

MEMORANDUM FOR THE RECORD**SUBJECT:** 23NWP01 MFR Temperature reporting

On 11 July FPC sent a memo with the subject “Protocols for obtaining ladder temperature data from COE Portland District”. [230713 FPC temp memo 32-23](#).

Temperature reporting is a requirement of both the 2020 CRS BiOp and the current FPP. The pertinent sections are pasted below.

1.) The 2020 CRS ITS states on page 1399 of the BiOp:

To continue this work and further improve fish passage for adult sockeye salmon under high temperature conditions, the Action Agencies shall:

Continue monitoring and reporting of all mainstem fish ladder temperatures and identify ladders with substantial temperature differentials (>1.0°C).

2.) The current FPP states for each mainstem project: 2.4.2.11.b.

From June 1 through September 30, measure water temperature at adult fishway entrances and exits and submit data to the Fish Passage Center (FPC) weekly for posting online.³ Ensure the location of the monitors meets the following criteria:

i. Within 10 meters of all shore-oriented entrances and exits.

ii. Entrance monitor within 1 meter above the ladder floor and at least 10 meters downstream of ladder diffusers, if possible, to allow for sufficient mixing with surface water.

iii. Exit monitor within 1 meter above the ladder floor and above all diffusers to allow for sufficient mixing with surface water.

iv. If an existing temperature monitoring location is proposed to be used for either the exit or entrance, verify that the site accurately reflects water temperature within 10 meters of the entrance or exit.

The status of each project is below.

John Day Lock and Dam – Fisheries believes they have been reporting ladder temps without any issues. They have deployed additional probes in reporting locations for redundancy and everything is working well. No probes are OOS at this time. They have explored switching to the NWW system however, cost and configuration have been obstacles in the past. Since there isn’t an issue at this time, JDA will remain with the system they currently have.

NWP and JDA will investigate the opportunities to recover/provide historical temperature data.

The Dalles Lock and Dam – Fisheries has had some stillwell pipe failures over the years at the entrance areas. Temperatures have not been collected in those areas and this wasn’t seen as an issue since the differential was minimal. They had not received feedback on their weekly status report temperature graphs, so no additional action was taken at the time. TDA Fisheries will look for suitable locations to temporarily install Hobo probes for the remainder of the 2023 fish season. For the ‘23/’24 winter maintenance season, new stillwell pipes will be installed and Hobo probes deployed.

NWP and TDA will investigate the opportunities to recover/provide historical temperature data.

Bonneville Lock and Dam – Fisheries reported that the following information has been relayed to FPC and they are aware of the temperature reporting issues at BON.

The hardware for the BON temperature probe coupler was corrupted and corrupted all of the temperature probes in some fashion. Two out of eight probes (B-Branch Entrance and CI LPS) were salvageable, and that data has been sent to FPC. For the eight corrupted probes, all data from the last three

weeks has been lost. Corrupted probe locations include:

- A-Branch entrance,
- BI LPS, BI exit,
- WS NDE,
- WS exit at FV6-9,
- WS LPS,
- AFF,
- JMF sample tank.

As of 20 July, the Project received a new HOBO Shuttle and re-programmed and re-deployed probes. Data from these probes should be available in next week's weekly report. After re-deployment, two probes remain OOS: LFS probe and CI Entrance. The LFS probe is not operating and the CI Entrance probe is stuck in the stillwell. This probe will likely remain OOS until CI is dewatered and the probe can be safely retrieved. Fisheries is talking with USGS about a permanent gauging system. This will likely be cost prohibitive at this time.

BON Project Fisheries wrote *"Our system has been a constant strain and is not feasible for the long term. Some issues can't be addressed until dewaterings and others take up hours of our time every week. Tech staff has helped us set up macros that reduce data transfer time a little bit but that comes with its own set of issues. Newer, cheap, more efficient options are available, but they use Bluetooth and our cyber security folks won't let us use them due to Army security protocols... In house build estimates approach 100k, and off the shelf setups from Campbell Scientific run at least \$50k plus labor but come without much support and I'm told would have a short life of several years. We are glad this is being brought up and are fully in support of a cohesive, automated, hardwired system (preferably from USGS) that would allow us to spend our time on [other] issues."*

Sincerely,
Tammy Mackey
Columbia River Coordinator
and on behalf of
NWP Projects Fisheries