Willamette Action Team for Ecosystem Restoration (WATER)
Research, Monitoring and Evaluation (RM&E)
April 27, 2017

http://www.nwdwc.usace.army.mil/tmt/documents/FPOM/2010/Willamette_Coordination/Willamette%20RME/RME.html

Facilitator's Summary

ACTION	BY WHOM?	BY WHEN?
Review 3/23 RM&E Team meeting summary and provide edits.	Stephanie RM&E Team	5/4 5/11
Prepare concept papers for RM&E Team review	Corps, NMFS, ODFW	5/18
Check to see if the Corps can implement more conservative ramping rates at DET	Rich/Greg	5/25
Follow-up regarding USGS E-flows monitoring plan	Leslie/Stephanie	5/25
Discuss options to shift operations at Big Cliff to decrease TDG	Rich/Greg/Corps	5/25
Provide draft Middle Fork RM&E Plan to team for review.	Rich/Stephanie	5/4
Provide LOP ResSim modelling reports and the Sediment Analysis to the RM&E Team.	Fenton	5/25
Follow-up on actions pertaining to the FY17 proposals and circle back to the RM&E Team.	Rich/Fenton/Greg	
Provide comments on FY17 proposals and Hatchery M&E plan.	RM&E Team	5/4
Schedule a conference call to identify FY 18 concepts for the McKenzie and Willamette Basin.	DSC	ASAP

Participants in the Room: Leslie Bach (NPCC), Stephanie Burchfield (NMFS), Diana Dishman (NMFS), Scott Fielding (USGS), Bernadette Graham-Hudson (ODFW), Mike Hudson (USFWS), Fenton Khan (USACE), Toby Kock (USGS), Rich Piaskowski (USACE), Greg Taylor (USACE), Ricardo Walker (USACE); Valerie Walker (USACE);

Participants on the Phone: Fred Monzyk (ODFW), Cameron Sharpe (ODFW), Lawrence Schwabe (Grand Ronde), Daniel Spear (BPA);

Facilitation & Notes: Emily Stranz and Nancy Pionk, DS Consulting

Welcome and Introductions
Emily welcomed the group, noting that the purpose of the meeting is to continue work on the sub-basin RM&E plans and to check in on FY17 proposals. The group welcomed Valerie Walker, USACE, who introduced herself as the project manager who will be replacing Tim Kuhn when he retires.

Review of Meeting Summaries
The RM&E Team approved the 3/23 summary, pending suggested edits from Stephanie. Stephanie will provide her edits to the team by 5/4; if there are concerns with her edits, they will be raised by May 11th. If no concerns are raised the summary will be considered approved.

→ **Action:** Stephanie will provide edits by May 4th; the team will let Emily know of any objections to the changes by May 11th.

FY 18 Priorities and Sub-Basin Planning - North Santiam Sub-Basin
The team reviewed the RPA Chart for the North Santiam Sub-Basin, which was developed with the Steering Team in February, to further determine RM&E needs for FY18.

In order to help identify the FY18 concepts efficiently, the team agreed on the following process:

1. Review the RPA chart and identify the questions to focus on for FY 18; in doing so, consider:
    a. What do know?
    b. Do we have enough information?
    c. How relevant is the question to decisions that have to be made?
    d. How does the information inform our decisions?
    e. If somebody feels a concept paper needs to be developed, it goes on the list.

2. Clarify the concept that needs to be developed.
3. Clarify action items, including who will prepare the concept paper in preparation for the May 25th meeting?

Furthermore, to expedite the process, the group clarified how they will know if they are getting too deep into the weeds:

1. If we start talking methodology.
2. If we are trying to settle what we know; we don't need to dive into the information, be quick.
3. If we are repeating ourselves.

Adult Passage

How to reduce the effects of mining? When and how should we put wild fish above Detroit? How will we make the decision to put them above Detroit? What to do with the wild fish in the interim (before passage)?

There was interest in collecting and analyzing more data on adult returns and to link the data back to operational scenarios, so that they can assess whether there are operational changes that could be made to assist with passage. The group thought that it would be helpful to add an objective to concept 09-01 that would include real time management of the dam and trap. The results of these studies would inform ODFW's Reintroduction plans, and at the same time the information gathered would feed into the Reintroduction plans. Rich suggested that the concept paper signals the questions that need to be answered to inform the Reintroduction plans. There also may be some direction for outplanting included in the HGMPs.

