

**OFFICIAL COORDINATION REQUEST FOR  
NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE-** 16BON78 spill pattern change

**COORDINATION DATE-** 20 July 2016

**PROJECT-** Bonneville Dam

**RESPONSE DATE-** no comments required but comments are always welcome.

**Description of the problem-** Bonneville Dam is changing spill patterns in order to minimize the erosion of the previously repaired B-Branch riprap. The amount of spill will remain the same. A hydro survey conducted on July 7, 2016 (16BON47 MFR B-Branch erosion survey) confirmed the erosion was taking place. On July 20, a site visit was arranged to investigate the best spill pattern for fish while reducing the impact to the riprap area. Gary Fredricks, Scott Bettin, Ed Meyer, Ben Hausmann, Ida Royer, Jerry Carroll, Jon Rerecich, Jason Miller, Jake Macdonald and Laurie Ebner evaluated the spill parameters. The following pattern was considered the best alternative: Gate 18 open 1', gate 17 open 18", gate 16 open 3' and the remaining 3.5' distributed by 0.5' at a time through gates 5 -11. Although it was the best solution, it does create a stall out area downstream of Bay 17 & 18. Patterns have been developed for 97 Kcfs to 43 Kcfs depending river flow. A follow up hydro survey will be conducted after spill season not in August as previously suggested. Since most of the erosion is at or above water level, Gary Fredricks plans to take photographic updates of the area. Ebner noted that "If the modified spill pattern is insufficient at minimizing the energy dissipating occurring in the erosion hole protecting the ladder most likely will require shutting off the spill in the southern 4 or 5 bays." The erosion hole will be evaluated through the pictures.

**Type of outage required: Changing the spill pattern from 3' gate opening in bays 16, 17 and 18 to 18 open 1', 17 open 18", 16 open 3' and the remaining 3.5' distributed by 0.5' at a time through gates 5 -11.**

**Impact on facility operation: Requires manually inputting the spill gate operations until GDACS is updated**

**Dates of impacts/repairs: 07/21/2016- end of spill**

**Length of time for repairs: this spill pattern will continue through the end of spill for this year**

**Expected impacts on fish passage: Unknown.**

**Comments from agencies:**

-----Original Message-----

From: Bettin,Scott W (BPA) - EWP-4 [mailto:swbettin@bpa.gov]

Sent: Tuesday, July 26, 2016 10:34 AM

To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>

Subject: [EXTERNAL] RE: FPOM: Official Coordination 16BON78 MOC spill pattern change

Will we run the normal adult attraction flows from bay 18 Sept through Dec 15? Is there any need to change that pattern?

-----Original Message-----

From: Mackey, Tammy M NWP

Sent: Tuesday, July 26, 2016 10:47 AM

To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>; BPA Scott Bettin <swbettin@bpa.gov>; Hausmann, Ben J NWP <Ben.J.Hausmann@usace.army.mil>

Subject: RE: FPOM: Official Coordination 16BON78 MOC spill pattern change

At this time we have not been given any indication that there is a need to cease or change adult attraction flows from the pattern listed in the FPP.

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-----Original Message-----

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]

Sent: Monday, July 25, 2016 3:06 PM

To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>

Subject: [EXTERNAL] Re: FPOM: Official Coordination 16BON78 MOC spill pattern change

Erin, No comments other than to say that we agree with the proposed pattern change. Thanks, Gary

-----Original Message-----

From: Morrill, Charles (DFW) [mailto:Charles.Morrill@dfw.wa.gov]

Sent: Friday, July 22, 2016 10:58 AM

To: Mackey, Tammy M NWP <Tammy.M.Mackey@usace.army.mil>; Bailey, John C NWW <John.C.Bailey@usace.army.mil>; Baus, Douglas M NWD <Douglas.M.Baus@usace.army.mil>; BPA Scott Bettin <swbettin@bpa.gov>; Bill Hevlin <Bill.Hevlin@noaa.gov>; Statler, Dave <daves@nezperce.org>; david\_swank@fws.gov; Ed Meyer (ed.meyer@noaa.gov) <ed.meyer@noaa.gov>; Eppard, Matthew B NWP <Matthew.B.Eppard@usace.army.mil>; Erick VanDyke <erick.s.vandyke@state.or.us>; Fredricks, Gary <Gary.Fredricks@noaa.gov>; Jen Graham <jennifer.graham@ctwsbnr.org>; Kiefer,Russell <russ.kiefer@idfg.idaho.gov>; Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>; Lorz, Tom <lort@critfc.org>; Moody, Gregory P NWW <Gregory.P.Moody@usace.army.mil>; Petersen,Christine H (BPA) - KEWR-4 <chpetersen@bpa.gov>; Setter, Ann L NWW <Ann.L.Setter@usace.army.mil>; Sears, Sheri <Sheri.sears@colvilletribes.com>; Shutters, Marvin K NWW <Marvin.K.Shutters@usace.army.mil>; trevor.conder@noaa.gov; Wertheimer, Robert H NWP <Robert.H.Wertheimerxxx@usace.army.mil>; Wright, Lisa NWD <Lisa.S.Wright@usace.army.mil>

