

IPTDS Subcommittee Meeting

August 31, 2022 13:00 – 16:00 PDT

Attendees: Kyle Meyer (Biomark), Kory Kuhn (YN), Brian Knoth (IDFG, Gabe Brooks (NOAA), Zack Mays (YN), Brian Davis (USFWS), Derrek Faber (ODFW), Jeff Fryer (CRITFC), Ryan Gerstenberger (Warm Springs), Tom Desgroseillier (WDFW), Carley Simpson (ONA), Brady Allen (BPA), John Tenney, Sebastian Dudek, Darren Chase, Scott Livingston, Don Warf, Daniel Wilson

Action Items from this Meeting

- Brian Davis will complete SOP for Raspberry Pi setup and email to Subcommittee
- PTAGIS will proceed with developing interrogation site metadata management tool
- PTAGIS will proceed with creating Noise Report for instream sites
 - Update IS to include transceiver noise data
 - Potentially will capture and include instantaneous noise values from status report
- PTAGIS will proceed with creating Timer Tag report for instream sites
 - Default interval is hourly
 - Potentially allow user to set a threshold per antenna
- Subcommittee will review the SOP, interrogation site metadata tool and the two new reports and provide feedback before announcing to general public
- Gabriel and Carley will schedule next meeting sometime in January before PTSC annual meeting

Review Actions from Last Meeting

Most actions from last meeting were completed, Gabriel and Randy to follow up on completing the optional stream bottom profile section of the site diagram guidelines.

Round Robin Updates

Gabriel Brooks, NOAA:

1. Trawl (site code TWX)
 - a. USACE funding still questionable
 - b. 2017 – 2019 12K unique tags detected (avg), in 2022: 9800
 - c. 1:1 Chinook to Steelhead
 - d. Will use new IS1001-MUX on trawl in 2023
2. Installed PD6, new pile dike site across from PD7, that operated when trawl was running. Detected about 10x the unique tags as PD7.
3. Plan to install new site at Campbell Slough in Richfield WA with figure 8 antenna design (6' over 6') using NOAA cable antenna
4. Asked Subcommittee about the modems they use for their sites. For PD sites, IS2001 24v with double battery pack submersible, and hidden from a lot of recreational traffic nearby.

Brady Allen, BPA

1. Contract management for instream sites with Biomark, WDFW and Nez Perce (NP)
2. Working with Nez Perce to prioritize which instream sites would get repaired in case of flood damage

3. Working with DART, UW on broad PIT Plan focusing on strategic areas to mark to counter decreased detections due to spill at Bonneville and McNary. Determine appropriate sample size for ESU etc.
4. Working with UW and others on how to improve tagging to determine straying, overshoot at dams for hydro
 - a. Will bring larger audience for 3 and 4 once further down road
5. Working to increase funding due to inflation for the Fish and Wildlife Program

Brian Davis, USFWS

1. Maintenance for sites monitoring hatchery returns and lamprey in Umatilla
2. New weir site in Clackamas to monitor bull trout
3. Deployed 'Wagon Wheel' antennas at Little White Fish Hatchery with submersible battery
4. Instream site modems: have used Verizon hotspot, which failed over time. Now using America (?) 4G LT outdoor model that is weatherized and working well.

Brian Knoth, IDFW

1. No new instream sites for IDFG this year, status quo
2. Using sites to determine steelhead escapement, due to low adult returns difficult. Working on new model to fill in gaps.
3. Salmon River region using Biomark corded pass-thru antennas (3ft x 30ft) for steelhead and chinook survival and habitat monitoring.
4. Instream site modems: most IDFG site use satellite modems

Carley Simpson, ONA

1. Maintenance on 4 sites on mainstem Okanogan, 2 instream and 2 fishway
2. Hope to install new site at Penticton Dam (upstream of chinook spawning platform) with 6 antennas, pushed to next year due to high flows.
3. Working with Biomark for antennas in fishway
4. Install new site at culvert next month
5. 4 tributary sites in Canada operating well
6. Mainstem sites have high noise, replacement battery switcher helped
7. Modems: CloudGate model at Penticton Dam

Derrick Faber, ODFW

1. Maintenance at Grande Ronde, Imnaha and John Day Basin
2. Added new tributary arrays in the Deschutes
3. Installed 6 seasonal arrays in the McKenzie
4. Working on slide gate array, difficult due to salt water
5. Finished install at Cougar Dam to monitor bull trout
6. Evaluating M5 in the office and working on SOP. Would like to make image SD card of M5 installation to insert into Raspberry Pi to be plug-and-play, will work with John.
7. Modems: Aventech B&B modem, 2-3 Ethernet ports + serial and usb capabilities. Easy to configure, network transparency, forwarding network protocol, \$700, saving time to configure worth it

