

2018 Annual PIT Tag Steering Committee Meeting Notes

February 8, 2018

Attendees: Jeff Fryer, Charles Morrill, Tiffani Marsh, Courtney Newlon, Brandon Chockley, Scott Putnam, Pat Keniry, Gordy Axel, Sharon Grant, Jamie Cleveland, Leah Sullivan, Ralph Lampman, Aaron Jackson, Bob Rose, Chris Beasley, Steve Anglea

PTAGIS: Craig White, John Tenney, Nicole Tancreto, Sebastian Dudek, Alan Brower, Jenn Lundy, Don Warf

2018 Action Items

- Don will send list to Ralph Lampman and Aaron Jackson of adult ladder sites where adults tagged with FDX PIT tags could seriously impact salmonid detections by getting behind or attaching antennas
- Ralph and Aaron will coordinate with other lamprey researchers and PTAGIS on any projects planning to release tagged adults below adult ladder interrogation sites
- Don and staff will prepare to enable dual-mode detection capabilities at McNary and keep it enabled at The Dalles for 2018. Dual mode may also be enabled at other sites for adult lamprey studies.
- John and staff will work on a conduit for submitting diagnostic and environmental data collected at instream interrogation sites to PTAGIS and make those data available to data users
- Nicole will get draft Spec Doc out to PTSC for review

Nicole will publish information about ending support for P3 in 2019 in a newsletter article, a news item on the PTAGIS website, on the P3 webpage and in an email to coordinators submitting P3 files

PTAGIS Portland Office Update

John Tenney presented a summary of Portland office 2017 activities and plans for 2018 ([Presentation Slides](#))

- Summary of files processed, reporting usage, and website activity all similar to previous years with a slight decrease

Database and Reporting Activities

- Reporting software and server upgraded
- Interrogation Data Loader (IDL) rebuilt
- Converted maps to use ESRI instead of Google
- Enhanced MRR validation
- Plans for 2018
 - Database server upgrade
 - Dimensional model
 - IDL enhancements

Web Server Activities

- Enhanced security with SSL

- Migrated to new server
- Updated document/video libraries
- Continued development on new website
- Plans for 2018
 - Launch new website
 - Interrogation Site Steward Portal

P4 Activities

- Released 5 updates including many enhancements and bug fixes
- More P4 files now being submitted than P3
- Plans for 2018
 - Retire processing of P3 files?
 - PTSC agrees that it is reasonable to discontinue processing of P3 files in 2019
 - PTSC suggests announcing it in the next newsletter, sending an email to those still submitting P3 files, putting an announcement on PTAGIS home page and P3 web page

Interrogation Data Activities

- Released PIFF 2
- Convened Instream Site Focus Group to discuss refinement of metadata for instream sites, including bringing in device diagnostics and environmental data
- Asked by instream site contributor to take data in directly from cell and satellite modem sites
- Plans for 2018
 - Enhance support for instream sites
 - Develop M5 or develop process to bring data in directly from cell/satellite modem sites (discussed later)

Field O&M Review

Don Warf presented a summary of Kennewick office 2017 activities and plans for 2018 ([Presentation Slides](#))

- SbyC gate efficiencies and antenna detection efficiencies remained high for 2017
- Tracks noise continuously at all sites
 - Tracking and mitigation consumes 10-30% of labor resources
 - Noise can come from something as innocuous as a cell phone charger or a new light
 - Requires multiple site visits, instruments and talking to personnel at sites
- Failed transceivers repaired in house
- Tag QA: 3% sample of all tags distributed for BPA FWP are tested
 - Improved tag testing and sorting devices are in development now
 - KARRT (developed last year) provides ½ scale BCC antenna used for BPA RFO tag testing
 - Allowed testing to be completed significantly faster than for last RFO in 2011
- John Day adult ladder is complete and will be wired up before end of February
- Lower Granite juvenile bypass full flow will come online this spring
 - Full flow pipe is HDPE, which expands with temperature increase – may impact full flow antenna efficiencies

- Worked with NOAA and Biomark on spillway detection project (see next topic for more details)
- Implemented new SCADA system that enhances real-time monitoring and adjusting of PLC and other devices, has significantly increased program's O&M capacity as new sites are added each year
- Worked with COE on several projects:
 - Assisted with design of Lamprey Passage System PIT tag detection
 - Submitted conceptual designs for adding antennas to Little Goose adult ladder
 - SOP on counting window picketed leads has been changed to keep detection efficiencies high at LMA, GOA, TD1 and TD2

Spillway PIT Tag Detection Development (Ogee project)

Gordon Axel presented a summary of work on the Spillway detection system in development for Lower Granite ([Presentation Slides](#))

