**Notes: PIT tag workshop- open forum on tributary detection infrastructure, 28 January, 2015**

**Moderator: Chris Jordan**

**Panel members: Gabriel Brooks – NOAA/NWFSC, Rick Orme, Jason Vogel – Nez Perce Tribe**

**John Arterburn – Colville Tribes, Andrew Murdoch – WDFW, Derrek Faber – ODFW**

**Chris Beasley – QCI, Pat Connolly - USGS**

The initial purpose of the panel was to address the need for long-term planning regarding the maintenance, design, replacement and upgrading of the aging tributary detectors. Audience participation was encouraged.

Specific questions put to the panel & audience:

- Do we need to coordinate on the installation and maintenance of in-stream sites?
- Do we need to coordinate on locating new in-stream sites, or on replacing or relocating current in-stream sites as they wear out?
- Previously, a group met on the topic of in-stream site descriptions / metadata – is that work complete?
- What is limiting the most effective use of PIT tag data in the tributary environment – detection or analysis?

Questions and responses by panel (P) and audience (A) members are indicated under each broad topic heading.

**Detection Efficiency (DE) Estimates (much discussion dealt with this)-**

- A- Statisticians should consult with field study leads to formulate standard protocols for estimating DE.
- P- Could PTAGIS do internal calcs of DE? Still an outstanding metadata issue- how to document what effective DE is over variable timeframes. Two different but related issues; when was detector down, and what was DE when operating? Also, how much environmental/operations data are required to make the calcs, and who should do it; Project leader or PTAGIS system? The prior seemed preferable.
- P- What did the Metadata Workgroup from the 2011 workshop report in their synthesis paper? That is still in play and in need of being finalized.
- A- If your river has multiple detectors spanning a number of projects, it could be viewed as a system rather than a bunch of separate projects. This grid may have the capacity to estimate DE for members/sites upstream.
- P- Do not focus on daily DE, but calculate over broader timeframes.

- A- Would the use of the variable VTT help estimate DE? Certainly useful to document outages. But not clear how it could support DE when it varies by flow, etc.
- P- This could be useful for identifying outages.
- A- Estimating and reporting DE to PTAGIS would cause more work for biologists, could involve a complex procedure, and needs a solid protocol to avert confusion and errors. Reliable DE estimates have been difficult to obtain.
    - Start with an analytical framework as a foundation. Need to distinguish between outages and variable DE.
- P&A- DE can be sensitive to a whole variety of factors, including the siting of the detectors in the streambed. Yet another factor to consider that is difficult to analyze or model.
    - Site –specific DE provided by the project leader might be the most tractable to produce, but should that go into PTAGIS as a metadata parameter? So many caveats can be involved that may be difficult.
    - Do we have unrealistic expectations with regard to distilling an estimate that can be incorporated into PTAGIS? Perhaps it is advisable to have project annual reports document system operations and on-site estimates of DE.
- P- Terminology is confusing DE is used to apply to equipment on/off, variable collection efficiency and variable electronic sensitivity (tag distance from coil). How would the region use such estimates if they were available?

**The Path Forward-**

- P moderator asked- given that these and associated issues span the network of installations, should we be viewing this as a coordinated system or a patchwork of individual projects. This will affect near and long-term planning. Some of these matters appear in the draft Metadata report, which has not been finalized. How do we finalize that document and make recommendations?
- A- Assembling a workgroup panel once every few years (during this workshop) has not been a productive way to resolve the issues we have discussed. Perhaps convening a workgroup on a more regular basis could be more productive. We haven't even touched on a central concern- how do we deal with the repair or replacement of aging detectors? Are we going to be strategic at a system level, or piecemeal at the individual project level? The audience seemed to acknowledge that the Panel should meet regularly and be the nexus for planning and recommendations. And that that group finalize the report.
- A- Apart from the tributary discussion, there was a suggestion to monitor one mainstem dam year round to see what tagged fish we might be missing.

The general expectation from the meeting is that the tributary panel meet regularly to discuss, resolve and recommend actions related to the four questions that launched this panel session.