Subject: [EXTERNAL] RE: FPOM: Bonneville - Bradford Island Erosion 2016

Importance: High

Folks,

Excellent pictures & videos ... thank you Gary ...

the sequencing of the videos and the observed change in hydraulic energy entering into the hole certainly support the choice for the final pattern ... one foot in 18, foot and a half in 17 and 3 ft in 16 plus addition spill at north end taken at 13.5 ft tailwater elevation ...

and as discussed earlier ... as tailwater elevation drops with lower inflow ... we would expect hydraulic energy entering the hole to lessen as well ..

One Question ... the shotcrete poured over the riprap .. is it armoured with a mat of rebar or something else to help withstand the constant hydraulic erosion effects ?

Thank you !

Charlie

-----Original Message-----

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]  
Sent: Wednesday, July 20, 2016 4:44 PM  
To: Ebner, Laurie L NWP <Laurie.L.Ebner@usace.army.mil>  
Cc: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>;  
Subject: [EXTERNAL] Re: FPOM: BON B-Branch erosion conference call notes

Laurie, I have eight video files that cover the runs we did. The good news is that the quality is very good, the bad news is that they total 2 GB (155 to 391 MB each) so sending over email isn't going to work. I know you guys can't use flash drives so I've burned them to a DVD, which I will bring in tomorrow. Perhaps someone at SCT could get it to you. I will also look into making the files (or at least the final pattern file) available on the cloud, Google Drive or something like that.

Another bit of good news is that I was able to photograph the "hole" again today. The beautiful day made photography much more difficult but I was able to get a record photo that showed very little difference between now and last Friday. That big rock is still hanging in there (so is the ladder wall).

I think we came up with a good pattern today that preserves the biological intent of the original spill pattern while significantly reducing the turbulence in the erosion holes. I do think it would be a good idea to check it periodically as the river Q and tailwater drop.

Thanks, Gary

-----Original Message-----

From: Erick VanDyke [mailto:erick.s.vandyke@state.or.us]  
Sent: Thursday, July 21, 2016 8:26 AM  
To: Miller, Jason G NWP <Jason.G.Miller@usace.army.mil>; Ebner, Laurie L NWP <Laurie.L.Ebner@usace.army.mil>; Mackey, Tammy M NWP <Tammy.M.Mackey@usace.army.mil>; Baus, Douglas M NWD <Douglas.M.Baus@usace.army.mil>; BPA Scott Bettin <swbettin@bpa.gov>; Charles Morrill (charles.morrill@dfw.wa.gov) <charles.morrill@dfw.wa.gov>; Statler, Dave <daves@nezperce.org>; david\_swank@fws.gov; Ed Meyer (ed.meyer@noaa.gov) <ed.meyer@noaa.gov>; Eppard, Matthew B NWP <Matthew.B.Eppard@usace.army.mil>; Erick VanDyke <erick.s.vandyke@state.or.us>; Fredricks, Gary <Gary.Fredricks@noaa.gov>; Jen Graham <jennifer.graham@ctwsbnr.org>; Kiefer,Russell <russ.kiefer@idfg.idaho.gov>; Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>; Lorz, Tom <lorz@critfc.org>; Petersen,Christine H (BPA) - KEWR-4 <chpetersen@bpa.gov>; Sears, Sheri <Sheri.sears@colvilletribes.com>; trevor.conder@noaa.gov; Wright, Lisa NWD <Lisa.S.Wright@usace.army.mil>; Hausmann, Ben J NWP <Ben.J.Hausmann@usace.army.mil>

Subject: [EXTERNAL] RE: FPOM: BON B-Branch erosion conference call notes (UNCLASSIFIED)

Thanks for the information Jason. I appreciate the prospective. Is the survey conducted in 2011 before the repair also available. It might help frame the larger picture if that piece of information were included.  
Thanks.