Jeff Fryer, CRITFC

1. Issue with adult salmon migrating through open spillways at high flows rather than through the fish ladders where PIT tag antennas are. Therefore, in September 2021, we had Biomark install antennas across the spill bay to detect salmon migrating through spillways at high flows. However, within 24 hours of antenna installation, shed tags began to be detected on these antennas and now all 6 antennas have continuous shed tag detection which adversely affects detections of passing tagged fish. An effort to remove these with magnets failed as the tags appear to be under the antennas.
2. Working with Carly on ONA arrays.

Kory Kuhn, NPT

1. Primary working on field maintenance
2. Modems: Can't use cell modems. Some potential to use low-band satellite modem to indicate solar panel failure.

Kyle Meier, Biomark

1. Installing new site at Lebanon Dam for USACE with 30' x 10' antenna to cover face of dam, one of their largest antennas
2. Installing new antennas at Zosel Dam
3. Installed low profile antenna at Bennington Dam
4. Kyle + 7 staff perform maintenance across basin
5. Modems: Hughes satellite modems work well. Biomark deployed 500 CloudGate 4G cell modems that are easy to configure and deploy.

Ryan Gerstenberger, CWTSR

1. 3 sites in Hood River, maintenance, will replace antennas soon
2. New site installed in irrigation diversion with 15' pass-thru antenna, working well
3. Modem: manual data collection only

Tom Desgroseillier, WDFW

1. Installed PIT barge on the lower Wenatchee River few months ago
2. Planning to install another barge on the lower Methow River next month, already registered with PTAGIS
3. Planning to upgrade MUX transceivers at long-term sites
4. Helped west-side WDFW install arrays to monitor hatchery returns
5. Modem: uses Biomark supplied

Zack Mays, YN

1. Replace some antennas on sites in upper Yakima basin
2. Building flat-plate antennas for 2 new tributary sites
3. Installing 50' x 7' pass-thru antenna for new site
4. New site using 8 Biomark supplied floating antennas below smolt trap
5. New site using pass-thru antennas to determine overwintering location of steelhead

6. Modem: CloudGate (Biomark), would like pre-config

Darren Chase, PTAGIS

1. Some evaluation of IS1001-MUX, mostly for PTAGIS software development team
2. Bend radius of NOAA cable concern, collaborating with Gabriel to design water-proof wire antenna to wrap, good read range under 24" water; jacket size of wire antenna concern
 - a. Reduce dependence on ferrite shielding, difficult to get
 - b. Next phase: test load and proximity to shield
 - c. Alternatively looking to replacing jacket of NOAA cable to make 90-degree bend

Biomark Updates

Kyle Meier presented information on how Biomark uses VTTs to assess site uptime and some Biomark device updates. [Presentation](#).

- IS1001 is getting some changes due to supply issues with planned release in/after 2024
- New Master Controller is also delayed due to supply issues
- New HPR+ 20 units available for retail, with multiple antenna options and improved battery life, but old antennas will not be usable with new unit
 - Antennas can be mounted on poles
 - Not planning a buy-back program, but will look into it
 - Regarding battery issues on current HPR, Kyle recommended to turn the power down to save battery. Will look into potential to disable geo-tagging, as well.
- New 8.5mm tag to replace 8mm and 9.5mm to replace 9mm
- Working on a new APT12 to improve performance
- Released floating submersible antenna (wagon wheel)

PTAGIS Updates

John Tenney presented information about software and web updates related to instream sites which PTAGIS has been working on. [Presentation](#).

- New versions of I5 and M5 have been released with support for the new IS1001-Mux
- Discussed security issues with Raspberry Pi deployments
- Reviewed new interrogation site metadata management features on the website
 - Subcommittee agreed with the site contact roles as defined
 - Suggestion to allow modification of site contacts for multiple sites at one time
- Reviewed option for obfuscating site locations and Subcommittee decided to not pursue any changes
- Reviewed possible operational metadata reports
 - Subcommittee would like to move forward with timer tag report and noise report
 - Suggestion to use the noise value reported in the status report instead of the noise report
 - Suggestion to use a color other than red for the timer tag report