

**Willamette Action Team for Ecosystem Restoration (WATER)
Research, Monitoring and Evaluation (RM&E)
May 24, 2018 Meeting**

Facilitator's Summary

ACTION	BY WHOM?	BY WHEN?
Submit edits or comments to the April 26, 2018 meeting summary	RM&E Team	May 31, 2018.
Provide the concept paper and RM&E comments to Cindy/Corps and initiate the ResSim modeling.	Fenton	ASAP
Revise JPL – 18-04-SYS and provide to the RM&E Team for further review.	Rich and Rachel	June 28, 2018 RM&E Team meeting
Send the tissue sampling proposal to the team. RM&E team members will provide input and identify any gaps or needs for sampling. Rich and Rachel will email a final proposal to the RM&E Team leads.	Rich and Rachel, RM&E Team	ASAP
Prepare and share FY19 concept papers with the team (send to Nancy for distribution)	Rich, Fenton	June 8, 2018
Create tracking table for the concept papers.	Nancy	June 28, 2018 RM&E Team meeting
Provide comments on concept papers	RM&E Team	ASAP prior to June 28, 2018 RM&E Team meeting
Provide the proposals regarding SWIFT to the RM&E Team and revise the FY19 Planning Tables to include work being done by SWIFT.	Rich	June 28, 2018 RM&E Team meeting
Follow-up with Jeff Ziller regarding existing data on the habitat downstream at Dexter.	Kelly	June 28, 2018 RM&E Team meeting
Update Middle Fork RM&E Study Schedule to reflect the current status as Version 2; send the updated plan to the team.	Rich	June 28, 2018 RM&E Team meeting
Follow-up with Emily on tracking sheets and meeting availability and send a doodle poll to the group to determine availability to meet on a different date.	Nancy	ASAP

Participants in the Room: Leslie Bach (NPCC), Diana Dishman (NMFS), Mike Hudson (USFW), Fenton Kahn (USACE), Rachel Neuenhoff (USACE), Rich Piaskowski (USACE), Kelly Reis (ODFW), Ida Royer (USACE);

Participants on the Phone: Scott Fielding (USACE), Jim Meyers (NMFS), Anne Mullan (NMFS), Lawrence Schwabe (CTGR), Greg Taylor (USACE), Jeff Ziller (ODFW).

Facilitation Team: Nancy Pionk and Colby Mills (DS Consulting)

Welcome, Housekeeping and Updates

Nancy welcomed the group and conducted a round of introductions. She noted that the main task for the meeting would be to work through the RM&E FY19 Planning Table. The group deferred approving the April 26, 2018 meeting summary until the June meeting, to allow time for team members to submit edits or comments.

→ **ACTION:** Team members will submit edits or comments to the April 26, 2018 meeting summary by May 31, 2018.

Updates on FY 18 RME Items

- **APH – 17-01-MF:** *Prespawning Mortality of Middle Fork Willamette Chinook Salmon: improving trap, transport and release operations.*

Rich noted that he had previously discussed this concept with the RM&E team at the April 24, 2018 meeting. The Corps will be seeking a proposal for an implementation plan in FY18 that works out the logistical details for the actual prespawn mortality study that is contemplated in FY19. The implementation plan would lay out the experimental design of the study, the objectives, and how to logistically get the study on the ground. Rich explained that, due to funding cycle timing, the Corps would like to move forward with funding the development of the implementation plan and sought the group's consent to go forward with funding without having reviewed a proposal for the implementation plan. He explained that the RM&E Team would review the implementation plan after it is prepared as well as the proposal for the FY19 study. Group members supported funding the implementation plan in FY18 (without the opportunity to review the proposal) in order to review it in conjunction with the FY19 study. It was noted that that the group needs to be clear on what will be funded in the FY19 study.

- **JPL – 18-xx-LOP:** *Hydrologic Evaluation of Operations for Improving Downstream Fish Passage at Lookout Point Dam*

Fenton provided an overview of this concept paper for ResSim modeling studies that consider delayed refill with spring spill and fall spill. He noted that, based on the ResSim models that Cindy Bowline presented at the last meeting, potential studies seem feasible for a delayed refill with a spring spill and a fall spill.