Erick Van Dyke  
Oregon Department of Fish and Wildlife  
17330 SE Evelyn Street

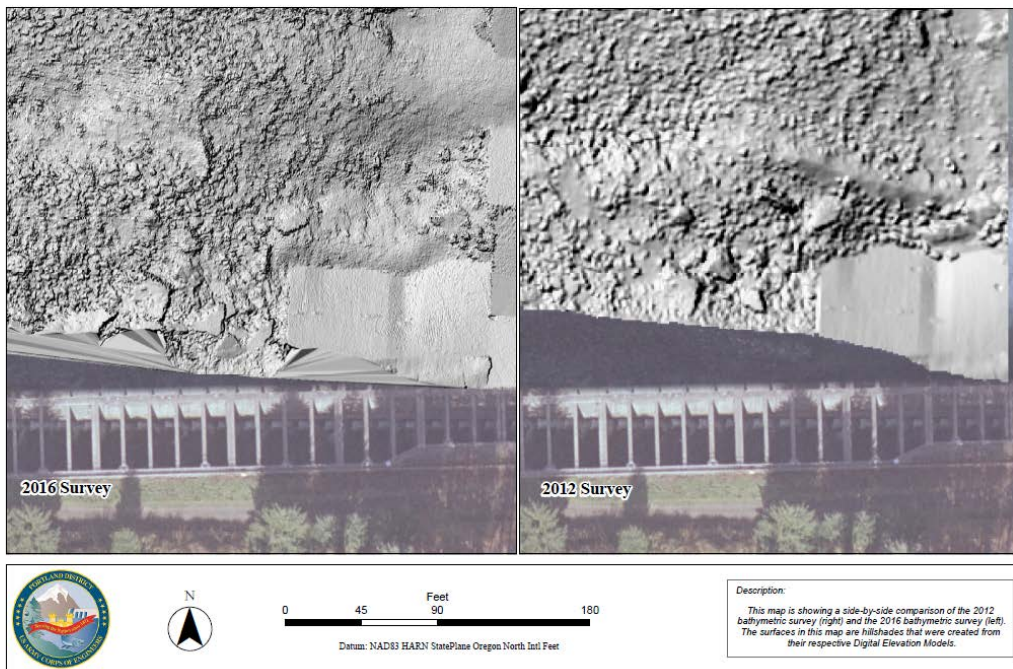
Clackamas, Oregon 97015  
Voice: 971-673-6068  
Fax: 971-673-6073

**Final results: A teletype was sent to Bonneville Dam control room to adjust the spill gates to the new spill pattern. Until the pattern is entered into GDACS, the spill gates will be adjusted manually.**

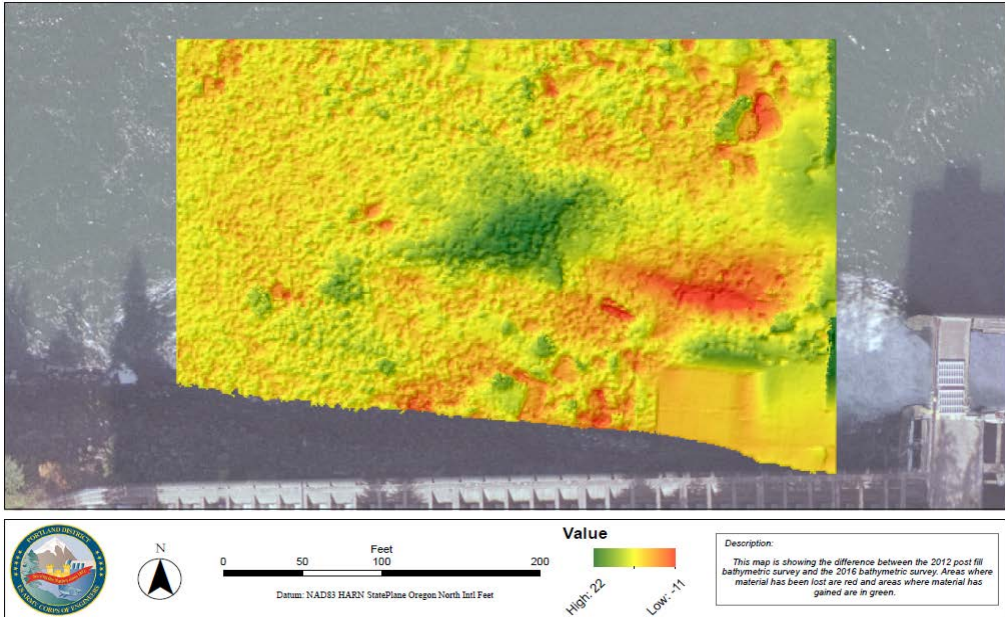
Please email or call with questions or concerns.  
Thank you,  
Erin

Erin Kovalchuk  
NWP Operations Division Fishery Section  
Columbia River Coordination Biologist  
[Erin.h.kovalchuk@usace.army.mil](mailto:Erin.h.kovalchuk@usace.army.mil)

### BONNEVILLE SPILLWAY ANALYSIS



# BONNEVILLE SPILLWAY ANALYSIS



## Bonneville Survey Comparison



