Willamette Action Team for Ecosystem Restoration (WATER)
Research, Monitoring and Evaluation (RM&E)
November 20, 2017 Meeting

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

FINAL Facilitator's Summary

ACTION	BY WHOM?	BY WHEN?
Send a Doodle poll for to schedule the January RM&E Team meeting.	Emily	ASAP
Check with James regarding the sample size needed for telemetry study; check with the surrogate program regarding the timeframe for production logistics.	Rich	ASAP
Send comments regarding the LOP HOR workshop notes.	RM&E Team	ASAP
Send team USGS Downstream passage report	Rich	ASAP
Provide edits to the 10/4/17 and 10/26/17 meeting summaries.	RM&E Team	10/29/17
Send group NMFS' written response regarding the use of summer steelhead for telemetry study.	Stephanie	11/22/17
Discuss the concept clarifications with your respective agencies' Steering Team representatives (brief ST for 12/5 meeting).	RM&E Team	12/5/17
Present on the concepts at the 12/5/17 Steering Team meeting.	Rich, Fenton, Tom, Stephanie, Diana, Mike	12/5/17
Update the Steering Team regarding LOP HOR discussion.	RM&E Team	12/5/17
Provide comments on the Pre-Spawn Mortality proposal.	RM&E Team	12/7/17
Notify Elise Kelley of the RM&E team meeting schedule.	Tom	Before January RM&E Team meeting
Provide an update on the timeline for the sub-basin development plan process.	Rich, Scott, Fenton, Jonathan	January RM&E Team meeting
Confirm whether agency supports the hatchery surrogate approach for the MF HOR survival study.	RM&E Team	January RM&E Team meeting
Check with the hatchery regarding capacity and cost of surrogates for HOR survival study.	Rich	January RM&E Team meeting
Review the Middle Fork Plan and USGS Downstream passage report and be prepared to create a table that identifies all the information that will be provided and complete by FY19 and what studies will be outstanding.	RM&E Team	January RM&E Team meeting

Participants in the room: Leslie Bach (NPCC), Stephanie Burchfield (NMFS), Diana Dishman (NMFS), Scott Fielding (USACE), Mike Hudson (USFWS), Rich Piaskowski (USACE), Ricardo Walker (USACE);

Participants on the phone: Fenton Kahn (USACE), Christine Peterson (BPA); Cameron Sharpe (ODFW), Tom Friesen (ODFW), James Peterson (OSU);

Facilitation Team: Emily Stranz and Nancy Pionk (DS Consulting).

Welcome and Updates

Meeting Summaries: Emily welcomed the group and conducted a round of introductions. The group deferred the approval of the 10/4/17 and 10/26/17 meeting summaries so that team members could provide additional comments. Emily will re-distribute the summaries for approval after comments are received.

→ **Action:** Team members will provide edits to the 10/4/17 and 10/26/17 meeting summaries by 10/29/17.

10% Sub-basin Plans: Emily checked in with the team regarding comments on the 10% drafts of Sub-basin RM&E Plans. NMFS provided written comments; others were okay with the 10% drafts as is. The Corps' sub-basin planning team will report back on the timeline for the next draft at the January RM&E team meaning.

→ **Action:** The Corps' sub-basin planning team will report back on timeline for next stage of drafts at the January 2018 meeting.

NMFS & ODFW Conversation on Summer Steelhead Surrogates: Stephanie provided an update from NMFS and ODFW regarding the potential use of summer steelhead for a telemetry study in 2018. NMFS and ODFW discussed and are willing to agree to the use of summer steelhead provided that PNNL clips fins, takes tissue clips of all study fish and conducts an end of season genetic analysis on the summer steelhead that do not pass the project. They would like to see the sample group kept as small as possible, and asked that PNNL calculate how large the test group needs to be to get to 80% statistical power with 5% precision. If PNNL's calculations require a huge sample, they would like to discuss whether a lower level of precision would be feasible.

Stephanie indicated that NMFS and ODFW did not see a need to release summer steelhead in fall, as there are very few winter steelhead to compare them to and the younger steelhead would be more likely to residualize. For summer steelhead released in spring 2018, results will need to be reviewed and discussed before a decision is made on use of summer steelhead for 2019. NMFS and ODFW would like to see that at least 80% of the summer steelhead are passing and not residualizing. Rich noted that he can add an objective to the study regarding introgression with winter steelhead and the risk of introgression in the future. He suggested that the region needs baseline data on genetics in the basin and that University of Idaho may have this. Tom noted that ODFW has published work on genetics and may have more rounds of sampling coming in the near future.

→ **Action:** Stephanie will send NMFS' written response to the group. Rich will check with James at PNNL regarding the sample size of summer steelhead surrogates needed to compare summer and winter steelhead surrogate passage behavior in 2018. Rich will check with the surrogate program regarding the timeframe for requesting and securing summer steelhead test fish from them and will coordinate logistics as needed before the January RM&E team meeting.

