

Comments from Doug Marsh, Ann Setter, Charles Morrill, Sandy Downing Earl Prentice and Sean Casey incorporated January 30, 2004.

Meeting Date: January 14, 2004 12:30

Meeting Location: Skamania Lodge after 2004 PIT Tag Workshop

PTSC Meeting

- Attendees: Joe Z, Doug M. Carter Stein, Ann Setter, Ed Buettner, Charles Morrill
- Interested Parties: Earl Prentice NOAA, Sandy Downing NOAA, Scott Livingston, Sean Casey, Dennis Schwartz, Jessie Rivera, Jeff Johnson, Fred Mensik WDFW

Agenda and Discussion

- 1) Three Mile Dam
 - a) ODFW requesting comments on TMD PIT Installation.
 - b) ODFW wonders if PTAGIS funds could fund a portion of capital equipment and installation (transceivers, antennas)?
 - c) WDFW says this is outside scope of PTOC/PTAGIS responsibility.
 - d) Carter said that he has received a communication from Yakama Indian Nation on PTAGIS support for adult installation at Prosser adult ladder. In addition, COE has requested assistance planning adult installation at Sullivan Dam at Willamette Falls.
 - e) Carter mentioned that in lieu of decision from PTSC that he would program the PTAGIS budget with the assumption that the Three Mile Dam project support would be approved by the FPAC.
 - f) PTSC decided to wait for Three Mile decision by FPAC. ***FPAC has requested a letter from us stating that we see no technical problems with the proposal before they will approve. Ann is waiting for comments from committee and Tara, then will ask for such a letter.***
- 2) Charles reported that he had discussed incorporating PIT Tag maintenance issues at each project as part of the COE Fish Passage Plan with. Dave Wills and Dave was going to bring this up at next FPAC meeting.
- 3) Charles will be working with Dave M. on Definitions, Examples & List of Site types for Point Release Vs Fixed Release Sites and suggested changes. Proposal and background notes will be posted on web site for PTSC review.

- 4) Charlie will also propose language for maturity in context of RF, MT, KL, JA, MJ and other flags for PTSC review
- 5) Shall PTAGIS budget for installation of detectors on large fish return flumes at separators at Juvenile Fish Facilities?
 - a) Yes. No Objections from committee.
 - b) Subsequent to the meeting, WDFW agrees if there is approval from FPAC.
- 6) Issue of Use of Non-interfering Alternate PIT Tags (e.g., FDX-A) Tags in System
 - a) The concept is to use multiple tag **technologies** so the possibility of ‘tag collisions’ between salmon and lamprey are minimized E.g., use FDX-A tags in lamprey and FDX-B in salmon. (Reference Mary Moser from PTSC August 2003 meeting).
 - b) The PIT tag Steering Committee endorses the concept that, if technologically feasible and not cost prohibitive, the ability to read FDX-A tag in addition to FDX-B tag be available for detection with main-stem readers. This will allow for the tagging of some non-salmonid species that may reside within main-stem antennas for long periods of time without impact on existing FDX-B detection.
 - c) Sean reported that there are technical issues related to making the existing adult system work with both FDX-A and FDX-B. He has done some testing at the request of Dave Clugston of USACE. Sean suggests that DA perform some feasibility analysis. Sean also noted that window of opportunity to incorporate this into quantify FDXA performance on the Bonneville vertical slot antennas and the G2 reader is short, i.e., less than one month.
 - d) Sean described a slide in his presentation that outlines the issues.
 - e) COE will address letter to FPAC requesting feasibility study. PTSC will author a letter to FPAC outlining PTSC position and the technical issues.
- 7) Tag Type in Header
 - a) PTAGIS has a tag-type data item for tags distributed by PTAGIS. Tag Type should not be included in the TAGGING header.
 - b) PTSC wants to incorporate tag-type (from TDI) for use by system users.

