feet^3$ = 0.67' (wide) x 1.5' (long) x 7' (deep).

At 0.2 cubic feet per pound of fish, each weir pool can hold 7767 pounds of fish:

388 adult chinook (at 20 lbs each), or
971 steelhead (at 8 lbs each), or
1553 adult coho (at 5 lbs each), or
1942 jack chinook or jack coho (at 4 lbs each), or
any combination of these totaling 7767 pounds of fish.

The weir pools in the Bonneville Washington shore.AFF fishladder each have 515.5 cubic feet of volume:

Net Volume = raw volume – weir volume –baffle volume;
Raw volume = 560 $feet^3$ = 8' (wide) x 10' (long) x 7' (deep, at 1' of water flowing over the overflow notches);
Weir volume = 37.5 $feet^3$ = 8' (wide) x 0.67' (long) x 7' (deep);
Baffle volume = 7 $feet^3$ = 0.67' (wide) x 1.5' (long) x 7' (deep).

At 0.2 cubic feet per pound of fish, each weir pool can hold 2578 pounds of fish:

129 adult chinook (at 20 lbs each), or
322 steelhead (at 8 lbs each), or
516 adult coho (at 5 lbs each), or
645 jack chinook or jack coho (at 4 lbs each), or
any combination of these totaling 2578 pounds of fish.

Milo Bell (Fisheries Handbook of Engineering Requirements and Biological Criteria), using a model fish ladder at the Bonneville Hydraulics Laboratory, also set the average travel times for fish through fishways at 2.5 minutes to 4 minutes per pool. How well the model he was using fits today's Bonneville Washington shore fishladder is uncertain, especially under ongoing working conditions.

Fish running through the Bonneville Washington shore fishladder at holding capacity and at the following travel rates, assuming no other limits on fish movement within the ladder, yields the following numbers of fish

At 1 minute per pool travel rate,
23,280 adult chinook can ascend pool to pool each hour, or
58,260 steelhead can ascend pool to pool each hour, or
93,180 adult coho can ascend pool to pool each hour, or
116,520 jack (chinook or coho) can ascend pool to pool each hour, or
any combination of these totaling 7767 pounds of fish.

At 2.5 minutes per pool travel rate,
9,312 adult chinook can ascend pool to pool each hour, or
23,304 steelhead can ascend pool to pool each hour, or
37,272 adult coho can ascend pool to pool each hour, or
46,608 jack (chinook or coho) can ascend pool to pool each hour, or
any combination of these totaling 7767 pounds of fish.

At 4 minutes per pool travel rate,
5,820 adult chinook can ascend pool to pool each hour, or
14,565 steelhead can ascend pool to pool each hour, or
23,295 adult coho can ascend pool to pool each hour, or
29,130 jack (chinook or coho) can ascend pool to pool each hour, or
any combination of these totaling 7767 pounds of fish.

Fish running through the Bonneville Washington shore.AFF fishladder at both holding capacity and at the following travel rates, assuming no other limits on fish movement within the ladder, yields the following numbers of fish

At 1 minute per pool travel rate,
7,740 adult chinook can ascend pool to pool each hour, or
19,320 steelhead can ascend pool to pool each hour, or
30,960 adult coho can ascend pool to pool each hour, or
38,700 jack (chinook or coho) can ascend pool to pool each hour, or
any combination of these totaling 7767 pounds of fish.

At 2.5 minutes per pool travel rate,
3,096 adult chinook can ascend pool to pool each hour, or
7,728 steelhead can ascend pool to pool each hour, or
12,384 adult coho can ascend pool to pool each hour, or
15,480 jack (chinook or coho) can ascend pool to pool each hour, or
any combination of these totaling 7767 pounds of fish.

At 4 minutes per pool travel rate,

1,935 adult chinook can ascend pool to pool each hour, or
4,830 steelhead can ascend pool to pool each hour, or
7,740 adult coho can ascend pool to pool each hour, or
9,675 jack (chinook or coho) can ascend pool to pool each hour, or
any combination of these totaling 7767 pounds of fish.

Model B

Studies Fish Field Unit conducted in the 1990s showed that most returning salmon swim up the Washington shore fishladder through the two submerged orifice entrances to each pool and that they mostly swim through the submerged orifices single file.

Assuming returning salmon are swimming single file nose-to-tail, at the rate of 1 minute per pool (6 seconds per foot of travel since the pools are 10' long each), the orifices separating each pool in the Washington shore fishladder allow 1200 feet of net forward progress each hour (each orifice is allows 600 feet, at 3600 seconds an hour divided by 6 seconds per foot of travel per fish). Following these assumptions, in the Bonneville Washington shore fishladder

800 18 inch fish can ascend pool to pool each hour, or
600 24 inch fish can ascend pool to pool each hour, or
480 30 inch fish can ascend pool to pool each hour, or
400 36 inch fish can ascend pool to pool each hour, or
343 42 inch fish can ascend pool to pool each hour, or
any combination of sizes totaling 1200 feet of net forward progress each hour.

At the rate of 2.5 minutes per pool (15 seconds per foot, 480 feet net progress through 2 orifices) and all of these same assumptions, in the Bonneville Washington shore fishladder

320 18 inch fish can ascend pool to pool each hour, or
240 24 inch fish can ascend pool to pool each hour, or
192 30 inch fish can ascend pool to pool each hour, or
160 36 inch fish can ascend pool to pool each hour, or
137 42 inch fish can ascend pool to pool each hour, or
any combination of sizes totaling 480 feet of net forward progress each hour.

At the rate of 4.0 minutes per pool (24 seconds per foot, 300 feet net progress through 2 orifices) and all of these same assumptions, in the Bonneville Washington shore fishladder

200 18 inch fish can ascend pool to pool each hour, or
150 24 inch fish can ascend pool to pool each hour, or
120 30 inch fish can ascend pool to pool each hour, or
100 36 inch fish can ascend pool to pool each hour, or
86 42 inch fish can ascend pool to pool each hour, or
any combination of sizes totaling 300 feet of net forward progress each hour.

For the Washington shore.AFF fishladder, since it has only one orifice per weir, half these numbers.

The Effect of a Blockage

If there are no limits to fish movement in the Bonneville Washington shore (and .AFF) fishladders and a blockage occurred when the number of fish in the fishladder was at holding

capacity, the fish ladder would immediately be full. If a blockage occurred with the number of fish in the fishladder at half of holding capacity, the ladder would fill in travel time times the inverse of ½ (or 8 minutes if fish are taking 4 minutes per pool). Etc.

If there are limits to fish movement in the Bonneville Washington shore (and .AFF) fishladders, as Model B assumes, a blockage in the Washington shore fishladder will cause the pools below the blockage to fill to capacity in a matter of hours. For example, if steelhead averaging 30 inches are ascending the ladder at 480 per hour (at 1 minute per pool), to 192 per hour (at 2.5 minutes per pool), to 120 per hour (at 4 minutes per pool), **pool holding capacity (971 steelhead) will be reached in 2.0 hours to 5.1 hours to 8.1 hours**. If the Washington shore.AFF fishladder is open, pool holding capacity in the Washington shore.AFF fishladder steelhead averaging 30 inches are ascending the ladder at 240 per hour (at 1 minute per pool), to 96 per hour (at 2.5 minutes per pool), to 60 per hour (at 4 minutes per pool), **pool holding capacity (322 steelhead) will be reached in 1.3 hours to 3.4 hours to 5.4 hours**. If the fish are running even harder (traveling faster than 1 minute per pool, crowding through the orifices more than one at a time, and/or using the orifice notches), the ladders will fill faster.

Table 1: Hourly average numbers of adult Chinook (CA), jack Chinook (CJ), adult Coho (KA), jack Coho (KJ), Steelhead, and Sockeye counted and factored in the Bonneville Washington shore fishladder, grouped by month each of the past 18 months.

Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	September avg	1	119	49	4	13	1	52	0
2008	September avg	2	660	324	47	143	13	133	0
2008	September avg	3	500	205	43	110	12	130	0
2008	September avg	4	380	124	24	68	12	152	0
2008	September avg	5	370	103	19	79	12	157	0
2008	September avg	6	347	96	19	72	10	150	0
2008	September avg	7	504	197	25	83	8	191	0
2008	September avg	8	594	266	32	97	7	192	0
2008	September avg	9	714	346	47	124	11	186	0
2008	September avg	10	785	406	48	134	11	186	0
2008	September avg	11	867	467	49	143	12	196	0
2008	September avg	12	793	440	50	132	11	160	0
2008	September avg	13	718	410	46	107	12	143	0
2008	September avg	14	638	361	42	91	10	134	0
2008	September avg	15	496	308	30	60	7	91	0
2008	September avg	16	165	119	7	10	1	28	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	August avg	1	100	41	5	2	0	52	0
2008	August avg	2	223	76	14	11	1	121	0
2008	August avg	3	122	40	7	7	1	67	0
2008	August avg	4	134	46	8	6	1	73	0
2008	August avg	5	198	58	13	10	1	116	0
2008	August avg	6	205	59	11	12	1	122	0
2008	August avg	7	231	82	13	11	1	124	0
2008	August avg	8	258	96	14	11	1	136	0
2008	August avg	9	266	106	17	11	1	131	0
2008	August avg	10	279	108	17	11	1	142	0

2008	August avg	11	255	100	14	8	1	132	0
2008	August avg	12	253	103	16	8	1	125	0
2008	August avg	13	231	98	16	10	1	106	0
2008	August avg	14	198	91	11	7	1	88	0
2008	August avg	15	161	82	11	6	1	61	0
2008	August avg	16	98	65	6	2	0	25	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	July avg	1	242	31	4	0	0	163	44
2008	July avg	2	206	26	5	0	0	163	12
2008	July avg	3	126	13	2	0	0	85	26
2008	July avg	4	217	19	4	0	0	148	46
2008	July avg	5	232	28	4	0	0	152	48
2008	July avg	6	188	24	2	0	0	118	44
2008	July avg	7	204	28	4	0	0	130	42
2008	July avg	8	238	29	6	0	0	162	41
2008	July avg	9	249	32	6	0	0	170	41
2008	July avg	10	279	30	5	0	0	210	34
2008	July avg	11	354	42	6	0	0	266	40
2008	July avg	12	318	35	6	0	0	242	35
2008	July avg	13	282	30	4	0	0	217	31
2008	July avg	14	245	31	4	0	0	179	31
2008	July avg	15	161	30	2	0	0	103	26
2008	July avg	16	120	29	4	0	0	61	26
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	June avg	1	247	62	5	0	0	11	169
2008	June avg	2	136	62	10	0	0	6	58
2008	June avg	3	235	42	6	0	0	11	176
2008	June avg	4	322	46	6	0	0	17	253
2008	June avg	5	343	48	7	0	0	17	271
2008	June avg	6	330	48	6	0	0	14	262
2008	June avg	7	395	56	8	0	0	17	314
2008	June avg	8	412	72	10	0	0	18	312
2008	June avg	9	376	74	11	0	0	16	275
2008	June avg	10	384	77	12	0	0	17	278
2008	June avg	11	373	90	14	0	0	19	250
2008	June avg	12	361	92	16	0	0	19	234
2008	June avg	13	352	92	14	0	0	19	227
2008	June avg	14	370	91	14	0	0	18	247
2008	June avg	15	393	108	14	0	0	18	253
2008	June avg	16	372	101	16	0	0	16	239
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	May avg	1	71	60	10	0	0	1	0
2008	May avg	2	100	82	17	0	0	1	0
2008	May avg	3	68	56	11	0	0	1	0
2008	May avg	4	78	66	10	0	0	1	1
2008	May avg	5	85	73	11	0	0	1	0
2008	May avg	6	96	82	12	0	0	2	0
2008	May avg	7	95	82	12	0	0	1	0

2008	May avg	8	114	95	17	0	0	2	0
2008	May avg	9	126	106	18	0	0	2	0
2008	May avg	10	150	121	25	0	0	4	0
2008	May avg	11	148	119	25	0	0	4	0
2008	May avg	12	162	133	25	0	0	4	0
2008	May avg	13	187	151	32	0	0	4	0
2008	May avg	14	201	162	35	0	0	4	0
2008	May avg	15	209	167	38	0	0	4	0
2008	May avg	16	194	160	32	0	0	2	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	April avg	1	5	5	0	0	0	0	0
2008	April avg	2	13	12	0	0	0	1	0
2008	April avg	3	21	20	0	0	0	1	0
2008	April avg	4	19	18	0	0	0	1	0
2008	April avg	5	25	24	0	0	0	1	0
2008	April avg	6	31	30	0	0	0	1	0
2008	April avg	7	44	43	0	0	0	1	0
2008	April avg	8	54	52	0	0	0	2	0
2008	April avg	9	61	59	0	0	0	2	0
2008	April avg	10	78	74	0	0	0	4	0
2008	April avg	11	95	92	1	0	0	2	0
2008	April avg	12	73	70	1	0	0	2	0
2008	April avg	13	65	62	1	0	0	2	0
2008	April avg	14	63	60	1	0	0	2	0
2008	April avg	15	62	60	1	0	0	1	0
2008	April avg	16	32	32	0	0	0	0	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	March avg	1	0	0	0	0	0	0	0
2008	March avg	2	0	0	0	0	0	0	0
2008	March avg	3	1	0	0	0	0	1	0
2008	March avg	4	0	0	0	0	0	0	0
2008	March avg	5	1	0	0	0	0	1	0
2008	March avg	6	1	0	0	0	0	1	0
2008	March avg	7	2	0	0	0	0	2	0
2008	March avg	8	1	0	0	0	0	1	0
2008	March avg	9	2	0	0	0	0	2	0
2008	March avg	10	2	0	0	0	0	2	0
2008	March avg	11	3	1	0	0	0	2	0
2008	March avg	12	2	1	0	0	0	1	0
2008	March avg	13	1	0	0	0	0	1	0
2008	March avg	14	1	0	0	0	0	1	0
2008	March avg	15	1	0	0	0	0	1	0
2008	March avg	16	1	0	0	0	0	1	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	February avg	1	0	0	0	0	0	0	0
2008	February avg	2	0	0	0	0	0	0	0
2008	February avg	3	0	0	0	0	0	0	0
2008	February avg	4	0	0	0	0	0	0	0

2008	February avg	5	0	0	0	0	0	0	0
2008	February avg	6	0	0	0	0	0	0	0
2008	February avg	7	0	0	0	0	0	0	0
2008	February avg	8	0	0	0	0	0	0	0
2008	February avg	9	0	0	0	0	0	0	0
2008	February avg	10	1	0	0	0	0	1	0
2008	February avg	11	0	0	0	0	0	0	0
2008	February avg	12	0	0	0	0	0	0	0
2008	February avg	13	1	0	0	0	0	1	0
2008	February avg	14	0	0	0	0	0	0	0
2008	February avg	15	0	0	0	0	0	0	0
2008	February avg	16	0	0	0	0	0	0	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2008	January avg	1	0	0	0	0	0	0	0
2008	January avg	2	0	0	0	0	0	0	0
2008	January avg	3	0	0	0	0	0	0	0
2008	January avg	4	0	0	0	0	0	0	0
2008	January avg	5	0	0	0	0	0	0	0
2008	January avg	6	0	0	0	0	0	0	0
2008	January avg	7	0	0	0	0	0	0	0
2008	January avg	8	0	0	0	0	0	0	0
2008	January avg	9	1	0	0	0	0	1	0
2008	January avg	10	1	0	0	0	0	1	0
2008	January avg	11	1	0	0	0	0	1	0
2008	January avg	12	0	0	0	0	0	0	0
2008	January avg	13	0	0	0	0	0	0	0
2008	January avg	14	0	0	0	0	0	0	0
2008	January avg	15	0	0	0	0	0	0	0
2008	January avg	16	0	0	0	0	0	0	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	December avg	1	0	0	0	0	0	0	0
2007	December avg	2	0	0	0	0	0	0	0
2007	December avg	3	0	0	0	0	0	0	0
2007	December avg	4	1	0	0	0	0	1	0
2007	December avg	5	1	0	0	0	0	1	0
2007	December avg	6	1	0	0	0	0	1	0
2007	December avg	7	4	0	0	0	0	4	0
2007	December avg	8	4	0	0	0	0	4	0
2007	December avg	9	2	0	0	0	0	2	0
2007	December avg	10	2	0	0	0	0	2	0
2007	December avg	11	2	0	0	0	0	2	0
2007	December avg	12	2	0	0	0	0	2	0
2007	December avg	13	0	0	0	0	0	0	0
2007	December avg	14	0	0	0	0	0	0	0
2007	December avg	15	0	0	0	0	0	0	0
2007	December avg	16	0	0	0	0	0	0	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	November avg	1	0	0	0	0	0	0	0