He explained that, in a delayed refill with a spring operation, instead of filling the reservoir in February, it would be kept low and refill would be delayed until mid-March to encourage fish to move into the reservoir/forebay. The reservoir would then be quickly filled with water from Hill's Creek and spill would occur for a few weeks to provide a surface route for fish passage. In the potential fall spill operation, the reservoir would be kept full for a while longer, instead of drafting the reservoir in September, and the spillway would be used as a fall surface passage route to encourage fall migrants to move out earlier instead of having to rear in the reservoir until spring. He noted that throughout the summer, fish appear to be traversing the reservoir searching for an outlet, so a surface spill in the fall might help with passage.

The ResSim modeling will allow the RM&E Team to look at the potential benefits of these options by: evaluating the frequency that surface spill can occur with a delayed refill and without a delayed refill and when utilizing Hill's Creek to refill. It will also allow the group to consider how often spill could occur in the summer or early fall across different water years and what the potential impacts are, including any effects in the fall on flows for spawning.

Team members were reminded that a field study is not contemplated for FY18; rather this concept paper would allow the RM&E Team to evaluate the potential benefits of the proposed operations for juvenile passage, impacts to other biological needs (downstream flows), and for the Action Agencies to assess the feasibility of these options and impacts to other missions, using ResSim modeling. The Corps hopes that Cindy can be involved in the modeling prior to her retirement in June, given her familiarity with the modeling.

Fenton noted that his best guess and experience (not hard data) is that when fish are in the reservoir, given the opportunity to exit via the spillway they will usually move out within 2 weeks. It was suggested that the modeling consider the length of spill at intervals of 1 week, 2 weeks, and 3 weeks, in spring, summer and fall. Leslie suggested that a table that tracks the information for each ResSim run would be helpful.

The group agreed that the Corps should move forward with the ResSim modeling based on the concept and comments provided from the team. Fenton will share the RM&E team comments with Cindy and she will determine what is doable. The modeling results will be shared with RM&E team for discussion at the June or July team meeting at which time, the RM&E Team can consider what operations might be feasible to implement in FY19. These operations will also need to be simultaneously vetted for feasibility with Corps' water management and by BPA.

Rich noted that it may be helpful to develop concepts that anticipate one or both operations so that there is something tangible to track. He suggested developing them separately as operations, in the event that one operation does not move forward. He also emphasized the importance of RM&E team members keeping the Steering Team members informed, so everyone is aware of the steps being taken. It was also suggested that issues that might limit any proposed operations be brought to the RM&E team as soon as possible, to keep communications clear, up-to-date and transparent.

→ **ACTION:** Fenton will provide the concept paper and RM&E comments to Cindy/Corps and initiate the ResSim modeling. The results will be shared with the RM&E team for further discussion at the June or July RM&E Team meeting.

- **JPL – 18-04-SYS:** *Effects of acute and chronic stressors on survival and dam passage of juvenile Chinook salmon infected with a parasitic copepod*

Rich noted comments were received that have been forwarded to the researchers, asking them to remove eDNA sampling. There was also a request to postpone the decision framework modeling and reservoir ecology modeling until after initial results are available. However, the Corps felt strongly that those objectives should remain. With regard to the

ecological sampling, Rachel explained that if the study can find predictive relationships in the reservoir ecology and if the number of infected fish versus uninfected fish can be predicted, that data could be used to inform how many fish might be lost at the dams, given the conditions and whether or not certain operations are worthwhile. She noted that the reservoir ecology modeling part (GrowChinook) is largely complete, and therefore, if collection was going to occur, it would make sense to run it through the model.

