

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

COORDINATION TITLE - 15WVP02 North and South Santiam Spawning Flows during the Drought

COORDINATION DATE - 10 September 2015

PROJECTS - Detroit/Big Cliff, Green Peter/Foster

RESPONSE DATE - 23 September 2015

Description of the problem

Abnormally dry conditions have impacted the ability to store water in Willamette Basin reservoirs this year, and thus have impacted downstream flows including those in the North and South Santiam Rivers. Regional coordination and adaptive management of the Willamette Corps' dams has resulted in fairly stable streamflows (below Big Cliff: 900-1,000 cfs, below Foster: 700-800 cfs) in the Santiam rivers for fish, water quality and other water needs during the drought, while retaining storage to provide adequate flows as we move into the winter season.

On September 9, 2015 the National Marine Fisheries Service requested that flows increase in both the North and South Santiam rivers to 1,500 cfs to benefit spawning spring Chinook salmon. After discussion at the Flow Management and Water Quality meeting (September 10, 2015) it was agreed that flows would be increased on the North Santiam below Big Cliff Dam to 1,200 cfs and to 1,100 cfs in the South Santiam below Foster Dam. This agreement was based on risk and the uncertainty in climatic conditions (precipitation) as we move into the fall and winter.

Information from ODFW field survey crews will be used to adaptively manage flows during spawning. After most spawning has occurred, flows will be decreased during the incubation period for eggs in redds (see below). Further assessment will continue to balance flows for fish while retaining storage to sustain flows in the event that the Willamette Basin experiences a dry fall and early winter.

Type of outage/operation

North Santiam (DET/BCL):

Flows will be increased to 1,200 cfs on the North Santiam below Big Cliff Dam from September 11 until October 1 for spawning spring Chinook salmon in the North Santiam River. Flows will initially be decreased to 1,000 cfs during incubation of eggs in redds. Flows may be further decreased if seasonal rains do not occur. A key flow target is 750 cfs to protect the City of Salem's water supply. Flows may be decreased before Oct 1 if storage is exhausted and risk levels are unacceptable.

South Santiam (GPR/FOS):

Flows will be increased to 1,100 cfs in the South Santiam River below Foster Dam from September 11 until October 1 to benefit spring Chinook salmon spawning. Flows will then be decreased to 800 cfs during incubation of eggs in redds. Flows may be further decreased if seasonal rains do not occur. We will shape the reduction of outflows to ensure adequate storage for flow augmentation in the event that extremely dry conditions persist. Flows may be decreased before Oct 1 if storage is exhausted and risk levels are unacceptable.

Impact on facility/system operation/other considerations

- Increased turbidity may be observed downstream as reservoir levels are drawn down and scouring of newly exposed reservoir sediment occurs during rainfall events.
- As drawdown occurs at Green Peter Reservoir the Kokanee fish population may be impacted.
- Reservoirs will store storm events until minimum conservation pool is reached. Outflows will not be increased until then.

Dates of operation

September 11 to approximately October 1 (North Santiam: 1,200 cfs, South Santiam: 1,100 cfs). Thereafter, lower flows for incubation of eggs in redds will be employed.

Expected impacts to ESA listed fish

- Increased flows will benefit ESA listed spawning spring Chinook providing some additional habitat.
- By increasing flows to provide additional habitat for spawning spring Chinook there is substantial risk of dewatering redds during the continued drought.

Comments from agencies

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

From: Walker, Christopher NWP
Sent: Flow Management and Water Quality Team
Subject: N/S Santiam Flows, RE: Willamette Project October

Hello,
The Corps will begin implementing flow decreases discussed this week. We are less concerned how the ramp down is shaped over the next couple of weeks, however, feel strongly about getting flows to levels to mitigate risks. Flows should be at or near 1,000 cfs below Big Cliff Dam on the N. Santiam and at or near 800 cfs in the S. Santiam by Oct 15. The flow target for the S. Santiam is less than the recommended minimum flow of 900 cfs, however, the BiOp states that when 'reservoir levels are at or below minimum conservation pool, that minimum outflow would equal inflow or the congressionally authorized min flows, whichever is higher.' Although both DET and GPR are below minimum conservation pool, we realize the importance to balance flows for spawning spring Chinook salmon with other risks related to diminished storage.

(N. Santiam: current inflow ~ 400 cfs, authorized min. flow 750 cfs)
(S. Santiam: current inflow ~ 50-80 cfs, authorized min. flow 400 cfs)

As mentioned during the call, the team will soon need to discuss potential flows for late fall/early winter. Without significant precipitation in the coming months, the current low flows may need to be further reduced to mitigate dam safety risk factors as well as facilitate the winter/spring refill.

Feel free to contact me with any questions.