2007	November avg	2	0	0	0	0	0	0	0
2007	November avg	3	8	1	0	5	0	2	0
2007	November avg	4	16	1	0	10	0	5	0
2007	November avg	5	6	0	0	4	0	2	0
2007	November avg	6	11	1	0	6	0	4	0
2007	November avg	7	11	1	0	6	0	4	0
2007	November avg	8	13	1	0	8	0	4	0
2007	November avg	9	12	1	0	7	0	4	0
2007	November avg	10	15	2	0	8	0	5	0
2007	November avg	11	16	1	0	10	0	5	0
2007	November avg	12	13	2	0	7	0	4	0
2007	November avg	13	12	1	0	7	0	4	0
2007	November avg	14	3	1	0	1	0	1	0
2007	November avg	15	2	0	0	1	0	1	0
2007	November avg	16	0	0	0	0	0	0	0

Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	October avg	1	12	5	1	1	0	5	0
2007	October avg	2	24	6	2	10	1	5	0
2007	October avg	3	195	47	25	84	5	34	0
2007	October avg	4	81	19	13	28	2	19	0
2007	October avg	5	68	11	10	23	1	23	0
2007	October avg	6	84	10	8	47	1	18	0
2007	October avg	7	81	12	7	47	1	14	0
2007	October avg	8	97	16	7	56	1	17	0
2007	October avg	9	126	24	14	68	2	18	0
2007	October avg	10	158	32	17	83	2	24	0
2007	October avg	11	185	47	22	82	4	30	0
2007	October avg	12	176	50	19	78	4	25	0
2007	October avg	13	132	40	14	59	2	17	0
2007	October avg	14	97	32	8	42	2	13	0
2007	October avg	15	16	12	0	2	0	2	0
2007	October avg	16	1	1	-1	0	0	1	0

Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	September avg	1	79	32	6	14	1	26	0
2007	September avg	2	442	167	74	115	6	80	0
2007	September avg	3	378	122	85	89	5	77	0
2007	September avg	4	334	84	66	76	5	103	0
2007	September avg	5	308	70	56	74	4	104	0
2007	September avg	6	308	82	56	76	5	89	0
2007	September avg	7	476	154	89	119	4	110	0
2007	September avg	8	526	194	97	121	4	110	0
2007	September avg	9	635	259	128	134	5	109	0
2007	September avg	10	749	335	146	133	5	130	0
2007	September avg	11	638	298	110	114	4	112	0
2007	September avg	12	558	262	91	97	4	104	0
2007	September avg	13	497	224	88	86	4	95	0
2007	September avg	14	449	209	70	83	4	83	0
2007	September avg	15	304	157	32	61	1	53	0

2007	September avg	16	65	53	-8	7	0	13	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	August avg	1	109	19	4	2	0	84	0
2007	August avg	2	317	47	11	13	1	245	0
2007	August avg	3	147	22	5	7	0	113	0
2007	August avg	4	170	20	8	10	1	131	0
2007	August avg	5	307	24	8	12	0	263	0
2007	August avg	6	365	37	10	14	0	304	0
2007	August avg	7	447	50	14	17	1	365	0
2007	August avg	8	448	64	13	14	1	356	0
2007	August avg	9	396	67	10	13	1	305	0
2007	August avg	10	363	62	8	11	1	281	0
2007	August avg	11	352	60	8	10	0	274	0
2007	August avg	12	306	49	7	7	1	242	0
2007	August avg	13	289	53	8	7	1	220	0
2007	August avg	14	221	42	5	7	0	167	0
2007	August avg	15	155	36	5	6	0	108	0
2007	August avg	16	61	22	1	2	0	36	0
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	July avg	1	163	29	6	0	0	112	16
2007	July avg	2	134	22	6	0	0	101	5
2007	July avg	3	56	11	5	0	0	34	6
2007	July avg	4	75	14	6	0	0	48	7
2007	July avg	5	103	16	7	0	0	72	8
2007	July avg	6	126	19	8	0	0	92	7
2007	July avg	7	144	23	11	0	0	102	8
2007	July avg	8	182	31	11	0	0	130	10
2007	July avg	9	165	24	13	0	0	116	12
2007	July avg	10	152	25	12	0	0	103	12
2007	July avg	11	165	28	11	0	0	115	11
2007	July avg	12	161	26	11	0	0	114	10
2007	July avg	13	115	20	10	0	0	77	8
2007	July avg	14	102	23	7	0	0	65	7
2007	July avg	15	69	20	7	0	0	37	5
2007	July avg	16	56	20	6	0	0	25	5
Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	June avg	1	87	31	5	0	0	8	43
2007	June avg	2	72	37	12	0	0	6	17
2007	June avg	3	44	20	8	0	0	4	12
2007	June avg	4	37	13	6	0	0	4	14
2007	June avg	5	46	14	8	0	0	5	19
2007	June avg	6	50	18	6	0	0	8	18
2007	June avg	7	66	28	10	0	0	8	20
2007	June avg	8	90	42	14	0	0	10	24
2007	June avg	9	144	68	20	0	0	16	40
2007	June avg	10	151	67	25	0	0	17	42
2007	June avg	11	150	67	20	0	0	17	46
2007	June avg	12	132	60	17	0	0	12	43

2007	June avg	13	118	55	14	0	0	12	37
2007	June avg	14	103	50	12	0	0	10	31
2007	June avg	15	96	47	11	0	0	8	30
2007	June avg	16	81	41	10	0	0	6	24

Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	May avg	1	28	22	5	0	0	1	0
2007	May avg	2	55	37	17	0	0	1	0
2007	May avg	3	31	22	8	0	0	1	0
2007	May avg	4	22	14	7	0	0	1	0
2007	May avg	5	26	18	7	0	0	1	0
2007	May avg	6	37	29	7	0	0	1	0
2007	May avg	7	62	48	13	0	0	1	0
2007	May avg	8	115	82	29	0	0	4	0
2007	May avg	9	98	64	30	0	0	4	0
2007	May avg	10	89	56	29	0	0	4	0
2007	May avg	11	80	55	23	0	0	2	0
2007	May avg	12	92	62	28	0	0	2	0
2007	May avg	13	100	66	30	0	0	4	0
2007	May avg	14	97	67	28	0	0	2	0
2007	May avg	15	83	55	26	0	0	2	0
2007	May avg	16	65	46	17	0	0	2	0

Year	Month	Hour	Total	CA	CJ	KA	KJ	Steelhead	Sockeye
2007	April avg	1	2	2	0	0	0	0	0
2007	April avg	2	20	20	0	0	0	0	0
2007	April avg	3	14	14	0	0	0	0	0
2007	April avg	4	13	13	0	0	0	0	0
2007	April avg	5	13	13	0	0	0	0	0
2007	April avg	6	15	14	0	0	0	1	0
2007	April avg	7	26	24	1	0	0	1	0
2007	April avg	8	36	34	1	0	0	1	0
2007	April avg	9	39	36	2	0	0	1	0
2007	April avg	10	37	35	1	0	0	1	0
2007	April avg	11	45	43	1	0	0	1	0
2007	April avg	12	49	46	2	0	0	1	0
2007	April avg	13	57	54	2	0	0	1	0
2007	April avg	14	75	72	2	0	0	1	0
2007	April avg	15	78	73	4	0	0	1	0
2007	April avg	16	59	56	2	0	0	1	0

CENWP-OD-B

MEMORANDUM FOR THE RECORD

SUBJECT: BONNEVILLE DAM WINTER FISHWAY MAINTENANCE 2008/2009.

1. This is a working document detailing Bonneville Dam winter fishway maintenance, 2008/2009. Reviewers can expect changes as we approach the winter maintenance season.

2. ADULT FISHWAYS

2.1. Fish Unit Outages

2.1.1. Fish Unit 1: **01 Dec 08 – 20 Jan 09**, annual overhaul.
2.1.2. Fish Unit 2: **21 Jan 09 – 28 Feb 09**, annual overhaul.