Bennett/Leaburg Fish Counts: Tom noted that the upper and lower Bennett and Leaburg fish counts are currently planned to end this year due to lack of funding. However, ODFW and the Corps are working on a sub-contracting process to see if they can keep Upper and Lower Bennett counts up to support 2018 temperature study needs. Rich mentioned that they are also exploring options to fund below dam spawning surveys in the North Santiam through O&M, however, O&M funding is uncertain.

December RM&E Meeting Reschedule: The group also discussed changing the December 28, 2017 RM&E Team meeting to January. Emily will send a Doodle poll for a January meeting and will schedule a conference call if needed between meetings.

→ **Action**: Emily will send a Doodle poll for to schedule the January RM&E Team meeting. Tom will notify Elise Kelley of the meeting schedule.

Presentation & Questions on Middle Fork Chinook Pre-Spawn Mortality Proposal

Jim Peterson and Cameron Sharpe presented a proposal to study the Dexter trap and factors that may affect pre-spawn mortality (PSM). This research seeks to determine whether a trap and haul program, with acceptable levels of PSM, is feasible. Jim noted that the study is dependent on the recovery of female carcasses as the study

will examine the eggs remaining in the carcasses. He presented conceptual models on adult route, transport and outplant survival. This study will require at least 1,200 fish, as fewer fish would require a greater detection probability. The fish will be randomly selected and not separated for brood first. The proposal does not include a controlled test at the Fall Creek facility.

Jim discussed the candidate factors for evaluation and noted that the researchers and hatchery consider fish sedation and handling events to be the most important factors influencing pre-spawn mortality. Cameron explained that CO_2 is used to sedate summer steelhead because Aqui-S is not approved for immediate release of fish into an active fishery, and that summer steelhead would have to be held for 3 days before release below Dexter if Aqui-S were used.

[Facilitator's Note: At the 1-4-18 RM&E Meeting, the Corps and NMFS clarified that do not see sedation as an important factor to evaluate. It is assumed once passage improvements are made, only Aqui-S would be used on fish transported above dams.]

Jim noted that early morning transport of a short distance at the North Fork of the Middle Fork was associated with lower PSM while the longer distance of travel to above Hills Creek was associated with higher PSM. There is higher PSM below Dexter and group members suggested that the trap open earlier in the year with continuous or more frequent operation so that fish arriving early are less susceptible to PSM.

Jim explained that fish sedation and handling events involve crowding of fish until there are sufficient numbers of fish. A single loading event might have 200 fish in contrast to multiple short events which might include 800 fish across 4 different crowding events. This study would focus on the stress of crowding and whether fish loaded later have higher PSM. Stephanie noted that the current facility, which is not designed to present-day fish handling, sampling, and transporting standards, interferes with the study design because researchers will be evaluating a system that we already know doesn't work well.

To determine pathogen transmission during transport, they will sample the water for pathogens pre-transport and post-transport and do an eDNA analysis. The pre-transport testing is done to set a baseline to determine if fish are shedding pathogens. If there is a significant increase in pathogens, there is an assumption that there is shedding and potential for infection. The assumption is that keeping fish together at high densities increases shedding, spread of disease, and affects PSM.

It was suggested that the number of factors and replicates focused on could be reduced depending on the number of fish available. If 1,500-3,000 fish were available, three factors could be prioritized. If there are more than 3,000 fish, the full study design could be implemented.

→ **Action:** Cam will send the existing study on transport. Team members are requested to provide written comments on the proposal by December 7, 2017. Rich will provide the group's comments to Jim and Cameron.

FY18 Concept Presentations to Steering Team

Emily explained that the Steering Team wants to clarify the funding rationale for a number of concepts and would like more information in order to do so. Originally, they ST had requested that the Corps seek proposals on the concepts in order to shed light on the nuances of the studies. Due to the amount of work that researchers must do to create a proposal, the Corps did not want to ask for proposals unless the concepts were moving forward to be funded. Thus an alternate route to get the information would be for the RM&E Team to provide short (5minute) presentations on the concepts at the December 5th Steering Team meeting. Following the presentations, the Corps will clarify the funding rationale for each concept.

The team discussed the information needs of the Steering Team. Mike noted that the Steering Team is seeking to clarify what makes similar studies different in terms of funding, i.e. what makes one study fundable and another not fundable, when both studies have similar objectives?

For the purposes of group clarity, Rich explained the general parameters for CRFM funding and noted that Ian Chane would address any further refinement and determination of these parameters. CRFM generally funds fish passage studies of anadromous fish and in-stream flow management in the Willamette Basin related to fish passage; above dam studies relating to fish passage are covered as well as pre-construction and post-construction evaluation of a structure.

