

**Northwest Power and Conservation Council -- Fish Tagging Forum Meeting
July 25, 2012 – Portland, OR
Draft Meeting Notes**

Attendees: See Meeting Roster on FTF Web Page ([Attendees](#))

Agenda: see agenda posted on the FTF Webpage ([agenda](#))

Introductions/Meeting Objectives/Recap of Last Meeting

- Kevin Kytola (KK) lead the introductions, went over the agenda for the current meeting.

Report from Management Question Subcommittee

- Pat Frazer summarized the progress to date by the subcommittee, describing how it has evolved over time to address its task. The subcommittee has finished revising the management questions and sub-indicators. The subcommittee began linking indicators to forums using two types of linkages:
 - Direct Responsibility (DR) = direct responsibility for collecting, summarizing, analyzing, decision making, policy-making and/or funding.
 - Interest (I) = interest in using the data and/or analysis.
 - Also discussed color key to various agencies' responses in table

The subcommittee feels it has gone as far as they can in accomplishing their task and believe that the whole group needs to engage to complete the task of linking indicators to forums and tag types to get representative input from full group.

Group Discussion

- Kevin Kytola.: does assigning Interest and Direct Responsibility inform the fair share discussion?
 - The group discussed the value of using two types of linkages and whether these two are the correct ones to assist the Fish Tagging Forum in its future work, such as in the upcoming discussion about cost-effectiveness.
- Booth: would you clarify the term Direct Responsibility
 - There appears to be two levels associated with Direct Responsibility, one is inescapable of direct responsibility and the other is policy framework that drives these needs.

- It may be useful for the FTF to focus on the linkages related to the Direct Responsibility and eliminate the Interest link as the Interest link may not be as informative for our purposes.
- Direct Responsibility linkages can also be difficult to identify given that some tags are reused, and the original purpose may not be related to a direct responsibility. For example, some tags informing harvest are all reused tags that are originally used by the ACOE for hydrosystem studies. Thus these ACOE tags are not used to address a Direct Responsibility for harvest studies although these ACOE tags are needed for hydrosystem studies.
- Kevin: maybe too many things included under the term ‘forum,’ so we may need to separate out the various categories, such as the legal drivers and documents versus who funds a project versus who implements a project?
- Kevin wrote up 4 questions which may facilitate differentiating between Direct Responsibilities and Interest:
 - Direct Responsibility: (1) who/what requires it (2) who funds it, a focus on BPA funds (3) who implements it?
 - Interest: (4) who else uses the data and what is it used for?

Next Steps:

- Pat will incorporate the comments from CRITFC received via email earlier but have not yet been incorporated into the table (FTF subcommittee management questions [spreadsheet](#)).
- Pat will remove the ‘red N’ in the tables as these are used to indicate ‘blank/no answer provided.’
- Pat will lead the subcommittee in one more meeting to address:
 - 1) clearly define what driver is required for each of the questions/indicators
 - 2) who funds it
 - 3) who implements it
 - 4) who else uses the data and for what purpose
 - 5) which tag(s) is used (can use the PowerPoints and the tag use excel sheet ‘[Evaluation Framework and Measurement Table](#)’ on the FTF web Page website started earlier for this task)
 - 6) can we rank/prioritize the questions and indicators to get any discrimination of significance, i.e., is the tagging data being collected vital or simply “nice to know?”
 - For the tag ID column - attempt to capture how well the tag type addresses an indicator/mgmt question (full, partial etc); perhaps cost of that tag to answer an indicator/question; perhaps use number and color to grade how well used and how well answers the question.

- The FTF group will invite more BPA policy staff to participate on the subcommittee as well as ACOE participation to replace David Clugston.

Overview of the Research and Monitoring Actions NMFS has Authorized in the Columbia River Basin—with an Emphasis on the Tagging Components of those Actions

- See [NOAA presentation](#)