2.2. Bradford Island Ladder (A&B-Branches 01 Dec 08 – 09 Jan 09)

2.2.1. Go to orifice flow on **01 Dec 08**
2.2.2. Dewater to tailwater on **03 Dec 08**
2.2.3. Dewater diffuser pools on **04 Dec 08.**
2.2.4. Inspect Bradford Island exit trashrack.
2.2.5. Maintain the LPS.
2.2.6. Adjust the brush cleaner so it cleans the crowder.
2.2.7. Repair metal hanging off upstream edge of crowder.
2.2.8. Paint border of crowder white.
2.2.9. Remove algae from window and crowder.
2.2.10. Provide additional strapping for PIT tag equipment, as necessary. (Electricians)
2.2.11. Removal of weeds around the PIT tag room and transceiver enclosures.
2.2.12. Inspect PH1 PCC **15 Jan 09**. (ROV inspection)
2.2.13. Install SLEDS or acoustic deterrents by **01 Feb 08**
2.2.14. Calibrate B-Branch water elevation sensors.
2.2.15. Dredge BI fish exit. 2009/2010 (contractor)

A-Branch specific items

2.2.16. Install south end bulkhead
2.2.17. Inspect and repair FV1-1. (Include a NWP structural engineer).
2.2.18. Calibrate CC, TW, and entrance gate transducers.
2.2.19. Repair FG2-22A and FG2-19.
2.2.20. Repair FG3-5,(mechanics/electricians)
2.2.21. Develop plan for removal of FV3-8.
2.2.22. Engineer plan for filling FG2-2 and FG2-3.
2.2.23. Remove wooden bulkhead at south end of PCC. 2009-2010

2.3. Adult Fish Facility (29 Dec 08-1 Mar 09)

2.3.1. Go to orifice flow on **29 Dec 08**
2.3.2. Chase fish to the ladder on **07 Jan 09**
2.3.3. Dewater exit section on **07 Jan09**
2.3.4. Dewater entrance on **12 Jan 09**
2.3.5. Routine maintenance.
2.3.6. PM bridge crane.
2.3.7. Repair broken gate cranks and pulleys.
2.3.8. Inspect and repair weir doors.
2.3.9. Inspect floor drain.
2.3.10. Pressure wash the lab and handrails. (Painters)
2.3.11. Replace silicone around the anesthetic tank bottom. (Painters)

2.3.12. Repair/Replace netting over flumes. (Project Fisheries)
2.3.13. Clean fish viewing window.

2.4. Washington Shore Ladder (10 Jan 09- 28 Feb 09)

2.4.1. Install stab plates when one fish unit goes OOS.
2.4.2. Pull Cascades Is. picket leads on **09 Jan 09.**
2.4.3. Install UMT bulkhead on **north** end on **09 Jan 09**
2.4.4. Go to orifice flow on **10 Jan 09**.
2.4.5. Drain ladder to tailwater on **12 Jan 09**.
2.4.6. Clean staff gauges.
2.4.7. Calibrate fishway entrance gates at SA-24 board.
2.4.8. Replace/repair PIT tag equipment. (PSMFC/NOAA FISH)
2.4.9. Paint border of crowder white.
2.4.10. Remove algae from window and crowder.
2.4.11. Inspect picket leads for breaks or gaps. Repair as necessary.
2.4.12. Finish installing staff gauges at north and south monoliths.
2.4.13. Provide additional strapping for PIT tag equipment, as necessary. (Electricians)
2.4.14. Install SLEDS or acoustic deterrents by **28 Feb 09**
2.4.15. Inspect PH2 PCC **15 Jan 09**. (ROV inspection)

2.5. Cascades Island Ladder and UMT (17 Jan 09 – 28 Feb 09)

2.5.1. Pull picket leads on **09 Jan 09.**
2.5.2. Go to orifice flow on **17 Jan 09.**
2.5.3. Drain ladder to tailwater on **20 Jan 09.**
2.5.4. Dewater diffuser pools on **21 Jan 09.**
2.5.5. Drain ladder completely **22 Jan 09.**
2.5.6. Repair FG6-10.
2.5.7. Provide additional strapping for PIT tag equipment, as necessary. (Electricians)
2.5.8. Inspect picket leads for breaks or gaps. Repair as necessary.
2.5.9. Installation of lamprey rocks. (contractor)
2.5.10. Installation of new LPS (NOAA Fisheries)
2.5.11. Pull bulkheads, including north UMT, and return to service by **28 Feb 09**.
2.5.12. Install SLEDS or acoustic deterrents by **28 Feb 09**

3. JUVENILE FISHWAYS

3.1. DSM 1/ ITS

3.1.1. Pull STSs on **14 Oct 08.**
3.1.2. Walk the channel on **14 Oct 08.**
3.1.3. Install bulkheads and turn ITS over to contractors by **01 November.**

3.2. DSM 2 (15 Dec 08 – 19 Feb 09)

3.2.1. Pull STSs **15-16 Dec 08**
3.2.2. Turn off orifice lights on **13 Dec 08**
3.2.3. Dewater DSM on **18 Dec 08**
3.2.4. Inspect two mile pipe on **29 Dec 08**
3.2.5. PM equipment.
3.2.6. Inspect/Repair screen cleaners. Needs to be operable.
3.2.7. Install STSs starting **23 Feb 09**
3.2.8. Water up when STSs are installed (not later than **28 Feb 09**)

3.3. Juvenile Monitoring Facility (31 October 08 – 19 February 09)

3.3.1. Blow out hydro cannon lines on **01 Sep 08** (Operators)
3.3.2. Drain and inspect sample flume on **31 Oct 08**. (Project Fisheries)
3.3.3. Inspect and PM equipment- air pressure gauges and oil/water traps.

3.3.4. Inspect flume joints. Re-caulk as needed.
3.3.5. Inspect and winterize 2 and 3 way rotating gates.
3.3.6. Replace charcoal filters.
3.3.7. Inspect/Repair lifting cables for the fish lifts. (Riggers)
3.3.8. Install sump pump (Pump is ready to be installed in the basement.)
3.3.9. Possibly add two receptacles to the basement work area.
3.3.10. Inspect switchgate PLCs for proper calibration and settings. (lower one should switch based on TW elevation)
3.3.11. At the PIT tag building, remove deceased mice and possibly set traps for future occupants.
3.3.12. New seals on upper switchgate.
3.3.13. Seal off drain pipe to western wildlife pond.

3.4. B2 Corner Collector (02 Sep 08 – 01 Apr 09)

3.4.1. Remove mice from the pull box between the PIT tag building and the Electrical building and possibly set traps for future occupants.
3.4.2. Enter the channel to inspect seals around antennae and skid plates.

4. SPILLWAY

4.1. Test all gates.

KEY TO COLORS-
Black- normal/routine dewatering work
Orange- work to be done by contractors or researchers.
Blue- work to be done by Fisheries
Pink- highlights special requests or non-routine work items.
Gray- items to keep on the radar but postponed for a future in-water work season.

THE DALLES DAM FISHWAY DEWATER SCHEDULE

WINTER '08/'09

East Fish Ladder ***-Dewater*** ***Dec. 2, '08 – Jan. 8, '09***

- *Repaint 1' mark on weir 158-9 (TJF)*
- PM weirs 154-9 and CS equip (TDM,TDE)
- Clean inside crowder box (TDE)
- Repair FB staff gauge (TDS) reuse fish lock staff gage
- Clean staff gages and pickets (TJF)
- Lamprey ramp at 180 – d/s count station
- Repair Expansion joints (Eng)
- Re-floor count station (Eng)
- Repaint CS (TDM)
- Full range op tests all weirs (TJF)
- Remove CS floor tile (TDM)

East, West and South Ent, Junct Pool, Coll and Trans Chan- Dewater Week of Dec. 8, '08

- Install replacement diffuser grating – Eng decide replacement panels. (TDS)
- PM entrance weirs (TDM, TDE)
- Add extension stiffeners on east weirs (Eng, TDS)
- Full range op test (TJF)

North Fish Ladder ***- Dewater*** ***Jan. 13, '09 – Feb. 28, '09***

- Assemble/install new dewater pump (TDM, TDS)
- PM CS equipment and PUD radial (PUD provide labor)
- Remove brush from fish ladder walls (TJF)
- Clean inside of crowder box (TDE)
- Purchase and replace upper diffuser grating – (Eng)
- Full range op test (TJF)
- Remove CS floor tile (TDM)

North Entrance **- Dewater** **Jan. 14, '09**

- PM weir N1 (TDM, TDS)
- Full range op test (TJF)

ROV inspect PUD intake trashrack **-ROV** **Feb 18, '09**

Draft

JOHN DAY DAM FISHWAYS' DEWATER SCHEDULE

WINTER '08/'09

North Fish Ladder ***-Dewater*** ***Dec. 3, '08 – Jan.5, '09***

- *JDNFL district site visit support*
- PM count station and exit hydraulic weirs (JDM,JDE)
- Shim picket leads up 1" (JDS)
- Repaint CS room and window slot floor (TJF)

North Entrance ***-Dewater*** ***Dec. 4, '08***

- PM entrance weirs (JDM, JDE)
- JDNFL district site visit support

Juvenile Bypass System ***-Dewater*** ***Dec. 17, '08***

- Repair flume spalling
- Repair SMF separator tub rust
- Inspect conduit (Engineering)
- PM all SMF equipment and tainter gate (JDM, JDE)

South Turbine Bulkhead Install **-ROV** **Jan. 5, '09**

- Inspect seal and south turbine intake for debris
- Inspect south pump stilling basin trashrack
- Inspect inside penstock

South Fish Ladder ***- Dewater*** ***Jan. 6, '09 – Mid Feb***
(depending south fish turbine rehab status)