Study objectives that are not funded under CRFM include studies relating to habitat restoration, improvement and management and below dam hatchery effects.

The group reviewed the concepts in question and clarified what should be highlighted in the presentations to the Steering Team. They agreed that the presentation should include: the context for decision or action (under the RPA), the purpose of the study, and information generated from the study. The group also designated the team members who will present on the concept at the Steering Team meeting. A summary of the group's discussion regarding the studies is provided in a separate document entitled *FY18 Concept Clarification for 12-5-17 Steering Team Meeting*

→ **Action:** Team members will discuss the concept clarifications with their respective agencies' Steering Team representatives. Designated representatives will present on the concepts at the Steering Team meeting.

LOP HOR Workshop Take-Aways and Group Recommendations

The group discussed the LOP Head of Reservoir (HOR) Workshop and were reminded to send in comments on the workshop summary.

→ **Action**: Team members will send in comments regarding the LOP HOR workshop notes;

The group discussed following table which lists critical uncertainties and proposed strategies that were identified during the workshop.

	Critical Uncertainty	Proposed Strategy
1	Egg-to-fry survival rate	Use literature values and conduct life cycle modeling to determine sensitivity of the parameter in achieving objectives
2	Effects of debris handling on fry at the in-tributary (Westfir) collector.	Handle in design phase if this facility is selected for implementation
3	Fry/juvenile survival and behavior in reservoir	Study started in 2017
4	Fry-to-adult survival rate	Conduct survival study using hatchery origin fry released below Dexter Dam and to the Lookout Point Reservoir. Test small portable collector to determine if naturally produced fry can be collected in large enough numbers to conduct study.
5	Prototype testing of in-reservoir FSC nets or inflow	Low priority- Do not investigate until collector sites located at the dam or at Westfir have been eliminated
6	Prototype testing of portable trap (e.g. Merwin Trap)	Test a portable trap at the head of reservoir to determine system effectiveness. Long term this type of facility may provide improved life history diversity.

Group discussion regarding critical uncertainties and proposed strategies:

1. Egg-fry-survival rate: Rich plans to talk to Dan Spear (BPA) regarding doing a BPA-funded workshop on this critical uncertainty.

2. Effects of debris handling on fry at the in-tributary (Westfir) collector: The proposed strategy would not be a study and would be considered during the design for the project, if pursued.

3. Fry/juvenile survival and behavior in reservoir: This is the 2017 reservoir study that Toby is conducting.

4. Fry-to-adult survival rate: The group discussed the study design for this proposed strategy. Fish would be placed above reservoir to pass through the existing system. Tom indicated that it would take 100's of thousands of fish to do this study and he was unsure whether there was capacity to raise that many fish. Additionally, it was noted that the length of time needed for the study is concerning, as they would have to wait to get results from adult returns.

Stephanie noted that they would prefer to use NORs, however, they cannot capture them and there are not sufficient numbers. Team members raised concerns that the study would not really test what naturally-producing fish will do and noted that hatchery fish behavior is different from naturally-producing fish below dam.

This study would require a 2019 start, with fish production starting in 2018. The decision of whether to go ahead with this study needs to be made no later than January 2018. The hatchery will also need to be consulted to determine if it has the capacity to raise the amount of fish required and the cost of doing so.

→ **Action**: The RM&E Team will revisit this study at their January meeting; they will come to the January meeting prepared to share whether or not their agency supports a hatchery based surrogate study of SARs. Rich will check with the hatchery regarding capacity and cost.

5. Prototype testing of in-reservoir FSC nets or inflow: This was identified as a low priority at the workshop and it was suggested that #6 be pursued in lieu of #5.

6. Prototype testing of portable trap (Merwin Trap): NMFS stated that this could provide some helpful information. Others suggested that the timing of this study was not critical and that the survival study results could help determine whether to focus on this testing.

→ **Action**: Team members will update the Steering Team as follows: they are reviewing study ideas for LOP HOR and will be discussing again in January, 2018. There are no HOR studies currently proposed for FY18, although preparation of hatchery fish would need to start in early 2018 for an FY19 surrogate approach to the SARs study, if supported.

Middle Fork RM&E Plan Updates?
It was suggested that the team create a table that identifies all the information that will be provided and complete in time for the 2019 check-in, as well as what studies will be outstanding.

→ **Action:** In preparation for creating the table at the January meeting, team members will review Middle Fork Sub-basin Plan and USGS Downstream passage report that Rich will send out.
→ **Action:** The team will come prepared to create a table to identify this information at the January RM&E team meeting.
→ **Action**: Fenton will provide an update on the HOR collector that's been designed for testing in northern California at the January meeting.

Emily thanked the group and adjourned the meeting.

The next RM&E team meeting is scheduled for January, date TBD.

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