- **Concept for FY18**: When and how to put wild fish above Detroit and how to best manage the Minto trap.

→ **Action:** Stephanie will update concept 09-01 to incorporate the aspect of real time management.

What are the factors that explain declines in winter steelhead?

The group was interested in taking a holistic look at factors that are contributing to declines in winter steelhead in the basin. This concept will be developed to include the entire Willamette system. Research could be similar to work that Jim Peterson has done and include the number of adults and run sizes over past five years, consideration of historic habitat, and the distribution of spawners. .

- **Concept for FY18**: Investigate factors that contribute to the decline in winter steelhead in the Willamette system.

→ **Action:** Rich will develop this concept paper.

Juvenile Fish Passage

Could HOR collection be used for interim passage? Could the PFFC be used as a HOR?

This concept has been developed in the past in the Middle Fork and the group thought that it could be expanded to the full basin. The upcoming discussion on the HOR alternative in the Middle Fork can inform this question as well as how a prototype/interim collection could be developed.

- **Concept for FY18:** Test HOR as an interim juvenile passage measure**.**

→ **Action:** Stephanie and Mike will update this concept into a system-wide approach.

What factors influence the steelhead residualism rate at the Detroit reservoir?

The group discussed the influence of the reservoir on fish residualism and wondered how it impacts steelhead. It was noted that residualism can be most effectively evaluated once there is a new surface collector in place however, there is a need for research to inform the design of the collector. The group generated more questions to address in the concept paper, including exploring the impact of passage on residualism, differences between hatchery and wild fish, and what various factors are contributing to residualism.

- **Concept for FY18:** What is the residualism rate in a reservoir this size and how does passage impact it? What are the factors leading to residualism?

→ **Action:** Fred and Bernadette will update the 2016 concept paper that addressed these questions.

<u>Downstream Flows</u>

What are the habitat utilization and migration patterns by juvenile Chinook and Steelhead?

This could relate to work exploring the limiting factors for Chinook and steelhead and should be developed with a basin wide approach. It was suggested that juveniles may be getting pushed out of North Santiam before they are ready to out-migrate and before they have imprinted their natal stream. This study could be linked to the work that OSU and ODFW are conducting in FY17.

- **Concept for FY18:** Evaluate habitat use and migration patterns by juvenile Chinook and steelhead relative to flow and temperature.

→ **Action:** Rich will look at the work that OSU and ODFW are doing this year and develop a concept paper to address these questions.

Are current BiOp or flood control ramping rates stranding fish?

The ramping rates are set in the BiOp, however, could be implemented more conservatively in order to help limit potential impacts to fish (the Willamette ramping rates are 50%, whereas the Rogue rates are never above 15%). Although no concept is needed, as the data is already out there, the group was interested in exploring options to take a more conservative approach to ramping.

→ **Action:** Rich and Greg will consult internally to see if it is possible to take a more conservative approach with ramping in order to lessen the impact on fish.

Have all needed flows been addressed (example: e-flows)?

It was unclear if a concept paper needed to be developed on E-flows, as there has been some work done on E-flows, however, the status of the work was unknown.

→ **Action:** Leslie will contact the Nature Conservancy to check in on the status of the monitoring program. She will then follow –up with Stephanie to see if there is a need to develop a concept paper for FY18.

<u>Downstream Water Quality</u>

Do we need to invest in TDG solutions? Are there operational solutions to address TDG?

There was discussion around the high levels of TDG and the need to address both TDG and temperature at Big Cliff in order to address the limiting factors. One option may be to spread the flow over the gates to decrease the TDG, however, this was noted as going against the Corps' safety protocols and as having a limited impact.

Addressing TDG below Big Cliff was signaled as a policy question in part, and it was noted that it is important to make sure that the managers understand the need for both a temperature and TDG solution. There was not consensus around the need for RME regarding TDG in the N. Santiam. Mike suggested that a report could be prepared describing existing TDG problems and why the stream reaches below Big Cliff are important in the interim (pre-downstream passage) and long term (post-completion of downstream passage) periods.

→ **Action:** Rich and Greg will inquire internally as to whether anything can be done operationally to decrease TDG.

Would the new temperature regime targets have positive or negative impacts on fish movement?
The new targets are on track to be implemented this year, so it is a good time to study the effects.
Research needed: The concept should look at the temperature unit accumulation, emergence, spawning and movement.