- PM count station equipment and exit sills (JDM,JDE)
- Expansion joint repair exit and count station(JDM, Engineering)

South Entrance, Collection channel ***- Dewater*** ***Week of Jan. 12, '09***

- PM SE1, NE1/2 entrance weirs (JDM, JDE)
- SE1 wall diffuser – assess condition and possible closure (JDM, Engineering)
- PM NE3 spare gearbox (JDM)
- Inspect diffuser valves (JDM, Engineering)

South fish turbine trashrack install ***-ROV*** ***Feb. 25, '09***

- Inspect sill
- Inspect forebay north and south diffuser intakes

Adult Fish Passage Facilities – 2008-09 Winter Maintenance Schedule
U. S. Army Corps of Engineers
Walla Walla District

MCNARY DAM - Washington Shore Fishway

1. Dewater the fish ladder from **February 15 – February 28** for maintenance. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
2. **Inspect the collection channel by dewatering** [1]
3. Perform maintenance on the small hydro bypass and auxiliary water supply system.
4. Maintain adult PIT tag system as required. Coordinate with PSMFC.
5. Maintain half-duplex PIT (lamprey) antennas. Coordinate with University of Idaho.
6. Resume normal operation of the small hydro/auxiliary water system by **Feb 28**

MCNARY DAM - Oregon Shore Fishway

1. Shut down AWS pumps 1 and 2 at sundown on **December 28** and place ladder in orifice flow.
2. Dewater the fish ladder from **December 29– February 28** for extensive maintenance on fish pumps, auxiliary intake structures at ladder exit, and powerhouse collection channel.
3. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
4. **Inspect the collection channel by a combination of underwater video or diving**. [1]
5. Perform routine winter maintenance on the AWS fish pumps 1 & 2, and repair oil leak on 3.
6. Maintain adult PIT tag system as required. Coordinate with PSMFC.
7. Replace fish counting window and visitor viewing window in fish ladder.
8. Resume normal ladder flow and 2 pump operation on **February 28**.

ICE HARBOR DAM - North Shore Fishway

1. Shut down the AWS pumps on **January 22**
2. Dewater the fish ladder from **January 26` – February 23** for maintenance.
3. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
4. **Inspect the collection channel by underwater video.** [1]
5. Perform maintenance on the AWS pumps.
6. Maintain adult PIT tag system as required. Coordinate with PSMFC.
7. Resume normal operation of the AWS pumps on **February 23**.

ICE HARBOR DAM - South Shore Fishway

1. Shut down the AWS pumps on the morning of **January 1**.
2. Dewater the fish ladder from **January 5 – 19** for maintenance.
3. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
4. **Inspect the collection channel by underwater video.** [1]
5. Perform maintenance on the AWS pumps.
6. Maintain adult PIT tag system as required. Coordinate with PSMFC.
7. Maintain half-duplex PIT (lamprey) antennas. Coordinate with University of Idaho.
8. Resume normal operation of the AWS pumps on **January 19**.

LOWER MONUMENTAL DAM - North Shore Fishway

1. Shut down the AWS pumps on the morning of **January 5**.
2. Dewater the fish ladder from **January 5 - 31** for maintenance.
3. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
4. **Inspect the collection channel by dewatering. See footnote on page 1**.
5. Perform maintenance on the AWS pumps.

[1] Methods used in the past for inspecting collection channels at all five dams are shown in Table 1.

6. Resume normal operation of the AWS pumps on **January 30**.

LOWER MONUMENTAL DAM - South Shore Fishway

1. Dewater the fish ladder from **February 2 – February 28** for maintenance.
2. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
3. **Inspect the collection channel by dewatering. See footnote on page** 1.

LITTLE GOOSE DAM

1. Shut down the AWS pumps on the morning of **January 1**.
2. Dewater the fish ladder from **January 5 – 29** for maintenance.
3. Dewater collection channel from **January 6.**
4. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
5. **Inspect the collection channel by dewatering. See footnote on page** 1.
6. Maintain adult PIT tag system as required. Coordinate with PSMFC.
7. Perform maintenance on the AWS pumps.
8. Inspect and repair the adult fish fallout fence, and diffusers gratings.
9. Repair/replace light fixtures in adult channel.
10. Resume normal operation of the AWS pumps on **January 29.**

LOWER GRANITE DAM

1. Shut down the AWS pumps on the morning of **January 2**.
2. Dewater the fish ladder from **January 5 – February 23.**
3. Complete winter maintenance according to the Fish Passage Plan, Section 2.3.2.1.
4. Inspect the collection channel by dewatering.
5. Perform maintenance on the AWS pumps. Repair / replace picketed leads.
6. Maintain adult PIT tag system as required. Coordinate with PSMFC.
7. Inspect the adult fish fallout fence.
8. Inspect and repair areas within the adult fish trap.
9. Resume normal operation of the AWS pumps on **February 23**.

[1] Methods used in the past for inspecting collection channels at all five dams are shown in Table 1.

Table 1. Methods used to inspect adult fishway collection channels during past winter maintenance periods, compared to the upcoming winter period.

	2003-04	2004-05	2005-06	2006-07	2007-2008	2008 -2009
MCN WA Shore	Dewater	Dewater	Dewater		Dewater	Dewater
MCN OR Shore	Video and diver	Video or diver?	Video or diver	Dewater	Video and diver	Dewater
IHR North Shore	Video	Video	Dewater	Video	Video	Video
IHR South Shore	Dewater	Video	Video	Dewater	Video	Video
LMO North Shore	Dewater	Dewater	Dewater	Dewater	Dewater	Dewater
LMO South Shore	Dewater	Dewater	Dewater	Dewater	Dewater	Dewater
LGO	Video	Video	Dewater	Video and dewater	Dewater	Dewater
LGR	Dewater	Dewater	Dewater	Dewater	Video	Dewater

State, Federal and Tribal Fishery Agencies Joint Technical Staff Letter

Columbia River Inter-Tribal Fish Commission
Idaho Department of Fish and Game
Oregon Department of Fish and Wildlife
Washington Department of Fish and Wildlife

September 23, 2008

Bernard Klatte, Chairperson
Fish Passage Operations and Maintenance
USACE Portland District
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James Adams, Chairperson
Technical Management Team
USACE Northwestern Division
Columbia Basin Water Management Division
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Portland, Oregon 97209-4142

Dear Mr. Adams and Mr. Klatte,

Over the course of the season, several requests have been made to alter the operations at the projects to assist non emergency work. Theses requests have raised the need to review the coordination process for changes to in-season operations. There is an established in-water work period at all of the projects that is specifically designed to allow work to proceed without impact to the salmon migration. While the salmon managers are committed to working with the Action Agencies to address these needs, we are concerned that the frequency and number of requests to perform non emergency work outside of the in-water work window has been increasing. There have been numerous requests through the Fish Passage Operation and Maintenance Group, (FPOM), and the Technical Management Team (TMT), for changes in operations. While we understand that emergencies do arise, much of this work could be delayed. We would recommend that the Action Agencies make every effort to confine work to the in-water work period and only address true emergency operations during the migration period.

In addition to the frequency of the work requests, the salmon managers are also concerned that the requests are presented with little time for adequate review. For example, there was a request to switch from a 60% spill day at McNary dam on Friday August 15, 2008 to a 40% spill operation to insure that, if needed, there would be additional flexibility for the generation system. The notice was received mid afternoon Thursday August 14, 2008. This short time frame allowed for very little review. In addition, the Salmon Managers normally convene the Fish Passage Advisory Committee to discuss the request among the salmon managers and short timeframes preclude this process, as well as the standard regional review process which was formed in part to deal with such issues. While we understand that emergency issues do arise with short turn around time, we do not feel that this situation met that criterion. There was no emergency and the conditions had been forecasted several days, if not more, in advance.

However, if there was a need to make these unplanned changes to the hydro system then had this issue been brought to the attention of the salmon managers sooner, we could have discussed this issue and reviewed all alternatives that would met the needs of the action agencies as well as reducing any biological impact associated with the change in operations. Several salmon managers voiced concern with the suggested operation. We noted afterwards that the change in operations was not implemented.

We again stress that the salmon managers are committed to working with the action agencies to reduce the impact of emergency operations on the salmonid migration. We strongly encourage the Action Agencies to be proactive when there is a possibility for unplanned changes in the set operations for the hydro system, as well as insure work scheduled to occur in-season does not pose an impact fish passage. Lastly, any work that will modify operations needs to be brought to the attention of the salmon mangers in a timely manner to insure adequate time for review and analysis of alternatives.