Diana suggested that the decision framework modeling be conducted in a phased manner to address the possibility that the study may not find predictive relationships. She proposed that the decision framework be structured and that a decision threshold be set in the contract with the researchers requiring strong predictive relationships be established before conducting decision framework modeling. Rich agreed that there needed to be a threshold set in the decision analysis. He noted that an initial use of the model is to establish the level of knowledge and how the system works. Right now, there is little information on the ecology of copepods. The decision framework model would allow the team to establish: 1) the hypotheses in the region about how the copepod infection cycles work; 2) what elements are most important to investigate; 3) what information we have; 4) the risk of not having this information; and 4) the value of getting more information. Rachel also noted that the Corps can clarify that the sampling will be from the Cougar reservoir and that this study will be a collaborative effort with the researchers with a level of coordination during the first year.

As next steps, the Corps will consider how to further constrain the decision framework modeling and will bring back another iteration of the proposal for RM&E Team review. Mike also emphasized that survival and treatment are the most important short-term objectives in the next few years.

→ **ACTION:** Rich and Rachel will consider how to further constrain the decision framework modeling and will bring back another iteration of the proposal for RM&E Team review.

- **Adult Chinook Tissue Sampling**

Rich summarized a proposal received from Oregon State University for tissue sampling that the Corps is proceeding to fund. Rich pointed out that this year the Corps is proceeding to fund the tissue samples with CRFM because it supports several ongoing fish passage studies, and O&M funds were not available. Future tissue sampling is expected to be funded by O&M. OSU and subcontractor ODFW propose to collect and archive adult tissue samples at all four major traps (Minto, Cougar, Foster, Dexter.) The RM&E Team noted that adult Chinook tissue sampling at Dexter is the lowest priority. Tissue samples will be collected for out-planted Chinook. For Foster, they will also sample fish that are spawned for hatchery brood. Rich noted that the cost is higher than expected because the study requires funding staff in addition to the normal trap operations staff that are onsite.

→ **ACTION:** Rich will send out the proposal for review by the RM&E team. RM&E team members will provide input and identify any gaps or needs for sampling. Rich and Rachel will email a final scope to the RM&E Team.

FY19 Concept Paper

Diana noted that she distributed a FY19 concept paper prior to the meeting that seeks to "Evaluate interim outplanting strategies for adult UWR Chinook Salmon prior to completion of downstream fish passage at Big Cliff and Detroit dam." This concept will help evaluate whether the right outplanting decisions are being made with the fish available. The team will review this concept further at the June 28, 2018 RM&E Team meeting.

Process for Review of FY19 Concept Papers

The group discussed that the goal is to have all draft FY19 Concept Papers completed and reviewed by the June 28, 2018 RM&E Team meeting. The RM&E team contemplates having a joint meeting with the Steering Team in July to discuss and prioritize the concepts. Once the concepts are prioritized, the Corps will then seek proposals for review. The goal is to establish the program of work for FY19 ahead of the fiscal year. Rich noted that the concepts should establish what the action/question is, why there is an information gap, and what the study objectives are, so that a researcher can identify the appropriate methods to address them.

The group agreed, that to maximize efficiency, they will review concept papers as they come in, so that the group can do any final edits at the June meeting. Nancy will create tracking table for the concept papers. Team members preparing a concept paper should send it to Nancy, who will add it to the table and then distribute the concept paper and table to the group.

→ **ACTION:** Nancy will create tracking table for the concept papers. Team members who are preparing concept papers will send them to Nancy, who will add them to the table and then distribute the concept papers and table to the group. Team members will share concept papers with team prior to the June 28, 2018 team meeting. Team members will provide input as papers are received.

FY19 RM&E Planning Table Review & Discussion *(Continued from 4/26/18, starting with South Santiam)*

Rich reminded the group that the RM&E team is tasked with reviewing columns 3 & 4 of the Planning Tables, and columns 1 & 2 will be reviewed by the Steering Team. He noted that the tables are a planning tool and are not a guarantee that an item will be funded.