Group Discussion

- Discussion about the take numbers
 - Gary Rule: Summarized the ESA process for application of permit types related to tagging endangered and threatened species, and the approximate number of permits resulting in tagging of fish in Columbia River Basin. Gary stated that mortality is generally 20% less than approved by the take permits.
 - Pete Hassemer: explained, that although the 'take' and 'take % of abundance' may seem high, this is a result of having to forecast these numbers for 5 years in advance using the high runs scenario to guide this number. But the actual take may be less than the approved amount.
 - Doug Marsh: it is difficult to modify your take permit if you run up against your limit that we tend to overestimate take so as to not have to deal with modification request
 - Robert Clapp: we have a buffer calculated in the take number so folks can keep doing their work. But the cumulative effect is significant.
 - Ritchie Graves: there is a constant give and take with the researchers about the level of confidence we want to address a question and how much take /tagging we want to have occur. We may need more tags/take to attain the desired accuracy, which may not be allowable for the population of interest.
 - Gary Rule: a researcher should come to us sooner rather than later as it is best so have time to review a request before providing the permit. Researchers shouldn't view the NMFS permit process as a last step when designing the research study.
 - NOAA only looks at the section 4d and 10 take effects; we don't look into other effects related to hatchery, harvest or habitat. But we need to do so, since under ESA we must assess all interrelated needs and effects. This is improving with HGMPs and the dam studies.
- Robert Clapp – shared a handout ([NOAA handout on tagging mortality](#)) that is scanned and available on the website along with the NMFS PowerPoint. The handout summarizes the mortality estimated with tag use. Based on the literature (see handout with references), immediate tag mortality may range from 3% to about 33%, so perhaps the assigned mortality of rates of 1% to 3% currently used by the division that authorizes/permit

research under ESA section 4d and 10 may not be accurate. This is a concern but we're not sure at this time what the true handling/tagging mortality rate should be. NMFS is currently under lots of scrutiny about mortality related to research permits. We need to seriously start minimizing tag usage and coordinating its use. We need a better balance of tagging rate and mortality rates, because we know the tag mortality effects and research-related mortality (from electro-fishing, etc.) adds up. Researchers/managers are coordinating better than 5-years ago, in terms of tag use, but more can be done to decrease number of tags used.

- Jim Ruff: how about supporting installation of more efficient detectors to improve the tag detection rate instead of tagging more fish? We also need better handling and tagging protocols.
 - Robert Clapp: good point yes, that would help.
- Robert Clapp: it would be important for the region to develop standardized guidance or protocols for all handling and tagging activities. Would be good to have funders require adherence to these protocols or guidance.
 - Dave Marvin: what are the standardization needs needed for your (NOAA- Clapp) use?
 - Robert Clapp: protocol should be driven based on lower effect on the species and we aren't sure about the effect. So start out small, e.g. CWT perhaps standardized protocol identifies when and how.
 - Ritchie Graves – I'm thinking of something like the new ACOE JSAT protocols to minimize effect of the tag on fish and maximizing the value of the fish.
 - Dave Marvin – do you see incorporating standardized protocol use as part of the permit? Robert Clapp, yes we already do that for other take activities such as electro-fishing.
- Tony Grover: we suggest unless very vital we don't need such high confidence intervals. So why not consider lowering the level of confidence required for some of the research projects? Wouldn't that help reduce the number of fish tagged and hence the amount of take?
 - Doug Marsh: caution given that some studies need 95% confidence interval and the confidence level may be wider depending on other reasons.
 - Tony Grover: and that is a discussion the region needs to have for the various management questions out there.
 - Robert Clapp: in the case of floodplain reconnection we may not need to tag all fish, it might be good enough to know the habitat is connected.
 - Ritchie Graves – guidance documents are useful, but sometimes need to balance the guidance with desirable level of impact, such as the Crawford-Rumsey Guidance document.
 - Pete Hassemer: Yes, in some cases we can relax the study confidence level and accuracy. But then you need to be more conservative at the other end, to take into consideration the higher level of uncertainty in results.

- Ritchie Graves: take home message is we have some concern about cumulative level of take related to RME actions. We are starting to have studies that compare tag effect, and whether we are measuring what we think we are measuring (tag mortality or tag loss).
 - Robert Clapp: having a better understanding of tag effect would help us in the permit process.
- Doug Marsh – I think good level of coordination is occurring among researchers, but may be lacking at higher level such as between the funding agencies.
 - Ritchie Graves – we look for improvements and tag coordination and when we don't see it we contact the folks to suggest they coordinate.

Long Term PIT Tag Loss and Effects on Smolt-to-Adult Recruit Survival of Cle Elum Hatchery Spring Chinook Salmon

- See PowerPoint posted on the website ([Curt Knudsen presentation](#))
- Curt Knudsen summarized the PIT tag research he conducted with co-authors on this topic as well as providing an overview on this topic from the literature. Study assesses 1.9% PIT Tag losses and 3.7% of CWT losses for juvenile fish; adult fish PIT tag loss was 18.4%, with 6.7% loss for CWTs. PIT tag recovery efficiency estimates ranged from 91.7 % to 100 % for 2002 to 2010 data. Curt also stated that most PIT tag loss occurred within the first six months after juvenile fish were released. Long-term PIT tag loss and its effects can be significant and should be evaluated under real-world conditions.