Sincerely,
Tom Lorz
Columbia River Inter-Tribal Fish Commission

Richard Kruger
Oregon Department of Fish and Wildlife

Russ Kiefer
Idaho Department of Fish and Game

Cindy LeFleur
Washington Department of Fish and Wildlife

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September 18, 2008

Bernard Klatte, Chairperson
Fish Passage Operations and Maintenance
USACE Portland District
P.O. Box 2946
Portland, OR 97208-2946

Tim Dykstra, Chairperson
Fish Passage Operations and Maintenance
USACE, Walla Walla District
201 North Third Avenue
Walla Walla, WA 99362-1876

Dear Mr. Klatte and Mr. Dykstra,

It has come to our attention that modifications to the Smolt Monitoring Program (SMP) have occurred as changes to the Fish Passage Plan, through recommendations from the Fish Passage Operations and Maintenance Committee (FPOM). As the Project Leader and ESA permit holder for the SMP, I am requesting that any changes to the SMP program be made with full coordination through the Fish Passage Center (FPC). The FPC will discuss changes with the Fish Passage Advisory Committee (FPAC) and respond back in writing within a reasonable amount of time.

The specific FPOM change to the 2008 Fish Passage Plan (FPP) that prompted this request is the change to the SMP sampling hours at John Day Dam when temperatures meet or exceed 70°F. This FPP change (08APP_K_003 Appendix K 3.d.iv) was proposed on February 4th, 2008 and was not attached to the February 14th, 2008 FPOM agenda sent by electronic mail to FPOM members on Wed 2/13/2008 at 11:09 AM. In our discussions with others present at the February FPOM, it was not clear to them that the sampling time was proposed to be changed; instead it was their understanding that the discussions were primarily centered on where the temperature was to be measured at John Day Dam. At any rate, the sampling time changes were included in the FPP. This change came as a surprise to SMP personnel at JDA as well as to the SMP Coordinator. This change was not widely discussed and the FPP recommendation presents difficulty since it encompasses two sampling days in the SMP.

The procedures for changes to the SMP normally include a review of the SMP information by the FPC. The FPC compiles and summarizes the available data and shares it with the FPAC for determination if a change is warranted and, if so, a subsequent recommendation is developed by FPAC. The FPAC has undertaken the task of reviewing the sampling at John Day Dam and will forward their recommendation to the FPOM in the next few weeks.

We appreciate your willingness to work with us to ensure that all changes to the SMP are fully coordinated with all responsible parties. Thank you.

Sincerely,
Michele DeHart
Fish Passage Center Manager
Program Leader, Smolt Monitoring Program

Attendees to the 3 September 2008 NWW transport meeting.

Name	Agency	Phone Number
John Bailey	COE – Walla Walla	(509) 527-7123
Anne Dowdy	ODFW – Little Goose	(509) 399-2060
Tim Dykstra	COE - Walla Walla	(509) 527-7125
Brad Eby	COE – McNary	(541) 922-2263
Mike Halter	COE – Lower Granite	(509) 843-1493 x 263
Dave Hurson	COE - Walla Walla (now retired)	N/A
Pat Keniry	ODFW	(541) 962-3026
Gregory Kolvachuk	PSMFC – John Day	(541) 506-7863
Les Layng	WDFW – McNary	(541) 922-3630
Sharon Lind	WDFW – Lower Monumental	(509) 282-3332
Rick Martinson	PSMFC – The Dalles	(541) 296-8989
Fred Mensik	WDFW – Lower Granite	(509) 843-3084
Greg Moody	COE – Walla Walla	(509) 527-7124
Charles Morrill	WDFW	(360) 902-2747
Monty Price	WDFW – Lower Monumental	(509) 282-3332
Shawn Rapp	WDFW – Lower Granite	(509) 843-3084
Doug Ross	WDFW – Lower Granite	(509) 843-1050
Carter Stein	PSMFC	(503) 595-3100
Bill Spurgeon	COE – Lower Monumental	(509) 282-7211
Rosanna Tudor	WDFW – McNary	(541) 922-3630
Eric Volkman	COE – Little Goose	(509) 399-2233 x 263

3 September 2008 NWW transport meeting
Agenda

0900 – 1130- John Bailey - Facilitator

1. Introductions.
2. 2008 Transport Program Report
    a. Report Format
    b. Review Contractual Requirements
3. 2008 Transport Season Review
    a. Lower Granite
    b. Little Goose
    c. Lower Monumental
    d. McNary
    e. Ice Harbor
4. 2009 Operations
    a. Facility Changes
        1. Little Goose PIT tag Improvements
        2. Bonneville Truck Pad
    b. Starting dates.
5. Other Items.

1130 – 1230- Lunch

1230 – 1500

6. Fish Condition Discussion- Dave Hurson - Moderator

Notes: Post-Transport – Fish Condition Meeting 03Sep08

The morning session followed the post transport season agenda provided. NWW project and state, and PSMFC biologists provided a report and overview of the juvenile fish passage season. Fish biologists from each dam were present.

The afternoon session on fish condition included smolt monitoring personnel from Portland District dams (NWP). The resulting discussion resulted in lots of participation. The initial PowerPoint presentation looked at 8 main categories: descaled, partially descaled, head injuries, body injuries, predation, fin problems, and deformities. There was considerable discussion surrounding what subcategories and the number of subcategories should be included under these major headings. There was also considerable discussion on the classification of fish with multiple injuries or conditions. A good example of this was a descaled fish with obvious signs of bird predation. Some participants wanted to record both. Another condition discussed at length was a picture of a fish missing a lower caudal fin and covered with a yellow fungus. This second fish could be described as having a fin injury, signs of *Columaris* disease, having a fungal infection or all three. Most people agreed this fish should be counted as a single injured or diseased fish, not as 3 separate instances of fish condition on the sample as a whole. In current practice, some locations such as Lower Granite had far more potential sub-categories than others such as McNary.

Other topics discussed included recording the likelihood of injured fish surviving the migration, how will individual locations record locally-desired information that will not be included in current or future formats, and what other data the region would be interested in recording.

All participants agreed that this meeting, focused on the Corps Juvenile Transportation Program, was a good starting point. All looked forward to discuss these issues with a broader group in the near future. The goals for the program include producing records that are accurate, standardized, and consistent with information collected in previous years. The meeting was summarized by pointing out the areas that were important to specific participants, outlined numerous specific aspects of what a program should do, how the development of the program should proceed, and the importance of user input.

FPP Change Forms
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Change Request Number:
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:
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.
****

Change Request Number:
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 as part of the fishway inspection program. Project biologists will determine method. Results will be provided in weekly status reports. (JD did not have the same wording as TD)

Reason for Change: Discussion and resolution determined through FPOM velocity task group

****

Change Request Number:
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.
****

Change Request Number:
Date:8/6/08
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: Adding *per ladder* keeps the language consistent with TDA and doesn't unnecessarily limit operations for only 5000 shad passing the entire Project.
****

Change Request Number:
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.
****

Change Request Number:
Date: 9/23/2008
Proposed by: FPOM
Location of Change: 2008 FPP BON-11 section 2.1.2

Proposed Change: include jacks in counts for splitting flows.
"When adult *and jack* salmonid counts equal or exceed…"
Reason for Change: Jacks should be included in the fish counts since they are salmonids passing the dam.
Comments from others: All agencies at FPOM agreed to the change.
Record of Final Action: This change will be included in the 2009 FPP.
****

Change Request Number:
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.
****

Change Request Number:
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.
****

Change Request Number:
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- "The downstream migration channel (DSM) is also used for adult passage from September 15 through December 15." **to**
BON 1.2.1.1- "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- "All gatewell orifices should be opened and DSM1 ran south from September 15 through December 15." **to**
BON 2.4.1.2.f- "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- "STSs and VBSs will be installed in two PH1 priority units on September 15." **to**
BON 2.5.3.f - "STSs and VBSs will be installed in two PH1 priority units *as soon as possible after spill ends.*"

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

BON 2.5.3.f.1- 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.
****

Change Request Number:
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'

September 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 B2CC closed Labor Day	2 FPAC	3 TMT	4	5	6
7	8	9 FPAC Happy birthday	10 TMT	11 FPOM Meeting-NOAA	12	13 Happy Birthday
14	15 Tribal Lamprey Plan review meeting. BON PH1 STS install	16 FPAC	17 TMT NWP FFDRWG	18 SCT	19	20 Happy Birthday
21	22	23 FPAC AFEP pre-proposal comments due	24 TMT Predation Workshop at Oregon Zoo	25	26	27 Happy Birthday
28	29 BON PH2 Unit priority change SMF conf call Vel. TG conf call	30 FPAC				

