



FISH PASSAGE CENTER

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MEMORANDUM

TO: Tom Lorz (CRITFC, FPOM Condition Monitoring Task Group co-chair)
Trevor Conder (NOAA, FPOM Condition Monitoring Task Group co-chair)

FROM: Michele DeHart

DATE: January 25, 2016

SUBJECT: Review of draft proposal: *NOAA's Generic Minimum Juvenile Salmon Condition Monitoring Requirements*

We appreciate the opportunity to provide comments on the draft proposal entitled *NOAA's Generic Minimum Juvenile Salmon Condition Monitoring Requirements* that was circulated to the Fish Condition Monitoring Task Group at the December 17, 2015, Fish Passage Operations and Maintenance (FPOM) meeting (attached at end of this document). After reviewing comments on a similar proposal that was circulated to FPOM in June 2015, NOAA staff issued this follow-up proposal.

As with the original proposal, the December draft indicates that it is a proposal for minimum condition monitoring at all FCRPS projects with an operating juvenile bypass system (JBS) that are not part of more intensive monitoring efforts such as the Smolt Monitoring Program (SMP) or juvenile transportation monitoring. However, our original comments from the June draft still pertain, as the steps outlined in this new draft are limited to the unique sampling limitations that exist at Ice Harbor Dam. Consequently, we do not believe this proposal should necessarily apply to other sites in the future. Below is a brief synopsis of our comments, followed by more specific review of each of the six steps outlined in the proposal.

- In 2016, there is only one FCRPS project that this proposal would pertain to, Ice Harbor Dam (IHR). This is because all other FCRPS projects with a JBS are part of the SMP. Since the steps outlined in this proposal seem to be tailored to specific limitations that

exist at IHR, we recommend that the title of this proposal be changed to *2016 Fish Passage guidance for minimum condition sampling at Ice Harbor Dam, as required by the 2008 Biological Opinion, RPA 53*.

- If the purpose of the December proposal is really meant to apply to all FCRPS projects with a JBS, in the absence of the SMP or other more intensive monitoring, then the minimum condition monitoring protocol should reflect what information the fisheries managers need for management/operational decisions, recognizing that these needs may not be met at all projects due to project-specific limitations. Minimum condition monitoring could then be tailored for each applicable site based on site-specific limitations.
- The proposed minimum sampling of twice per week is not sufficient, particularly since this recommendation seems to be based on IHR where condition data are scarce to begin with. The purpose of condition monitoring is to detect sudden increases in injury, descaling, or mortality that may be attributable to project operations. Therefore, prolonged periods without sampling could lead to missed events. A more prudent approach would be to collect data more frequently for the first year (or few years) and then use these data to evaluate whether a reduced sampling frequency is warranted. Furthermore, when recommending frequency of sampling, the managers should consider how long they are willing to go without any data to inform operations.
- If the agreed upon minimum condition monitoring occurs less frequently than every day, there should be a provision in the protocol that calls for increased frequency if/when issues such as elevated descaling, injuries, and/or mortality arise. This would enable the COE and fisheries managers to assess the effectiveness of changes in operations intended to remedy such events.
- We disagree that 24-hour sampling is not necessary for condition monitoring. As with the June proposal, this seems to be based on the specific limitations at IHR where a 24-hour sample is not possible due to limitations in holding. As written, this statement could limit the ability to conduct a 24-hour condition sample at some other facility where holding is possible.
- Where possible, the FPC would recommend a 24-hour condition sample, as this would incorporate fluctuations in operations throughout the day and account for differences in diel passage behavior among species. A limited duration sample would be limited to informing only a small portion of the operations and, potentially, a small subset of the species that are passing (depending on when the sample is taken).
- We agree that, regardless of who is collecting the information, condition monitoring should follow the standardized SMP protocol, as outlined in the current season's Condition Monitoring Protocol.
- We agree that the preferred method of recording and reporting condition data would be for all sites to use the Fish Passage Center's FPC32.net data entry program. The FPC is more than willing to provide FPC32.net to whoever is collecting these data at non-SMP sites. Use of FPC32.net also enables these data to be made available to the public via the FPC website, in real time.

