PIT Tag Information System
Columbia Basin

Newsletter

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Upgrade to New Database System Complete

NICOLE TANCRETO (PTAGIS Portland Office)

Over the past few years the PTAGIS program has been working towards upgrading the infrastructure on which PIT tag data is processed and delivered. On September 27, 2013, we moved the final tag data loading and notification processes from the legacy server to the new database system. This enabled us to meet the deadline for shutting down the legacy database server, as required by the expiring license agreement. We will continue to refine the new data loading processes, notification systems, and reporting tools, and also have the opportunity to start evolving the system to better meet the user community's needs. Here is a timeline of some of the major tasks we accomplished during the past year and a half.

- Website and Reporting

    o Beta 1 released to focus group in April of 2012

    o Beta 2 was released on October 24, 2012

    o Website and reporting moved to production status on April 30, 2013

- Interrogation data collection and loading

    o M4 installed at PTAGIS-maintained sites in May 2012 to run in parallel with legacy data collection platforms (Minimon/Multimon)

    o M4 data becomes primary source for PTAGIS-maintained interrogation dataset on March 1, 2013

    o Minimon data loading moved from legacy database server to PTAGIS4 database server on March 1, 2013

- Tag distribution

    o New Tag Distribution and Inventory system released on September 10, 2013

- Tag data loading

    o P3 tag file loading moved from legacy database server to PTAGIS4 database server on September 27, 2013

    o Validation and notification processes for P3 tag files and Minimon interrogation files implemented on PTAGIS4 system

Changes to Interrogation Data Loading and Validation

NICOLE TANCRETO (PTAGIS Portland Office)

As noted in the timeline above, M4 has been running at PTAGIS-maintained interrogation sites for well over a year, and has been providing the primary dataset for interrogation data at these sites since March 1, 2013. This new generation of interrogation software has a large feature-set, including configurations for operating special transceivers and Separation by Code gates, as well as a different file format. The new file is in the XML format and you will see these files in the Raw Data Files directory for PTAGIS-maintained sites for dates on or after March 1, 2013.

At this time, M4 is only released for use at PTAGIS-maintained sites. A slimmed-down version of this software could be produced for use at smaller interrogation sites, if there is a need. Please contact John Tenney (john@psmfc.org) if you would be interested in using a new generation of interrogation software.

Minimon files have been processed and loaded in the new server since M4 became the primary data source, however, validation and notification was still being completed by legacy processes until September 27, 2013. With this latest transition, validation of Minimon formatted files and notification of errors are now being completed on the new server. Validation of interrogation files has not changed significantly between the two systems, however a couple of things have changed that data submitters and users should be aware of:

1. Buffered records are ignored (previously a file with buffered records was rejected)
2. File Open and Close dates are checked to make sure they are not in the future
3. Tag codes are checked against a list of known tag code masks

Tag code validation (number 3 above) is performed to prevent spurious tag detections from being loaded as real detection data. Detection records that have a tag code that does not match a known mask will be marked as invalid and not exposed through the reporting system. We will be working with the PIT Tag Steering Committee to develop a process to add new tags to the valid tag code mask list, which will be made available on the website in the near future. ⟳

Changes to Tag Data Loading and Validation

NICOLE TANCRETO (PTAGIS Portland Office)

Before September 27, 2013, validation, notification and loading processes were running on the legacy server, and the resulting data were synchronized to the reporting database. As of September 27, all processing is now being done on the new database system and includes these changes:

1. Tagging data is now linked to a project instead of a person (see email to Tag Data Coordinators for more information)

2. The sender is validated against a list of authorized data submitters for that Tag Data Project ID (Coordinator ID)

3. The coordinator of a tag data project can change who is on that list of authorized data submitters

4. All date fields (including Brood and Migration year) are checked to make sure they are not in the future or earlier than 1986

5. Release Date is checked to make sure it is not earlier than the Tag Date (this includes variable release dates)

6. Notifications are sent to the data submitter and the coordinator for the Tag Data Project

7. If a tag data project does not have an active coordinator, no new data or corrections will be processed

Notifications are still somewhat bare bones, but we will be enhancing them in the coming months to show more information. ☉

PTAGIS Tagging Software Update

JOHN TENNEY (PTAGIS Portland Office)

The latest version of P3 tagging software is available for download from here: http://www.ptagis.org/software/softwaredetails/p3 along with a link to a change log. Released in 2002, P3 has been a reliable system for capturing and submitting millions of mark and recovery records into PTAGIS. As noted in previous articles, the software is well beyond a planned expiration date and is increasingly more difficult to support.