Group Discussion

- Doug Marsh voiced some concern about the study design used in this study related to years missed with the older PIT Tag from about 1999 to 2003 since they returned prior to the study's first recovery year. Ongoing discussion about study design.
 - Kevin Kytola: suggested this technical discussion about study design concerns may be more detailed for the FTF discussion. The FTF is interested in tag effects of the various tagging technologies. The Knudsen study provides a data point for PIT tag effects.
- Kevin Kytola asked the group if there are there other data points / documents we might want to include in our consideration of effects by PIT tag , and other tag technology types?
 - Robert Clapp: perhaps NMFS could data mine existing tagging projects for more info on tag effects like tagged hatchery fish
 - Lee Blankenship: largest study done on hatchery fish in Columbia River on juvenile to adult returns. Couple other studies on mortality that I have also published that identify variables such as closeness to salt water, trap effect scale

loss, and a third. Main thing is smoltification in relation to when captured. Some other studies by Canadians on this topic.

- Dave Fast - Study being done, size related bias with CWT. We are seeing 30% age 4 fish with CWT loss. Would be nice to know detection efficiency bias based on size? Our theory is as the fish gets bigger its harder to detect CWT.
- Lee Blankenship: documentation that shows that using a wand on the spawning ground you will be missing CWT fish, especially if you are not wanding in the mouth as well as on the snout.
- Dave Fast - my understanding in Alaska is that they are doing wanding, using new wands, in fish mouth etc., but they are still missing CWTs.
- Lee Blankenship, they don't have latest wands, however, since they were only shipped out recently.

Next Steps:

Kevin K: call back topic – perhaps consider following up on CWTs to obtain a better understanding of their detection efficiency?

Review of FTF Scope and Future Plans

- Kevin Kytola walked the group through the group's original objectives and scope of effort for FTF from November 2011, including the general process steps with a focus on the collaboratively developed work products.

Group Discussion:

- Tony Grover: asked if it is time to start developing a strawdog proposal(s) for an evaluation framework(s) for the group's consideration?
 - Randy Fisher: What happens if each of the tagging technologies has a need and a purpose – where do we go from there?
 - Tony Grover: Then it will boil down to which management questions are most vital and which tag(s) can be used to address those questions.
 - Marianne McClure: We need to synthesize across tabs and indicators to show how the data is important to management decisions.
- Tony Grover: Also need to address the “fair share” funding issue. Also where do we think tagging technologies are heading in the next 10-15 years?
 - Randy Fisher: This group should think outside the box and make some forward-looking recommendations, not just the status quo.

- Guy Norman: Need to categorize the management questions into those which are vital and those which are non-vital. Focus should be on what the vital questions are and what is a “fair share?” Then we’ll need to decide what to do with the non-vital management questions and/or issues?
 - Pete Hassemer: There is a difference between technical and management/policy issues.
- Doug Marsh: What control does the Council have over the ACOE and BPA regarding tagging recommendations?
 - Tony Grover: BPA tries to follow the Council’s Program or recommendations The Corps will also listen to what the Council recommends. This group’s tagging recommendations could end up being submitted and recommended in the Council’s next F&WL Program amendment process.
- Bill Booth: During the Council’s Categorical Review of RME, we found out about half the F&WL Program funding is being spent on RM&E. Is that the right amount, too much or not enough? In the process, Council identified five areas that needed more scrutiny and work, one of which was all the fish tagging projects. The FTF has an opportunity to find some cost savings, or efficiencies, and improve coordination among tagging projects. For example, is the CWT information vital to the region and is it being used in making important management decisions in the Columbia River Basin? The utilities and ratepayers want to know.
 - Pete Hassemer: I’m confident our approach will find some efficiencies. We should look hard at the multi-dimensional aspect of the management question spreadsheet.
- Therese Hampton: How can we fit the “fair share” issue into the decision framework?
 - Randy Fisher: I think we can lay out the value and uses of the CWT Program. What is the fair share? We should ask BPA because the states are contributing more funding than BPA, and then start negotiating.
 - Therese Hampton: From a customer perspective, there isn’t a fixed “fair share” percentage, but customers think much of the CWT Program shouldn’t be part of the F&WL Program. How is the CWT information being used?
 - Pete Hassemer: We need to have BPA here at table when we discuss this issue.
 - Tony Grover: Plus we’ll have a new Bonneville Administrator when we get around to making our recommendations.
- Evaluation/Recommendation Thoughts Captured from Discussion:
 - Technical vs. Policy considerations/recommendations
 - What are the vital questions?
 - Are we doing enough
 - Are we using the right technology
 - Fair share
 - What do we do with less vital questions/indicators?
 - Lessen confidence interval expectations?
 - Cumulative tag effects?