The December proposal continues to state that the outlined steps would apply to all FCRPS projects with an operating JBS that are not part of more intensive monitoring efforts such as the SMP or juvenile transportation monitoring. Currently, there is only one FCRPS project that fits these criteria, Ice Harbor Dam (IHR). Hence, the steps outlined in the proposal seem to be tailored to IHR, which has its own specific limitations when it comes to sampling juvenile salmonids. For this reason, we would recommend that the title of the proposal be changed to *2016 Fish Passage guidance for minimum condition sampling at Ice Harbor Dam, as required by the 2008 Biological Opinion, RPA 53*.

Step 1 – Sample goal should be 100 fish of each of the predominant species of salmonids on each sample day however, all fish collected during the sample would be examined and recorded. The sample rate should never exceed 10% during periods of low passage.

The target sample size of 100 fish of the predominate species, while still examining all other fish in the sample, is similar to what is currently being done at the FCRPS projects that are part of the SMP. However, it is unclear as to why the proposal calls for a maximum sample rate of 10% during periods of low passage. Perhaps this is another example of the specific limitations at IHR. Instead of focusing on a maximum or minimum sample rate, the protocol should state that the sample rate should be set to accomplish the target sample size over the intended amount of time of the sample (see comments on Step 3 below for more detail). Project-specific limitations may exist that limit sample rates, but these specific limits should not be the focus of a protocol that may be applied across sites.

Step 2 – Sample no less than twice per week, with no more than three days between sample days. Increased frequency may be necessary at some dams (to be worked out by an FPOM) and during periods when injuries are being noted or suspected (e.g., high debris periods).

The proposed minimum sampling of twice per week is not sufficient, particularly since this recommendation seems to be based on IHR where existing condition data are scarce. Without frequent samples, it is difficult to know what data might be missed under a reduced sampling frequency. The purpose of condition monitoring is to detect sudden increases in injury, descaling, or mortality that may be attributable to project operations. In a memo to the Fish Passage Advisory Committee (FPAC), the FPC outlined the impacts of infrequent sampling on managers' ability to adequately monitor the condition of juveniles passing through the FCRPS ([FPC memo dated May 19, 2014](#)). In this memo, the FPC highlighted that issues with injuries, descaling, and/or mortality are often sudden in their occurrence. Therefore, when sampling occurs less frequently than every day, these episodes may be missed until the next sample is taken, which could be up to four days under this proposal. The best insurance policy to assure that no events are being missed would be to sample daily. Anything less than daily sampling comes with a risk of missing an event. When considering a minimum frequency of sampling, the managers will have to determine the risk they are willing to accept if condition monitoring is not conducted daily.

Step 3 – Sampling should only be conducted during relatively high daily passage periods (typically after dusk). Long term holding and 24 hour sampling is typically not necessary for condition sampling and should be avoided to the extent possible.

Again, the limitation in sampling duration in this proposal seems to be specific to project limitations at IHR, where fish cannot be held for extended periods of time. Since this minimum condition monitoring protocol is intended to apply to all FCRPS sites that are not part of more intensive monitoring, these project-specific limitations should not be the standard. Instead, the duration of the sample should be set based on what information the fisheries managers need in order to make management/operational decisions, recognizing that project-specific limitations may exist that prohibit the desired minimum duration at some sites. In the May 19, 2014, memo, the FPC highlighted many issues that may exist when samples are limited to some period less than 24 hours. These issues are summarized below.

A partial sample is only representative of what passed through the bypass during the limited period of the sample and, thus, the project operations for that limited period. In addition, passage of salmonids is often diurnal, with generally larger proportions passing during early evening and nighttime hours than during daytime hours. While the proposal does suggest that samples should occur around dusk, the only way to assure that the condition sample is representative for all species passing through the project would be to conduct a 24-hour sample. Finally, issues with injuries, descaling, and/or mortality are often episodic and sudden in their occurrence. A limited duration sample has a higher likelihood of missing episodes. Conversely, it is also possible that a limited duration sample may cause an overreaction to a perceived episode. The only way to assure that the condition sample is representative for all operations and all periods over the day would be to conduct a 24-hour sample. The FPC recommends that condition samples be collected over a 24-hour period.

Step 4 – Fish condition reporting should follow the standardized SMP protocol for descriptive categories as outlined in the current season Condition Monitoring Protocol. Currently, this is section II. Detailed Description of Salmonid Condition Sampling for SMP (http://www.fpc.org/documents/metadata/ConditionSamplingProtocol_2015.pdf).