With the server upgrade completed, we are now reviving the P4 project to deliver a suitable replacement for P3 in the next year (barring resource issues). Building off of M4 and the PTAGIS4 server, the new tagging software will run on the same platforms as P3, support the latest hardware and provide an extensible foundation to refine mark and recovery data in the PTAGIS dataset.

To help us further scope this project, we'd like to get feedback from the community on a wish-list of features for P4. Please take a moment to complete this short online survey.

We will of course still be supporting P3 until a replacement is available. For those deploying P3 on new systems, please keep the following in mind:

- P3 was designed to operate from a dedicated user account with read/write privileges on the installation folder and access to the system registry.

- From limited testing, this software will run on the latest Windows PCs, laptops and tablets (Windows XP SP2 through Windows 8)

- P3 will *not* run on Android or Apple devices, nor will it run on tablets running Windows RT.

- Due to limited resources, we're unable to recommend compatible peripheral devices such as digitizer tablets and balances.

- P3 version 1.5.4 supports the Biomark HPR portable reader only as a serial device.

PTAGIS Coming to Your Town

NICOLE TANCRETO (PTAGIS Portland Office)

During January and February of 2014, we are planning to visit 4-5 locations within the Columbia Basin to meet with PTAGIS users. We have a couple of goals for these meetings. First, we would like to show users how to get the most out of the new reporting system and website. Second, we would like to continue scoping for the next generation of tagging software. We will take the results from the tagging software survey described in the previous article and will be discussing the results and gathering more feedback in person. Topics to be covered in this PTAGIS Roadshow include:

- Advanced Reporting Tips & Tricks
- Question and Answer session about Advanced Reporting
- Quick Reports
- P4 Presentation and Scoping
- Interrogation site metadata
- Interrogation software (if requested)
- Open Forum

In order to plan where and when we should go on this road trip, please fill out this short survey if you are interested in attending. The survey asks you to select potential locations and time periods for these sessions. ⊚

Additions to Website

NICOLE TANCRETO (PTAGIS Portland Office)

We wanted to point out a couple of new additions and other features on the PTAGIS website that the user community may not know about.

Interrogation Site Metadata – all the metadata that is currently maintained for interrogation sites can be found on this page: description, location, photos (if we have them), configuration history, operational dates, event logs, and contacts

Clip File Downloads – search by vial number or PIT tag code and download clip files for the resulting vials; only available for PIT tags distributed by PTAGIS

Separation by Code Summary – summary of implemented separation by code projects

Frequently Asked Questions – this is not a new addition, but we just wanted to remind everyone that this page is here and is a good place to check first if you have a question

PTAGIS Field Operations & Maintenance Summary for Fall 2013

DON WARF (PTAGIS Kennewick Office)

Summary of O&M for 2013

As in previous years, the juvenile fish bypass facilities on the Snake and Columbia Rivers began operating around April 1st. Prior to these operations, the PTAGIS Kennewick staff performed all the necessary pre-season tuning and maintenance to ensure peak performance of the juvenile fish detection and diversion equipment. Detection and diversion efficiency rates for 2013 are being kept at or above previous years. No data losses or diversion gate failures have occurred in 2013.

Separation by Code (SbyC) interrogation sites were operated with the new M4 interrogation and SbyC software. The older Multimon data collection platforms were retained at all sites for a one season evaluation of M4. The M4 platforms performed all tasks with a high degree of detection and diversion efficiency and no data losses. The decision to retire the Multimon SbyC platforms in 2013 was a clear choice. Developed by the PTAGIS Portland group, M4 raises the O&M capabilities of the Kennewick group to a whole new level with up to the minute reader statuses and instant email alerts to problems within the fish facilities. All non SbyC sites operated by PTAGIS were also operated in 2013 with a split M4 / Minimon platform to verify M4 stability and efficiency. The decision to retire Minimon in favor of M4 was a clear choice as M4 performed flawlessly.