- c) John Tenney says this could be done with a “simple” modification to the TDI system, and the data retrieval user interface. For consistency a ‘DISTRIBUTION’ file data format should be agreed to (E.g., more formalize the “Alternative Distribution” class of TDI).
- 8) The committee discussed incorporating HDX technology into the Basin system.
- a) Sean suggested that the technology is easily incorporated into our systems but will require some feasibility study followed by integration work.
 - b) The committee agreed to ‘leave the door open’, pending the start of a real application.
- 9) Scott Livingston shared data on tag collisions between the super tag and standard tag.
- a) The committee will review the information and consider it as it moves through a tag qualification protocol for introducing new tags into the basin.
- 10) Letter from FPAC to PTSC (dated xx/xx/xxxx) related to implementation of new tag technologies. FPAC requests that PTSC develop timeline, process and protocols for implementation of new technologies.
- a) The committee discussed a straw-man draft proposal authored by Joe Zydlewski: “The PIT Tag Steering Committee Tag Approval Process”
 - b) Discussions focused on various phases of research related to qualifying new encapsulation materials.
 - c) Existing plans for gaining detection at the corner collector flume at Bonneville, call for developing an ‘interim glass tag’, until a production version of the ‘mass model’ tag can be delivered. Probability of detection of the current TX1400ST (super tag) is extremely low.
 - d) Sean said that Digital Angel currently has no money for further tag development after September, 2004. Mass Model development to production efforts have been on hold until the BON High-Q system was given a ‘Go’. Now, it seems the High-Q system is a “Go”, so work can start on the proposal. Initial work would be to develop a new ferrite / antenna.
 - e) Sean will write up a proposal for new tag protocols to meet Hi-Q project needs. The proposal will reflect the work necessary to meet the PTSC approval process that is currently being developed. After PTSC review, the project specific proposal would be forwarded to FPAC with PTSC assessment and support

- f) Sean will put together a timeline/ tag development concept based upon the High-Q system schedule. The goal will be to identify the future tag development through the performance testing of the alternative tag options in 2005 (first year of the Bonn. Corner Collector operation).

- g) In summary, there is general consensus that the
 - i) Phase 2 could last a minimum of six months, preferably 6-12 months since some species smolt later.
 - ii) Pressure testing
 - iii) Internal inspection, tag movement and physiological evaluation
 - iv) Multiple species at different sites.
 - v) +/- 2% impact on parameters being measured.
 - vi) In phase 3 move ahead with tag retention, fish going volitionally to ocean, net pen designs want a
 - vii) Double tagging
 - viii) Formalize belt test
 - ix) Characterize by-code performance and by-catch
 - x) Communicate with community that changes will have impacts.
 - xi) Details of (10.g) above are in the Draft Tag Qualification Proposal currently being circulated for comments from PTSC members.

- h) Joe Z. will author letter in response to FPAC, and work with Sean on his timeline.

- i) The following comment from WDFW (Can someone supply context?)
 Three paths:
 Review "Process" straw-man, review FPAC reply and review Sean's plan. Sean noted that all tags provided to the community as of Aug '04 will be the new super tag. PTSC members noted that parr and juveniles tagged prior to Aug '04 would then be tagged with current 12 mm standard tag ...not the newer super tag ... this could lead to different detection probabilities for some groups of parr and juveniles tagged over the course of the summer

- j) WDFW says that effort should be made to ensure those groups tagging parr and juveniles expected to migrate beginning in fall '04 and spring '05 should be using super tags

- k) Earl Prentice suggests: *Phase I testing I believe temperature testing should also be included. Tags are stored in a number of condition and environments that subject them to a broad range of temperatures. The tags are constructed of a variety of material having differing expansion and contraction coefficients. Because of these factors the bonding of the component parts within the tag are subject to "movement" and thus potential breakage. To me this potential problem needs to be evaluated.*

My feeling is that the tag should be able to be read in present (exception B2CC) juvenile and adult interrogation systems at a 95% level (all antennas combined per location -e.g., 4 antennas). The diameter of the tag should be reduced so that it can be used in a needle that is at least one gauge size down from that presently used. The smaller the diameter the better as long as it can still be retained in the bore of a needle if that is what is used for tag insertion. Using a large needle with smaller fish is very difficult. In fact, we might need to go to the "Achord injector-the HAND". New methods of tag insertion may need to be developed as the tag is reduced in size. As fish size decreases handling them without injury or causing undo stress becomes a greater challenge. The tag length should be as short as possible and then even smaller (we are never satisfied!!). Sean, we need the sub 1 mm tag with performance of the MM tag (smart dust tag). I know, you can thank me later! Actually I do believe that reducing the tag diameter even on the present tag would be a big step forward. Note that we can not increase the weight of the tag in the process of reducing its dimensions. Tag weight reduction should be a factor in designing a smaller tag.

l) Sean asks, and requests if there is PTSC interest to discuss at next PTSC meeting:

1)What are performance requirements (i.e. perform similar to the old TX1400BE in the adult and juvenile systems).

2)From the biological standpoint, how much shorter does the tag need to be in order to be of benefit?

3) What is the benefit of making the tag diameter smaller versus the tag length?