- **Concept for FY18:** What are the effects of "new" temperature regime targets

→ **Action:** Diane will work with Anne to develop this concept paper.

Hatchery Management
Are there opportunities to address the near-term improvements? Are there interim opportunities to decrease pHOS and increase pNob?
The group discussed factors contributing to high pHOS and ways to decrease pHOS levels. NMFS noted that their intention has been to pass natural-origin fish above Detroit once effective downstream passage facilities are in place, and that would reduce pHOS. However, since downstream passage is now not planned for completion until 2027, there is a need to look at what can be done in the interim. For Chinook in the N. Santiam, pHOS isn't a critical problem because the hatchery-origin fish are all in-basin and genetically similar to natural-origin fish from that subbasin. It was noted that this is largely a policy question at this point, however, the region needs to hear from NMFS as to what they feel should be done in the interim while passage is being restored.

→ Action: Stephanie will talk to Lance and circle back to the team.

Habitat
What is the process to modify revetments? Which revetments are priority for modifications?

- **Concept for FY18:** A concept paper has been developed, however, needs to be updated.

→ **Action:** Bernadette will update the concept paper.

Due to time constraints, the group did not move on to identify the concepts needed for the McKenzie or full basin. They will hold a phone call within the next two weeks to do so. Team members will send Emily the question that they feel need FY18 concepts ahead of time.

Middle Fork RM&E Sub-Basin Plan Schedule
Rich and Stephanie reviewed elements of the Middle Fork RM&E Schedule with the team. The Schedule was approved by both the Steering Team and by the managers at the recent Manager's Forum. Stephanie and Rich are currently identifying the general studies that are needed and are incorporating those into the RM&E sub-basin plan. They anticipated having a draft RM&E plan out to the team the week of May 1st for review.

→ **Action**: Rich and Stephanie will send the draft Middle Fork RM&E plan to the team for review.

Additionally, the Corps would like to organize a workshop with both biologists and engineers to explore the three passage alternatives in the Middle Fork Plan. The workshop will seek to assess the state of the knowledge, what information is still needed, and what is the best way to move forward in investigating alternatives. The timing on this is still to be determined.

LOP Operational fish passage planning update
Fenton provided an update on where the Corps is in preparing for testing the LOP operational scenarios (see attached schedule). He reiterated that the deep drawdown is on schedule to test this year and that the ResSim models and sediment analysis is complete and will be provided to the group. Drafting the reservoir for the deep draw down operation would have to start on August 1st in order to reach the target elevation of 750 ft by November 1st. The Corps is currently working on the Environmental Assessment and Archeological review. The EA will be going out for public comment soon. These two processes are planned to be complete in July if all goes well. Fenton is also coordinating this special operation with BPA and will continue to update the RM&E team as the planning efforts progress. Fenton confirmed with the RM&E team, especially NMFS and USFWS, no additional ESA consultation is required for this deep drawdown operation and any other related research in the Willamette Basin because the BiOp included the effects of interim operations and RM&E on listed fish.

Fenton also reviewed the free (ungated) spillway overflow and delayed refill options. The team agreed the free (ungated) spill option is a priority for next year (spring 2018).

→ **Action:** Fenton will provide the team with copies of the reports regarding ResSim modelling and the Sediment Analysis. He will also keep the team apprised on the Corps' planning progress. [*Facilitator's Note: Following the session it was realized that the ResSim models have to be rerun because the previous versions were run before the spillway gates were repaired. The spillway gates have all been repaired and we need to rerun the models. Fenton will send out the new models in a couple of weeks.*]

Updates on FY17 Proposals
Corps' summer pulse flow: Rich reported out on a pulse flow test that will be coordinated to evaluate impacts on water temperature. Water needs to be moved out of the system (specifically from Hills Creek and LOP) to allow for the deep draw down, so the USGS will monitor the shape, duration, magnitude, and impacts on downstream water temperature. USGS has done modelling at Salem to determine how much water is needed to change temperatures; this model incorporates air temperature and flow. The pulse will take place in July or August and will be managed in real-time. Fenton stated that the SOR for the Deep Drawdown will cover this.

Rich requested RM&E Team input and support. Leslie noted that The Nature Conservancy is planning a levee breach in August and will need to be coordinated with. The RM&E team supports this proposal. The team also supported linking station temperature and results from Stan's upcoming electrofishing data.

→ **Action:** The Corps will work with USGS to frame up the details of the study; they will consult with Mary Karen and then bring it back to the RM&E Team.