Chris Walker

US Army Corps of Engineers
Operations Division
Fish Biologist
w: 503-808-4316
c: 503-887-6452

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

From: Anne Mullan - NOAA Federal [mailto:anne.mullan@noaa.gov]
Sent: Wednesday, September 30, 2015 2:58 PM
To: Walker, Christopher NWP; Scullion, Mary K NWP; Elise Kelley;
Tackley, Kathryn; Teed, Tina J NWP
Cc: Domingue, Rich; Stephanie Burchfield - NOAA Federal; Bernadette
Graham-Hudson
Subject: [EXTERNAL] Willamette Project October

Following our review of available information on fish spawning and current and project reservoir levels, NMFS recommends the following operations:

Drop releases to 1200 cfs from Big Cliff Dam following ramping rates or slower, beginning October 1, 2015, and holding at that level until further notice. By Tuesday, October 6, we will have updated information on conditions of existing redds, bacterial kidney disease, prepawning mortality levels, and whether peak spawning has occurred. We may recommend dropping by another 100 cfs on October 8, 2015, but otherwise will wait until after the next flow call on October 13, 2015.

Drop releases from Green Peter Dam at ramping rates or slower starting October 1, 2015 followed by another 100 cfs drop on October 8, 2015. Further drops may be recommended after the next flow call on October 13, 2015.

Please let us know when these flows have been achieved.

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Anne Mullan
National Marine Fisheries Service

West Coast Region, OR/WA Coastal Office
1201 NE Lloyd Blvd, Suite 1100
Portland OR 97232
503.231.6267

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

From: Richard Domingue - NOAA Federal [mailto:richard.domingue@noaa.gov]
Sent: Thursday, September 17, 2015 6:22 PM
To: Walker, Christopher NWP; Scullion, Mary K NWP; Elise Kelley;
Tackley, Kathryn
Cc: Anne Mullan - NOAA Federal; Stephanie Burchfield - NOAA Federal
Subject: [EXTERNAL] Willamette Project

NMFS requests that the Corps release flows of 1300 cfs at Big Cliff Dam following ramping beginning September 17, 2015, and ramping down to 1000 cfs on October 16.

If spawning appears to be completed prior to Oct 15, dropping 100 cfs per week may instead be advised, but we would discuss based on spawning survey results before or on October 1st.

NMFS also requests holding flows at Green Peter to 1100 cfs given fewer diversions downstream affecting spawners. We recommend ramping down to 900 on October 16, unless spawning appears to be completed earlier, at which time dropping 100 cfs per week may be advised, but we expect to discuss based on spawning survey results.

Please let us know when these flows have been achieved.

--

Richard Domingue
503-231-6858

From: Walker, Christopher NWP
Sent: Tuesday, September 15, 2015 7:37 AM
To: 'Elise X Kelley'; and Flow Management Team;

Hi Elise,
Memorandums of coordination (MOC) are not supposed to serve as meeting notes, but to initiate and document coordination. I'm not sure what part was misrepresented, but you are welcome to comment right in the document on specifics (e.g. Agency Comments section, review comment feature in word).

Any e-mails related to this coordination action will also be inserted into the document. This way we document coordination while allowing all agencies to provide input.

Feel free to contact me with any additional questions.

Chris Walker
US Army Corps of Engineers
Operations Division
Fish Biologist
w: 503-808-4316
c: 503-887-6452

From: Elise X Kelley [mailto:elise.x.kelley@state.or.us]
Sent: Monday, September 14, 2015 4:47 PM
To: Chris Walker and Flow Management Team

Hi Chris,
While I understand wanting to put the flow discussion into writing, I think that the document attached to your email misrepresents the discussion that took place. ODFW and NMFS agreed to temporary flow levels of 1200 cfs on the N. Santiam and 1100 cfs on the S. Santiam

until a review of additional model runs could be conducted. Please ensure that the document is changed to reflect this.

Now that ODFW has had an opportunity to review additional model runs, we are interested in flows on the N. Santiam being increased to 1400 cfs this week until Oct. 15th. If there is evidence after Sept. 30th that the peak spawn has passed, then there could be an opportunity to ramp down flows 100 cfs per week until Oct. 15th when flow would be maintained at 1100 cfs.

On the South Santiam, ODFW is interested in flows being increased to 1200 cfs from the current temporary flow of 1100 cfs until Oct 15th, at which point flows would ramp down to 1,000 cfs. If there is evidence after Sept. 30th that the peak spawn has passed, then there could be an opportunity to ramp down flows 100 cfs per week until Oct. 15th when flow would be maintained at 1000 cfs. BKD appears to be especially strong this year as was mentioned in the call, and having more water in the S. Santiam will be important to decrease incidence of this disease.

I was also confused by the sentence in the document " Flows may be decreased before Oct 1 if storage is exhausted and risk levels are unacceptable". Under what scenario is ACOE thinking that storage in either Detroit or Green Peter may be exhausted by October 1st?

Thanks,
Elise

Final results

Flows implemented as coordinated.

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

Chris Walker
NWP Operations Division Fishery Section
503.808.4316
Christopher.E.Walker@usace.army.mil