October 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 TDA PUD bridge demo	2	3	4
5	6 TDA U20 dewater-TDA-E AWS OOS for two hours. JDA TSW FFDRWG	7	8 BON FGE FFDRWG	9 FPOM Meeting NWP dewatering schedules due. Happy Birthday	10	11
12	13	14 BON BGS pre-dive	15 BON BI transformer pad work (1800)	16 Happy Birthday	17	18
19 JDA T-1 line OOS Happy Birthday	20 BON BGS dive JDA T-1 line OOS	21 BON BGS dive JDA T-1 line OOS	22 AFEP proposals sent. JDA T-1 line OOS	23 MCN fish pump dive JDA T-1 line OOS	24 MCN fish pump dive TDA MU3&4 priority change until 15 December.	25 MCN fish pump dive
26	27	28	29	30 NWP FFDRWG	31 Normal Adult Fish Counting Ends Most Dams BON JMF to bypass	

November 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30						1 BON ITS mods begin
2	3	4	5	6	7	8
9	10	11 Veteran's Day	12	13 FPOM Meeting NWW dewatering schedules due. Input for draft FPP due.	14 AFEP proposal review- NWW	15
16	17 ERDC model trip- JDA & MCN	18 ERDC model trip- JDA & MCN Happy Birthday	19 ERDC model trip- JDA & MCN	20 ERDC model trip- JDA & MCN	21 ERDC model trip- JDA & MCN	22
23	24 Happy Birthday	25	26	27 Happy Thanksgiving	28 Draft FPP Due in NWD	29

December 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 BON BI to orifice flow BON F1 OOS BON PH1 STS removal. ITS bulkheading begins	2 TDA-E dewater	3 JDA-N dewater BON BI dewater	4 JDA-N ent dewater	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. BON STS removal	16 BON STS removal	17 JDA SMF dewater	18 BON DSM2 dewater	19	20
21 Happy Hanukkah	22	23	24	25 Merry Christmas	26 Happy Kwanzaa	27
28	29 BON AFF orifice flow BON two-mile pipe	30	31			

FISH PASSAGE O&M COORDINATION TEAM
Adult and Juvenile Fish Facilities Status Report
U.S. Army Corps of Engineers, Walla Walla District
October 9, 2008

Construction

McNary:

- Turbine unit 4 out of service September 15-19 for annual overhaul.
- Turbine unit 5 returned to out of service September 16 from 9 year overhaul.
- Turbine unit 8 taken out of service September 2 -25 for annual overhaul and external thrust bearing cooler work.

Ice Harbor:

- Turbine unit 1: returned to service September 4 following cooling water strainer replacement.
- Turbine units 2 &3: taken out of service September 5 for cooling water strainer replacement.
- Turbine unit 4 out of service September 8 – 11 in support of Doble tests.
- Turbine unit 6: returned to service September 1 following annual maintenance.

Lower Monumental:

- Turbine units 5 and 6, and spill gates 7 and 8 were taken out of service in support of the RSW test and dive inspection on September 15. The test showed that the RSW can be manually lowered to the stowed position and raised to the deployed position. The automatic system for this operation was successfully tested September 22 - 26.

Little Goose*:*

- Turbine unit 1: returned from annual maintenance on September 4.
- Turbine unit 2: returned from annual maintenance on September 25.
- Turbine unit 2 out of service September 25-29 for exciter repair.
- Turbine unit 3 taken out of service September 29 for annual maintenance.
- Turbine unit 5 remains out of service due to faulty generator casing welds.
- Turbine unit 6 returned to service October 2 following stator repairs.

Lower Granite:

- Turbine unit 2 remains out of service for rewind and 6-year overhaul. Expected return to service date is now January 29.
- Turbine unit 3 remains out of service for 6 year overhaul.
- Turbine unit 5 out of service September 2 – 29 for annual overhaul and fire protection system upgrade.

Operations and Maintenance - Juvenile Fish Facilities

McNary:

- Last truck departure took place September 24. Facility in primary bypass mode.
- Primary bypass became necessary the evening of August 31/September 1 due to influx of debris as spill season ended.
- Repeated primary bypass became necessary in September due to influx of shad.
- B side sample gate out of service for 3 hours on September 5 due to failed actuator.

Ice Harbor:

- Facility currently in bypass mode.
- Gatewell slots 2A and 3A were respectively dipped on September 8 and 11 prior to being unwatered in support of cooling water strainer replacement. Approximately 300 juvenile shad were captured and released into the adjoining gatewell slots. No salmonids were observed.
- Week ending 02Oct: 50 juvenile shad were dipped from turbine unit 3 – A slot prior to setting the bulkhead for strainer replacement. The fish were released into slot 3C.
- Adult Jumpers: A non-clipped adult Chinook salmon was found dead on the grating in the juvenile collection channel September 18. On September 22, a non-clipped adult steelhead and a clipped adult steelhead were found on the grating in the juvenile collection channel in a different location. In each case fish appeared to have jumped and created a hole in the netting that runs along the handrail of the collection channel. In both instances, mortalities were returned to the river and the netting was repaired.

- An oil spill occurred in a turbine unit 2 gatewell slot after a headgate actuator lifted out of the slot. Approximately 200 gallons of hydraulic oil was removed. Associated orifices were closed until the oil was removed and the actuator repaired.

Lower Monumental:

- Collection for ceased September 30, facility in primary bypass mode.

Little Goose:

- Collection for transport continues.

Lower Granite:

- Collection for transport continues.
- Truck trip cancelled September 28 due to excessive debris in tanker.

Operations and Maintenance - Adult Fish Facilities

McNary:

- Fish pump #3 (Oregon Ladder): Fish Pump #3 remains out of service oil leak repair. Repairs cannot be initiated until bulkheads can be sealed properly. System is currently in 2 pump operation.
- Oregon exit traveling screen: the north traveling screen remains out of service. Because of excessive debris accumulations on the trashracks and traveling screens, the tainter valve was closed during nighttime hours on September 23 and 24. The tainter valve was again was closed in late afternoon on September 25 to protect the structures and in support of dive work scheduled for the following day.

Ice Harbor:

- North Shore Fish pump #2 gearbox remains out of service for manufacturer warranty repairs.

Lower Monumental:

- Fish Pump #3 remains out of service due to problem with the diffuser assembly and bearing housing. Fish pump 3 is "bulkheaded off" to improve efficiency of 2 pump operation.
- The upper south ladder diffuser was changed to manual control week of Aug 29 – Sept 4 when it stopped working in automatic mode. A trouble report has been submitted.
- Fish pump #1 was out of service September 2 from 0850-0925 hours to investigate a shaft bearing noise/vibration. The bearing was loaded with grease and the RPMs were decreased to reduce wear and tear on the unit until the winter maintenance period in January.

Little Goose:

- On September 18, fish pump one was shut down from 0751 to 1015 hours and fish pump 2 from 1016 to 1042 hours to repair water leaks. During the outages the two pumps in service were operated at increased RPMs to make-up additional water and NSE2 weir was raise to increase channel to maintain head differentials.

Research

McNary:

- Divers removed USGS research equipment requiring individual turbines unit outages Sep 8-11.

Little Goose:

- USGS currently radio-tracking adults through the tailrace.
- USGS ended hydrologic flow pattern research on August 29.

Lower Granite:

- Adult fish trap in operation.
- NOAA Fisheries began marking fish to evaluate late season trucking September 4.

Other

- Spill Season ended September 1 at Lower Snake River projects.
- MOP ended September 10 at Lower Granite.
- McNary **:** A scroll case and draft tube salvage was successfully concluded September 23 in turbine unit 6. Recovered fish included 1 catfish, 1 sturgeon and 1 sucker.

Condition Sampling Protocol

Standardized descriptive categories were developed to provide a meaningful way of comparing the injury and disease data among Smolt Monitoring Program sites.

Overall there are seven data categories Head Injury, Body Injury, Fin Injury, Descaling, Predator Marks, Disease/Parasites and other. Within each category there are several subcategories (Table 1). Since the data will be entered based on the sub-category in which it occurs the protocol defines the injuries, diseases and parasites to be included in each subcategory. Information will be recorded for each fish. A single fish could have data recorded in all categories. For example, a fish with body injuries could also have head injuries, disease, predator marks, and descaling. When deciding which category to record information, priority should be given to describing the injuries and descaling and only obvious disease or predation marks should be entered. For example, if a fish has popeye and no other disease symptoms, that should be considered an injury and recorded as popeye under head injuries. If the fish has popeye and other symptoms of bacterial kidney disease (BKD), such as bloating and dark coloration, then popeye would not be recorded under head injury and BKD would be recorded for disease.

Table 1. Summary of categories and sub-categories of injury and disease information to be recorded at SMP sites. Data will be entered in subcategories.