South Santiam:

	Planned Issue/Action	Discussion/Action Item
1	Foster Dam Downstream Fish Passage - Post-Effectiveness Performance	<p>This is the first year of a 2-3-year evaluation of the new fish weir; downstream fish passage for Chinook and steelhead juveniles is currently being evaluated.</p> <p>One potential information gap is whether there are TDG levels associated with the new weir that the group should be concerned about? Fenton will review the summary table from the 1st year</p>

		<p>study to determine if questions regarding TDG are answered.</p> <p>Fenton will update the existing concept paper on downstream passage as needed. It was suggested that a summary of the study results regarding TDG and temperature be included with the concept paper</p>
2	Upstream Fish Passage at Foster Dam	<p>The Project Delivery Team will be starting back up later this year.</p> <p>Fenton will be revising the existing concept paper on this item to include: an evaluation of whether spill at Green Peter would create the right temperature for fish to use the ladder and any other needs that the PDT might identify.</p>
3	Complete Reintroduction of Wild Spring Chinook Salmon Above Foster Dam	This is a future action and RM&E is not needed at this time.
4	Complete Reintroduction of Wild Winter Steelhead Above Foster Dam	This is a future action and RM&E is not needed at this time.
5	Downstream Fish Passage in Green Peter Reservoir and at Green Peter Dam	<p>All of the Green Peter planned issue or actions are retained here as placeholders until the policy issue regarding Green Peter is resolved.</p> <p>No concept paper identified at this time.</p>
6.	Upstream Adult Fish Passage at Green Peter Dam	<p>All of the Green Peter planned issue or actions are retained here as placeholders until the policy issue regarding Green Peter is resolved.</p> <p>No concept paper identified at this time.</p>
7.	Reintroduce spring Chinook salmon above Green Peter Dam	<p>All of the Green Peter planned issue or actions are retained here as placeholders until the policy issue regarding Green Peter is resolved.</p> <p>No concept paper identified at this time.</p>
8.	Complete reintroduction of wild winter steelhead above at Green Peter Dam	<p>All of the Green Peter planned issue or actions are retained here as placeholders until the policy issue regarding Green Peter is resolved.</p> <p>No concept paper identified at this time.</p>
9.	Remove or Modify Revetments	This will be moved to the system-wide table as it applies to all sub-basins.
10.	*NEW * Habitat improvements above Foster to support spawning	<p>This should be added to the planning table.</p> <p>Rich will draft a concept paper that will seek to assess the spawning areas and identify if there are alternatives to reduce the risk of Redds scour</p>

McKenzie

	Planned Issue/Action	Discussion/Action Item
1	Cougar Dam Downstream Fish Passage Design - Conveyance Method to Below Dam	<p>There is one active concept paper that relates to copepods. This may need to be split into more than one concept for FY19.</p> <p>There will be a discussion of high head piped bypass at the June 7, 2018 Managers Forum that may address the passage conveyance comparison. The group agreed that further discussion regarding passage conveyance should be deferred until after the Manager's Forum and then reviewed for any revisions to the Information Gap column.</p> <p>Rich will note the interest of the team in developing a white paper [on the advantages of volitional and trap and haul?]</p>
2	Rearing Habitat for Juvenile Chinook Salmon	<p>This question needs to be incorporated into the SWIFT discussion.</p> <p>No concept paper identified at this time.</p>
3	Complete Reintroduction of Wild Spring Chinook Salmon Above Cougar Dam	<p>This will be kept as a placeholder for FY19 pending the completion of the Reintroduction plan.</p> <p>The Reintroduction plan would establish if there is an intent to do an extra level of out-planting in order to increase production in the years prior to improvement.</p> <p>No concept paper identified at this time,</p>
4.	Remove or Modify Revetments	<p>This will be moved to the system-wide table as it applies to all sub-basins.</p>

Middle Fork

	Planned Issue/Action	Discussion/Action Item
1	LOP/DEX Downstream Passage - Head of Reservoir Juvenile Fish Passage	<p>It was noted that, under the operation that is eventually tested, there is a need to study survival through Dexter pool, including predation.</p> <p>No concept paper identified at this time.</p>
2	LOP/DEX At-dam structure downstream fish passage	<p>The RM&E team is waiting for results on the current RM&E study of Chinook fry survival before determining funding for Year 3.</p> <p>No concept paper identified at this time.</p>