We agree that all FCRPS sites with a JBS should follow the condition monitoring protocol that is currently being implemented at SMP projects. As implied by the supplied web-link in Step 4, the FPC makes the condition monitoring protocols available to the general public via our website and will post the 2016 protocol as soon as it is completed (prior to the implementation of the 2016 SMP Sampling Season).

Step 5 – GBT Monitoring is separate from minimum condition monitoring per RPA 53 and must be followed according to TDG waiver requirements.

We recommend removing this step, as it may cause undue confusion as to what condition monitoring entails. By reviewing the Condition Monitoring Protocol that is specified in Step 4, it should be clear that GBT monitoring is not part of condition monitoring and, therefore, does not need to be included in this proposal.

Step 6 – Sampling results should be posted within the next twelve hours after sampling. These should include, at a minimum; sample rate, number of fish examined by species, percent and number exhibiting each malady by species and total. We would prefer that the data be provided to the Fish Passage Center (preferably using the FPC32.net data entry program or current equivalent) for posting on the FPC website. If this option is not available for some reason, online reports should be posted to the FPOM webpage. If these online sites are not available, reports should be emailed directly to the current NOAA Fisheries FPOM members.

We agree that the preferred method of collecting and reporting condition data from non-SMP sites should be through the use of the Fish Passage Center's FPC32.net data entry program and the FPC's website. The FPC is more than willing to provide FPC32.net to whoever is collecting these data at non-SMP sites. While the FPC is happy to make the data entry software available, all non-SMP sites would need to supply their own hardware (e.g., computers, touch screen monitors, scales, etc.). Use of the FPC32.net data entry program also enables these condition data to be made available to the public via the FPC website, in real time.

The FPC will need to make a few modifications to FPC32.net if non-SMP sites are going to use it for condition monitoring data entry and data posting. These modifications would include adding a new site name and modifying the program that we use to post the data to our internal databases and the web. Although fairly minor, these modifications would require some lead time to complete. Therefore, we ask that the FPOM Condition Monitoring Task Group provide as much lead time as possible in order for us to make the necessary modifications.

ATTACHMENT

DRAFT

December 16, 2015

FILE MEMORANDUM

FROM: Gary Fredricks and Trevor Conder, NOAA Fisheries

SUBJECT: NOAA's Generic Minimum Juvenile Salmon Condition Monitoring Requirements

2016 Fish Passage guidance for minimum condition sampling as required by the 2008 Biological Opinion, RPA 53:

To be implemented at each FCRPS project with an operating juvenile bypass system during the juvenile fish passage season when no other more intensive monitoring is occurring (e.g., Smolt Monitoring Program (SMP) index monitoring and fish transport monitoring):

1. Sample goal should be 100 fish of each of the predominate species of salmonids on each sample day however, all fish collected during the sample would be examined and recorded. **The sample rate should never exceed 10% during periods of low passage.**
2. Sample no less than twice per week, with no more than three days between sample days. Increased frequency may be necessary at some dams (to be worked out by FPOM) and during periods when injuries are being noted or suspected (e.g., high debris periods).
3. Sampling should only be conducted during relatively high daily passage periods (typically after dusk). Long term holding and 24 hour sampling is typically not necessary for condition sampling and should be avoided to the extent possible.
4. Fish condition reporting should follow the standardized SMP protocol for descriptive categories as outlined in the current season Condition Sampling Protocol. Currently this is section II. Detailed Description of Salmonid Condition Sampling for SMP (http://www.fpc.org/documents/metadata/ConditionSamplingProtocol_2015.pdf).
5. GBT monitoring is separate from minimum condition monitoring per RPA 53 and must be followed according to TDG waiver requirements.
6. Sampling results should be posted within the next twelve hours after sampling. These should include, at a minimum; sample rate, number of fish examined by species, percent and number exhibiting each malady by species and total. We would prefer that the data be provided to the Fish Passage Center (preferably using the FPC32.net data entry program or current equivalent) for posting on the FPC website. If this option is not available for some reason, online reports should be posted to the FPOM webpage. If these online sites are not available, reports should be emailed directly to the current NOAA Fisheries FPOM members.