Head Injury	**Body Injury**	**Fin Injury**	**Descaling**	**Predation Marks**	**Disease or Parasite**	**Other**
Eye	Body Injury	Fin tears to fin margin	≥ 20%	Bird	Fungus	Fin Inflamm-ation
PopEye	Other	Fin hemorrhage	> low % and < 20%	Fish	Columnaris	
Operculum		Other	Predation >20%	Lamprey	BKD	
Other				Other	Parasite	
					Deformity	
					Other	

Head Injury. The head is defined as that portion of the fish posterior to the rear margin of the operculum.

Eye -- Any injury to an eye (or eyes) other than popeye including lacerations, abrasions or clouded tissue or blood in the eye indicative of an injury. This also included missing eyes.

PopEye – Eye or eyes bulging out unusually.

Operculum – cuts tears or missing portions of operculum.

Other – Any cut, abrasion, laceration, swelling, hemorrhaging or other injury not designated as popeye, eye or operculum injury and that is not designated as a disease (note that fungus may be associated with an injury) or parasite to the head (and not recorded as an injury to the body or fins).

Body Injury. The body category is defined as that area of the fish not including head or fins.

Body Injury – Any cut, abrasion, laceration, swelling, hemorrhaging or other injury not designated as a disease (note that fungus may be associated with an injury) or parasite on the body (and not recorded as an injury to the head or fins).

Fin Injury. The fin is defined as those appendages or extensions of tissue on the fish including fin rays and thin often transparent or membranous tissue between fin rays and not included as part of head or body.

Fin Injury – Any cut, abrasion, laceration, swelling, hemorrhaging or other injury not designated as a disease (note that fungus may be associated with an injury) or parasite in or on the fins (and not recorded as an injury to the head or body).

Descaling

Partially Decaled -- low% to < 20% – Partially decaled includes fish with more than slight descaling, indicative of unhealthy fish up to 20% descaled .

Descaled -- 20% or greater descaling – Includes fish with descaling from 20% to 100% of at least one side of its body.

Descaled by Predator—descaling consistent with predator bite. Predation mark type should also be indicated in the predation category.

Predation Marks

Bird – Marks on fish consistent with bird bite.

Fish – Marks on fish consistent with fish bite.

Lamprey – Marks on fish consistent with lamprey bite.

Other – Other marks consistent with other or unknown predator.

Disease/Parasites

Fungus – Fungus present on any portion of the fish. Often found in association with injuries.

Columnaris – Presence of columnaris is typically visible on the skin of the fish. The fish will appear to have a yellow to orange mold growing on it, with a slight cottony look, due to a secondary fungal infection that has attacked the lesions and ulcerations.

BKD – Symptoms of BKD include bloating of body, occasionally fish color appears dark--popeye often accompanies bloating.

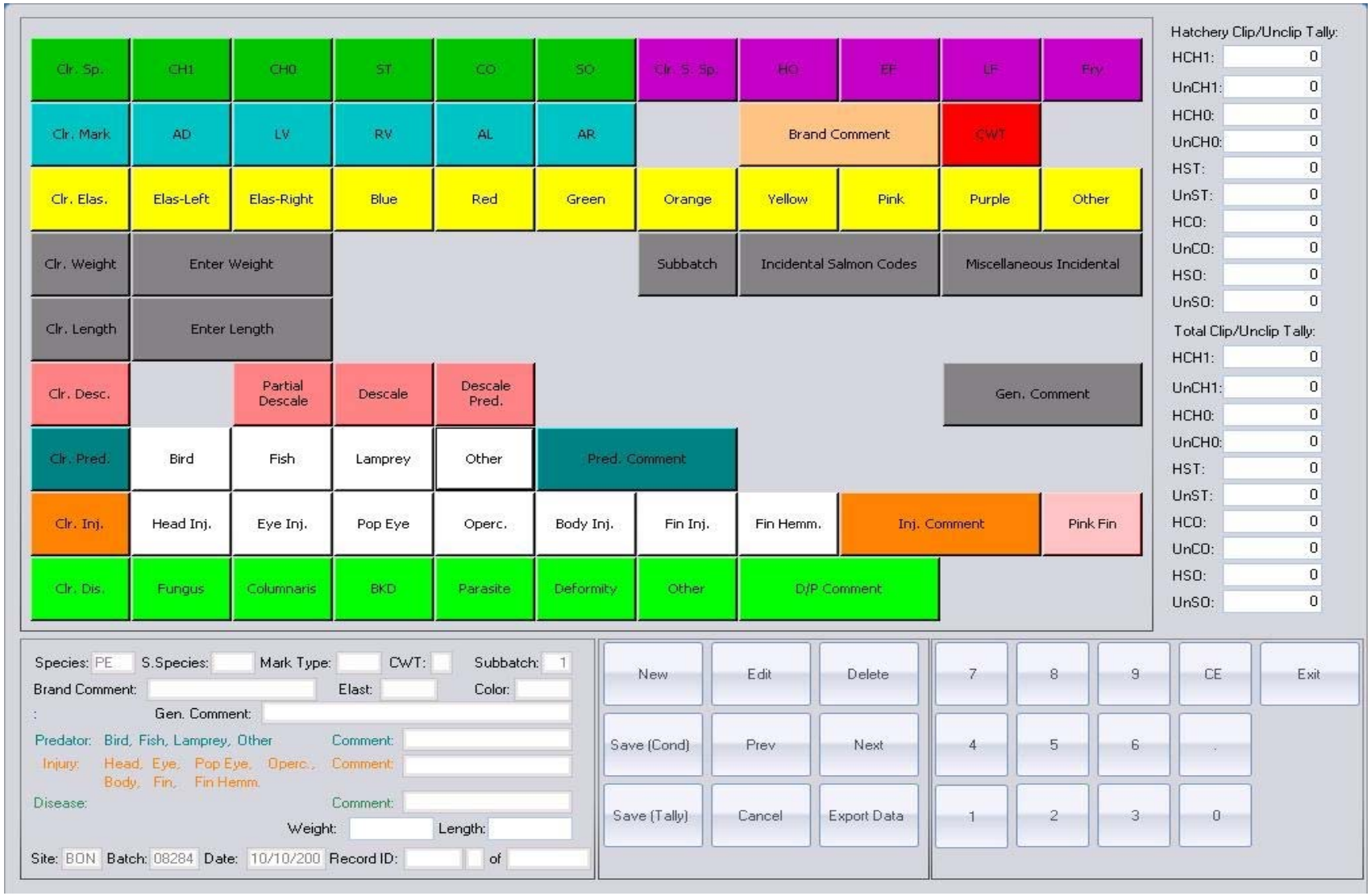
Parasite – Includes any parasite that is visible on the external surface of the fish or that is visible protruding from gills or mouth such as leach or lamprey.

Deformity – noticeable spinal curvature or other obvious deformity.

Other – any other disease not mentioned above. Some examples of other diseases may include: fill in here

Other

Fin Inflammation – pink or red coloration at base of fin or fins indicative of Fungus present on any portion of the fish. Often found in association with injuries.


Clr. Sp.
CH1
CH0
ST
CO
SO
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HO
EF
LF
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Clr. Mark
AD
LV
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AR
Brand Comment
CWT
Clr. Elas.
Elas-Left
Elas-Right
Blue
Red
Green
Orange
Yellow
Pink
Purple
Other
Clr. Weight
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Subbatch
Incidental Salmon Codes
Miscellaneous Incidental
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Gen. Comment
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Bird
Fish
Lamprey
Other
Pred. Comment
Clr. Inj.
Head Inj.
Eye Inj.
Pop Eye
Operc.
Body Inj.
Fin Inj.
Fin Hemm.
Inj. Comment
Pink Fin
Clr. Dis.
Fungus
Columnaris
BKD
Parasite
Deformity
Other
D/P Comment
Hatchery Clip/Unclip Tally:
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UnCH1: 0
HCH0: 0
UnCH0: 0
HST: 0
UnST: 0
HCO: 0
UnCO: 0
HSO: 0
UnSO: 0
Total Clip/Unclip Tally:
HCH1: 0
UnCH1: 0
HCH0: 0
UnCH0: 0
HST: 0
UnST: 0
HCO: 0
UnCO: 0
HSO: 0
UnSO: 0
Species: PE
S.Species:
Mark Type:
CWT:
Subbatch: 1
Brand Comment:
Elast:
Color:
Gen. Comment:
Predator: Bird, Fish, Lamprey, Other
Comment:
Injury: Head, Eye, Pop Eye, Operc., Body, Fin, Fin Hemm.
Comment:
Disease:
Comment:
Weight:
Length:
Site: BON
Batch: 08284
Date: 10/10/200
Record ID:
of
New
Edit
Delete
Save (Cond)
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Next
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