3	LOP/DEX Downstream Passage Operations - reservoir deep drawdown below conservation pool elevation	No concept paper identified at this time.
4	LOP/DEX Downstream Passage Operations: Spring and Fall surface spill	The team agreed that a concept paper should be developed as a placeholder.
5	LOP/DEX Downstream Passage Operations: Delay refill of LOP Reservoir with spring and fall surface spill	The team agreed that a concept paper should be developed as a placeholder.
6	Reintroduction of Wild Spring Chinook Salmon Above LOP Dam	This is a future action and RM&E is not needed at this time.
7	LOP/DEX Passage Approach Comparison	The Corps will prepare a concept paper.
8	Upstream Passage Above Dexter Dam	The Corps will update the current concept paper as a placeholder that will incorporate the FY18 implementation plan.
9	Fall Creek Dam Upstream Fish Passage	The Corps will prepare a concept paper.
10	Fall Creek Downstream Fish Passage Operations	The hypotheses about copepods effect on adults might be worth including in this concept paper for evaluating Fall Creek. Pre-spawn mortality is a major issue for that population. The Corps will revise the concept paper related to this Planned Issue/Action.
11.	Remove or Modify Revetments	This will be moved to the system-wide table as it applies to all sub-basins.

System Wide

	Planned Issue/Action	Discussion/Action Item
1	Operational changes for flow and water temperature management discharged from WVP dams	Much of what is moving forward now is being pursued within the SWIFT work. → ACTION: Rich will make the proposals regarding SWIFT available to others. Rich will revise the Current Information/Information Gap to include work being done by SWIFT. No concept paper identified at this time.
2	Hatchery Management	No concept paper identified at this time.
3	Mainstem and Tributary Habitat for Wild Chinook and Steelhead	The Corps (Rich) will prepare a concept paper.

- **ACTION:** Fenton update the existing concept papers for Foster Dam downstream passage, the new Foster weir, and upstream fish passage. Fenton and Rich will prepare concept papers for the Middle Fork sub-basin and the System-wide actions. The group will try to get out as many papers out as quickly as possible (June 8th goal). Team members will send Nancy the concept papers for distribution and submit comments as soon as they can. The team will review the concept papers with tracked changes from comments at the June meeting.

- **ACTION:** Rich will be updating the Middle Fork RM&E Plan with the spill-type operations and group feedback and send it out to the team.

Report on TDG and Chinook habitat availability below Big Cliff and Minto dams

Rich noted that Ricardo has summarized this issue internally at the Corps. At this point there is agreement that there is a TDG issue here. The next step is for Ian and the Steering Team to discuss what actions are needed, given the TDG issue below Big Cliff, and plans for downstream fish passage.

Update on meeting to discuss streamlining of permitting process for RM&E studies

Fenton reported that NMFS, ODFW and the Corps met to discuss streamlining permitting for RM&E studies. Ida drafted a protocol that will be sent out to the researchers when they are funded for any kind of work. It will be shared with the RM&E Team and researchers after it is finalized.

- **ACTION:** Ida will forward the final permitting protocols to Nancy when complete. Nancy will distribute to the RM&E team.

Review of Themes/Suggestions from Check-In Calls

The group reviewed the themes and suggestions from DS Consulting check-in calls earlier in the year. The group agreed that it would be helpful to have an agenda tracking document that tracks action items and conclusions from summaries. It would also be helpful to have a tracking table for reports that tracks comment and edit due dates. Nancy and Emily will discuss and follow-up on this at the next meeting.

Kelly raised the issue of shifting the standing monthly meetings to a different day of the week, to allow for Dave Jepsen to attend (as he has a conflicting meeting on Thursday mornings. She proposed meeting on the last Tuesday of the month.

- **ACTION:** Nancy will follow-up with Emily on tracking sheets and meeting availability and send a doodle poll to the group to determine availability to meet on a different date.

Nancy thanked the group and adjourned the meeting.

Next Meeting: The RM&E Team will meet on June 28, 2018 from 9am – 1pm.

This summary is respectfully submitted by DS Consulting. Suggested edits are welcome and can be sent to nancy@dsconsult.co.