- Fair share
- Future recommendations for council - e.g., infrastructure investments
- Cost for a "study" and how many management questions it helps answer (bang for buck)
 - Maybe costs are best explored where there are true trade-offs/alternatives
 - Identify degree to which a tag/study contributes to
 - multiple management question
 - A portion of a management questions
 - Or secondary confirmation of a primary study
 - Describe infrastructure necessary to support each (or multiple) tag types
- Meeting topic for how we deal with cost information as a precursor to compiling the info.
- Kevin Kytola: Do we need to re-calibrate on the scope of our evaluation?
 - Species scope: For example, identify for each tag type the species that are tagged, then order the list based on the number of fish tagged. Species included in FTF evaluation are spring/summer Chinook, sockeye, fall Chinook, steelhead, sturgeon, coho and lamprey.
 - Geographic scope: it should include all those areas where the fish are tagged, released and recovered.
 - Tag technology scope: should separate genetic markers into GSI and PBT. Tagging types included are CWTs, PIT, acoustic, genetic markers and otoliths. Pete Hassemer suggested reviewing the ISAB's tagging report to see if there would be added value to having a presentation on another tag type.
 - Cost of Individual Tagging Technology: Should we compare costs per tag technology? (Randy Fisher) Kevin Kytola -- this is something we want to do, and we requested it from our presenters. However, we got the cost information in different formats so we need to figure out how to standardize cost to be able to compare across tagging technologies. For example, it may be best to assess cost for each technology to answer a given question. Bill Jaeger from IEAB suggested that economics, specifically an economic framework, can be a way to organize the information, and provide a matrix that allows for sensitivity analysis / trade off analysis of what happens if we do this versus something else. Therese Hampton suggested that costs are best explored when there is a true trade-off/alternative. (Guy Norman) also keep in mind how many questions are answered by a tag/study when discussing cost effectiveness. (Pat Frazier) might be good to describe the infrastructure necessary to support each or multiple tag types since there may be cost effectiveness related to infrastructure. May require discussing the topic of how to determine cost in a future meeting to ensure get this right.

Discuss Approach for Covering Remaining Tagging Technologies

- Otolith mark & microchemistry as well as clipping will be discussed at the next meeting.
- For other technologies, the group will look at the 2009 tagging report and determine if additional discussion in the FTF is warranted.

Discuss Information needs for Specific Tagging Technologies

- Kevin Kytola provided draft table that compiles the information obtained to date per tagging technology and charter objectives ([FTF Tag v Objectives](#)). This table can be used by the group to support a determination of whether or not there are information gaps that must be filled before the evaluation can be completed. They noted that tag loss, recovery rate, and future considerations are items in the table that were not captured for many of the tagging technologies in the presentations. The group also discussed that the identification of gaps may be further supported by beginning to develop the evaluation (e.g., strawdog) and see where additional information is necessary.

Next Steps:

Kevin Kytola will email the updated table to the full group so it can be reviewed and discussed at a future meeting.

Recap and Plan Next Meeting

FTF Path Forward:

August 27th – Management Questions Sub Committee meeting in Portland Oregon. 10am to 4pm. John Skidmore from BPA is a must-have for the Management Question subcommittee meeting.

August 29th – Full FTF meeting in Portland Oregon. 9am to 5pm. agenda items:

- Otolith mark and microchemistry (2hrs) Possible speakers could include:
 - WDFW Bryce or Todd
 - WDFW scale lab (Jeff Grimm , Lance Campbell)
 - Brian Kennedy (UI)
 - ODFW (OSU person)

- Invite all of them, but should select one or 2 as primary speakers. Pat Frazier will check on the availability of WDFW staffers and let us know. If they are not available, then use U of I.
- Fin clipping/ mass marking (2hrs)
 - Guy Norman, Tom Rien, Pete Hassemer can identify a speaker from the states, perhaps from Stan Allen from PSMFC to talk about the technology?
 - Guy Norman – management applications, e.g., spawning grounds, etc.
 - How is mass marking used in conjunction with other technologies?
- Cost evaluation framework (2hrs) – develop an approach to tackle this and then try filling it out with our information.

Potential future meetings and topics include:

- October. Management question spreadsheet update and finalization (see the 6 steps in the minutes) – get it done by full committee.
- November. Strawdog proposal discussion part 1 - focus on current state description (technical). Information gaps for “call back”.
- December. Straw dog discussion part 2