PTAGIS Field Operations & Maintenance Summary for Fall 2013

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Other PTAGIS Field Office Projects for 2013

- **Deployment of the new Biomark FS2020 transceiver.** After a full one year evaluation, PTAGIS has accepted the FS2020 as a suitable replacement for the aging FS1001A and FS1001B transceivers on the main stem. The FS2020 has shown a slight increase in detection efficiency over the FS1001A and has met the detection efficiency of the FS1001B. One major advantage for the FS2020 is its ability to auto tune. Our evaluation has shown that the auto tune function of the FS2020 responds well to changes in water level or any other environmental condition that affects tuning. This will result in fewer trips to remote sites for manual tuning. PTAGIS will make the full flow juvenile detectors and the adult ladder detectors the highest priority for this deployment.

- **PIT tag room rewiring at all SbyC sites.** The eight SbyC sites operated and maintained by PTAGIS, will need to be rewired to accept the M4 platforms. The new M4 computers feature solid state hard drives and industrial grade power supplies. This will also include new high end UPSs for the data collection platforms and updated high speed interface panels.

- **Continued monitoring of the new adult thin body ferrite tile antennas at The Dalles counting windows.** PTAGIS has performed weekly YTD detection efficiency reports for adult detection at both The Dalles counting windows. Total combined efficiency for the site, as of 10/7/13 is 99.57%, which meets or exceeds the efficiency of all other main stem ladders. Below is a graph of how the efficiency is calculated. This calculation does not consider the unlikely possibility of missed detections at multiple dams.


PIT Tag Detection Efficiency at The Dalles Dam			
99.57%	The Dalles Dam has detected 20,082 of the 20,169 PIT tags detected at both Bonneville and McNary Dams.		
Data Detail			
PIT Tag Detections in the Fish Ladders since February 4, 2013 (February 4, 2013 was the last day fish could get through either of The Dalles Dam fish ladders prior to the installation of PIT tag detection equipment). This data was last updated October 7, 2013			
ROW 1 Individual Dam Numbers	**Bonneville Ladders** (BO1, BO2, BO3 & BO4) Unique PIT Tags Detected: 35,847	**The Dalles Ladders** (TD1 & TD2) Unique PIT Tags Detected: 26,953	**McNary Ladders** (MC1 & MC2) Unique PIT Tags Detected: 20,541
ROW 2 Two Dam Comparisons	Unique PIT Tags detected at both Bonneville & The Dalles Dams: 26,645		Unique PIT Tags detected at both The Dalles & McNary Dams: 20,203
	Unique PIT Tags detected at both Bonneville & McNary Dams: 20,169		
ROW 3 Three Dam Comparison	Unique PIT Tags detected at all three dams: Bonneville, The Dalles & McNary 20,082		

The .43% loss in detection efficiency is explained by either side by side tagged fish movement through the counting windows, canceling each other out, or fish traveling through the navigation lock which is always possible at all other PTAGIS operated main stem adult sites.

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- **The PTAGIS field O&M staff continues to act as consultants for new PIT tag installations.** On the USACE Walla Walla District side, these include proposed adult antennas for the Little Goose counting window, antennas for both counting windows at Lower Monumental, a single SbyC antenna for the new adult trap at Ice Harbor, three new full flow antennas for the new Lower Granite juvenile bypass and temporary antennas within the juvenile collection channel at Lower Granite. On the USACE Portland District side, using 3D CAD modeling software, PTAGIS draftsmen and antenna designers have submitted the following concept for equipping the John Day ladders with thin body ferrite tile antennas. This system is projected to run at near 100% efficiency:

**Antenna Inset
Flush to Floor**
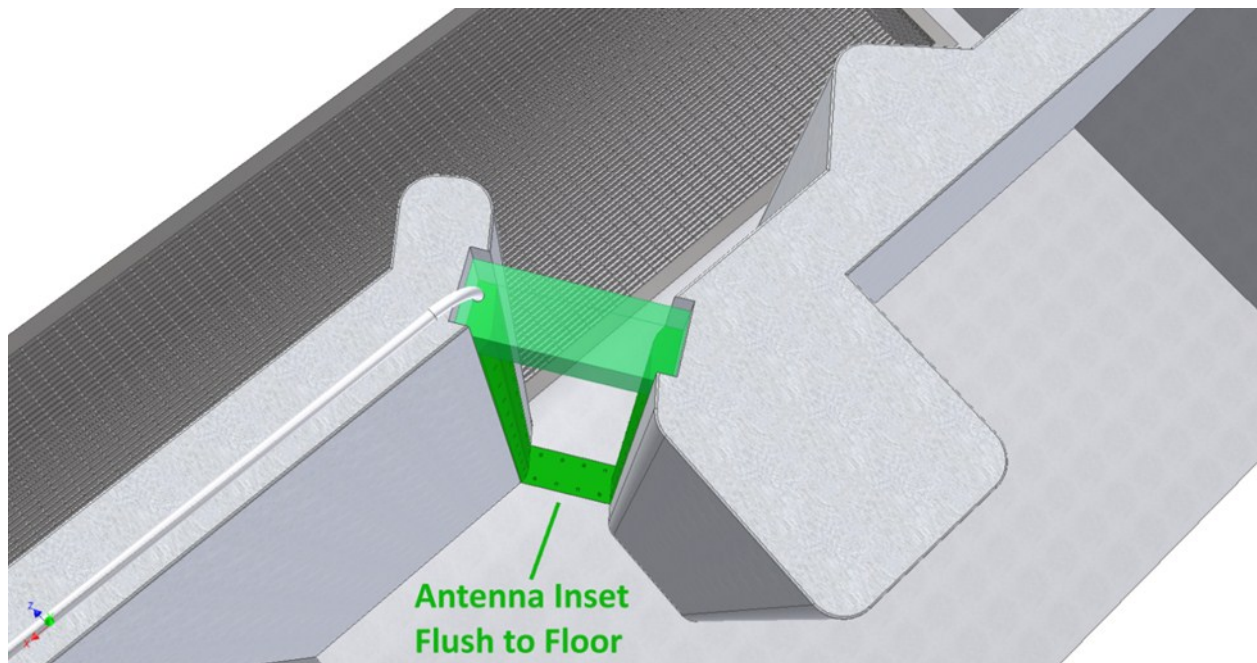
- **Construction of a tag sorter.** PTAGIS continues to provide QA for new and production PIT tags for all BPA funded projects, doing this at a 1% sample rate. The sample rate will increase to 3 to 5% with an addition of a tag sorter being designed and built at the PTAGIS Kennewick testing lab. The tag sorter is slated to be completed by the end of 2013. PTAGIS continues to receive, house, inventory and ship PIT tags to all BPA funded projects. This task is aided by the new TDI program that replaces TDS. The TDI program was developed in house by the PTAGIS Portland group.

- **PTAGIS continues to repair failed transceivers in our Kennewick lab.** The aging FS1001, FS1001A and FS1001B transceivers are repaired in house and are projected to last, at a minimum, another 5 to 7 years. The yearly failure rate for these transceivers has not risen since they were initially installed.

PTAGIS Field Operations & Maintenance Summary for Fall 2013

- **PTAGIS continues to refine facility controls.** This work includes constantly updating the programmable logic controllers (PLCs) with refined programs based on requests from the USACE, NOAA, state and tribal site operators. PTAGIS designs, installs and operates these systems for site environmental monitoring, sampling and SbyC activities.

- **PTAGIS continues to provide researchers with Separation by Code capabilities.** This work includes many in season ad-hoc requests from researchers to accommodate ongoing and new projects.

- **A new transceiver for the Bonneville corner collector.** Destron / Biomark engineers in Minnesota are developing a new transceiver for the 17' x 17' corner collector PIT tag antenna. Ongoing testing, by PTAGIS field engineers at the site have produced promising results. Stability and auto tuning still needs to be refined, however we are optimistic that the system will be ready for the 2014 out migration. Once this transceiver is accepted by PTAGIS as production, it will be a prime candidate for powering embedded ogee antennas in spillways. ⊚