OSU and ODFW mainstem fish study (Stan's): Diana reported that the sampling protocols and take allocation was changed. They will only sample above Willamette Falls and revisit sites already sampled; this way they will not take strays from the Columbia (which they do not have take for). The permit allows them to encounter (see) 25 winter steelhead adults and just over 500 juveniles. They are allowed to encounter 90 adult Chinook. These numbers have increased, however, are within an order of magnitude from the previous take allocations. With this, they might have the ability to sample for more days. The RM&E team supported continued sampling and had no concerns with this approach.

USGS Lookout Reservoir Fry Survival Study: Scott and Toby provided an update on the study, noting that the study was revised due to ongoing spill. They released the first group of fish on April 18-19 and plan to sample for capture efficiency the week of May 20 (to determine how many fish survived in the first month). Release group #2 will go out the following week. There have been three spill days since the release and spill is expected to continue through mid-June. They are trying to determine how they can mitigate for spill/water. Option one would be to delay releases until mid-June; option two would be to release according to normal schedule. If the spill occurs substantially, they may not release R3 and instead use those fish to test capture efficiency.

NMFS noted that they are interested in limiting or eliminating the euthanization of the sampled fish if possible. Whether fish are euthanized depends on their size and how much tissue is needed for the sample. Fred thought that fin clips were doable without euthanization, on fry of 35-45 millimeters, which is the expected size of these fish.

The RM&E team indicated their support for the current approach to this study and requested that euthanization be minimized where possible.

High-head bypass study: Fenton reported on the history behind this study. He acknowledged that the current (2017) study wasn't vetted through the RM&E process; however, the intention is to have studies vetted in the future. The study, conducted at Green Peter juvenile fish bypass, was originally vetted with the RM&E team in 2014 and has been ongoing since then. At the request of the Cougar downstream passage PDT, the High Head Bypass PDT added a task in 2017 to evaluate the Cougar RO as a viable route for volitional downstream passage. The 2017 study will include testing fish passage and survival at the two deepest bypass pipes at Green Peter Dam and a section of the Cougar RO, downstream of the headgates.

USGS temperature evaluations in mainstem and at FOS: Rich presented on this study which will evaluate pulse flow, trace water from Green Peter to the South Santiam, and describe forebay conditions which will inform ladder modifications. The ladder study was ranked at the RM&E Team, however, the mainstem study aspect came out of SWIFT, the mainstem flow study group. RM&E members are reviewing and commenting on the study. NPCC, NMFS, and the Corps indicated support for the study. Other agencies needed more time to review and were asked to indicate whether they support/don't support in their comments to the proposal, which are due on April 28th.

Corps' Outmigration studies at FCR and HCR dams using screwtraps: Greg presented on this proposal, noting that screwtrap placement at FCR and HCR was not ranked by the RM&E Team, however, other areas were. Greg explained that this study would use O&M funds, which in the past Greg has had discretion over. In the future, Greg's agreed to include these efforts as part of the RM&E vetting and ranking process.

The group pointed out that this is in part a policy issue, regarding the color of money and the tight O&M funding situation. Previously, the RM&E Team was told that they would need to get O&M funds to operate screwtraps, and that there were not funds available unless they were pulled from somewhere else. In this case, there are higher priorities for screwtrapping, including above Detroit and Cougar, however, the O&M funds are being directed towards unranked, lower priority areas. Greg explained that at this point, the funds cannot be shifted to a different location and the data from FCR would be valuable.

RM&E team members were polled as to whether they would support this study: NPCC, USFWS, Grand Ronde, and the Corps supported gathering information at FCR. NMFS needed to discuss the issue internally to determine whether the issue would be elevated to the Steering Team as a policy issue relating to the use of O&M funding for sites that were not ranked and are linked to the BiOp. ODFW did not support studying HCR; and although could see value in data from FCR, was concerned that FCR was not considered simultaneously with other sites for prioritization and that higher priority spots were discarded.

Hatchery M&E: Rich indicated that the Corps is switching funding mechanisms and will be establishing a contract for Hatchery M&E. The Corps is seeking input on the objectives for monitoring and evaluation at the hatchery, which will in turn inform the contract. Team members requested that it would be helpful, in determining priorities, if the Corps could indicate whether several priorities could be done in a single survey. Cam offered to provide any details of the current M&E operations if desired. Comments are due into the Corps (Andy Traylor) by May 4th.

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