- Under active spill, more juvenile fish pass via spillways than bypass facilities
- Probability of detection at least once in FCRPS has gone down
- A spillway detection system has been in development and will be installed at Lower Granite for testing
- Worked with Biomark/PTAGIS Kennewick on design and construction of antennas; cost is about 22k per antenna
- Design and testing of a split antenna to accommodate expansion joint in spillway
- Antennas have been tested in dry and wet conditions
- 11 antennas will be placed across the face of the RSW
- Anticipated read range is enough to get 1-3 detections per fish per antenna at 75 fps (using full telegram tag)
- US Army Corps of Engineers is handling contracting and project is out for bid

HDX/FDX Dual Mode Evaluation Results

John and Don briefed the PTSC about the results of testing dual mode detections at The Dalles Dam adult ladders. Biomark FS2020 transceivers can be run in dual detection mode, allowing them to detect both HDX and FDX PIT tags.

- Last year a study was run which involved releasing adult lamprey tagged with FDX PIT tags below Prosser Dam. Several of the tagged lamprey got behind one of the counting window antennas and completely shut down detections of PIT tags on that antenna. Ladder was dewatered and lamprey were removed, but PTAGIS staff was worried about this type of thing occurring elsewhere in the basin.
- As one possibility for exploring ways to prevent this, PTAGIS enabled dual-mode in the ladders at The Dalles and worked with NOAA statistician Ben Sandford to evaluate detection efficiency during the fall run. Both Ben's analysis and PTAGIS detection efficiency reports agreed that dual mode does not seem to affect detection efficiency.

- If dual mode is enabled, then lamprey could be tagged with HDX tags, and still get detections in adult ladders at main stem sites. Many instream sites also have capability for dual mode.

Aaron Jackson, Ralph Lampman, and Bob Rose, all involved in lamprey management and research in the basin, joined the PTSC for the discussion about whether dual mode should be enabled in adult ladder interrogation sites managed by PTAGIS and if it would be viable for lamprey PIT tag research to go back to using HDX tags.

- Lamprey research will ramp up over the next few years and PIT tags are starting to provide critical information
- Lamprey groups feel that FDX tags are critical to their research, but want to work with the PTSC, PTAGIS, and the Corps to find the best way to prevent what happened at Prosser from happening anywhere else
- Juvenile lamprey cannot be tagged with HDX because of the size of tags
- FDX tags also provide the possibility of detections in tributary instream sites without any changes to those sites
- Some ad hoc evidence that dual mode on IS1001 transceivers lowers detections of FDX tags
- Preventing access to areas where lamprey might attach around antennas could be a good way to prevent FDX tagged lamprey from shutting down antennas. Willing to work with the Corps process to get projects started at those locations where it is necessary
- PTAGIS will send a list of high priority sites: those where antennas are constructed like at Prosser and those where there are only two antennas for an entire ladder

Other suggestions by the PTSC and PTAGIS

- Add more detection points to those ladders where there are only 2 antennas
- Work with manufacturers to develop smaller HDX tags
- Coordinate on any studies that involve releasing large numbers of FDX-tagged adults below ladders
- For studies involving tagging adults, PTAGIS could enable dual-mode and researchers could then use HDX tags
- Ralph and Aaron will contact other lamprey researchers to determine if any studies are being planned involving release of tagged adults below or into ladders of concern.
- Other possible contacts are Steve Junky, Walla Walla District, and Cyndi Baker, Warm Springs Tribe (PTAGIS will contact to gather more info)
- John proposed leaving The Dalles in dual mode and enable it at McNary for all of 2018 season as a first step in evaluating HDX performance and tag collisions; will require lamprey researchers to submit mark data to PTAGIS so HDX tags can be identified

Enhanced Instream Site Support

John shared information about PTAGIS plans to enhance interrogation site metadata, primarily to increase support for instream (small scale) interrogation sites. While getting together a focus group to review metadata standards, PTAGIS was approached by an agency to request support for taking in data from low-power remote sites that communicate via cell or satellite modem.

- PTAGIS is planning to build an instream site management portal so that site stewards can better maintain the slowly changing metadata
- PTAGIS also would like to bring in automated device diagnostics, which can provide a lot of metadata to help data users determine if a site was operating or functioning properly during a specific time period
- PTAGIS was asked to also support direct data acquisition and loading from these sites
- Our main questions for the PTSC:
 - Should we bring in diagnostic data from instream sites and make these metadata available to data users?
 - Should we support direct data acquisition from sites with cell/sat modems

Chris Beasley and Steve Anglea joined the PTSC for this discussion, as Biomark is currently contracted to acquire data directly from some of these sites. Biomark then formats the detection data and submits it to PTAGIS for these sites. They also provide a portal for site stewards to view and manage diagnostics for their sites.

- Biomark provides O&M for about 50 sites, data management for ~100 sites
- Biomark holds a lot of environmental and diagnostics data, which should probably be in PTAGIS
- Diagnostics were not originally brought in to PTAGIS for instream sites because PTAGIS was built primarily for main stem sites. Users don't need to see diagnostics for those sites, because PTAGIS is watching them 24/7 and fixing issues as they come up
- Diagnostics (and environmental) data could be useful for data users, as they can provide information about site operations:
 - Noise reports
 - Power to site and antenna
 - Water depth
 - Test tag detections
- Biomark agrees that diagnostics and environmental data should be in PTAGIS and they are willing to submit that data along with detections
- BPA perspective: BPA wants all the data collected to be in PTAGIS, but they don't want to pay for two systems
- PTSC Question: is there an issue with taking business from a contractor?
- Only about half the active instream sites submitting detections to PTAGIS go through Biomark for data services
- Getting data directly from the sites is not a trivial task, should PTAGIS shuffle priorities (M5) to work on supporting that?
- PTSC supports getting all data into PTAGIS, but not comfortable with pushing M5 back to support direct data acquisition
- Interim step: PTAGIS will provide a conduit to bring in diagnostic and environmental metadata from Biomark and other instream sites, work on a replacement for Minimon that could be used at those sites running computers

Specification Document

Nicole presented the current rough draft of the new specification document

- Will be built in a help document style that provides online and printable materials from the same source
- The help document can be used for PTSC review and comment using the Send Comments link – reviewers can click the link and send an email to the rest of the PTSC with comments or suggested revisions.
- Nicole will aim to get a draft out to the committee for review this summer

Tag RFO Results

Sharon Grant presented the results of the recent BPA tag RFO

- Biomark tags were chosen for both 12mm and 9mm
- The new 12mm tag (APT12) has better read range than the SST-1
- The new 9mm is 5% better than the old 9mm
- The deciding factor was preloading of tags – only Biomark preloads tags into single use injectors
- New prices:
 - 12mm: \$1.63 per tag
 - 12mm preloaded: \$1.985
 - 9mm: \$1.50
 - 9mm preloaded: \$1.905S
- Contract is for 5 years, but price is only good for 3 years
- PTAGIS now stores and ships the preloaded tags
- PTAGIS will publish a newsletter article before next tag forecast with new tag information

Willamette Falls Interrogation O&M Support

- PTAGIS was approached by ODFW personnel to take over O&M of Willamette Falls adult ladder and Sullivan dam juvenile
- Site used to be maintained by Corps personnel, but funding was cut, ODFW personnel based out of Corvallis are managing the site now
- PTAGIS is willing to take over O&M but there are a few issues:
 - ODFW requires PSMFC to sign facility use agreement which PSMFC is not willing to do
 - Site access problems
 - Network connectivity issues
 - Equipment inventory – who does the equipment belong to?
- From ODFW perspective, it's very important
- Question for PTSC: should PTAGIS prioritize taking over O&M for these sites?
- Consensus that the issues are too much for PTAGIS to take on at this time, perhaps lamprey research at this location will provide an extra source of funding

MRR Data Enhancements

Capture Method Domain

- Some capture methods are not quite clear, for example LADDER is a capture method used at adults sites, but the fish are actually captured in some kind of adult trap, not picked up directly out of the ladder

- Nicole would like to work with PTSC on better definitions for all Validation Codes, perhaps through specification document review

Addition of BPA Fish and Wildlife Project number/info to tagging data

- Many tagging operations are done for multiple projects
- Would be difficult/impossible to tie one tag code to one project
- Tag distribution information can be used to see which project purchased a tag
- PTSC recommends against including this in MRR dataset

Addition of location of tag in fish (pelvic girdle, dorsal sinus)

- Suggested by BPA, not as endorsement of different tag locations, but to get more information
- PTSC says up front in Marking Manual that fish should only be tagged in the abdominal cavity
- PTSC recommends against including this in MRR dataset

Updated genetic information

- BPA asked if rearing information in MRR could somehow be automatically updated when genetic information revealed a different rear type for a fish
- Rearing info can already be updated by the original tag contributor
- Some sort of automatic process would lead to other researcher's data being updated without their knowledge
- PTAGIS policy is to only update tagging information by submitting a corrected version of the original tag file

Length

- Some researchers use total length instead of fork length, is there a way to indicate which value is in the MRR Length field?
- The definition for the field specifies that it should be fork length
- If researchers want to use Total Length, they should add a project-defined field

IDFG Personnel contacted Scott Putnam with these questions

- Is there a way to make it mandatory to specify ad clip or ad intact if the fish is marked as from hatchery origin?
 - P4 includes custom validation that allows these to be found before file is submitted
 - PTAGIS can look into adding it into real-time validation, but is it something everyone would want?
- Can we add contact information to MRR sites so that folks trying to contact data contributors can find them more easily?
 - Nicole will add a link to current MRR Site Metadata report that shows who has contributed data at each MRR site

Final Business

Charlie and Tiffani will remain co-chairs for 2018