PIT Tag Information System
Columbia Basin

Newsletter

AUGUST 2015
Volume 13
Issue 2

The PTAGIS Newsletter is published periodically by Pacific States Marine Fisheries Commission.

We welcome input from the PTAGIS community, so email us at ptagis_newsletter@ptagis.org with your story ideas.

If you have questions regarding the contents of this publication, or about the PTAGIS program, please contact PTAGIS Staff.

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A Fisheries Data Project of the Pacific States Marine Fisheries Commission

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Note from the PIT Tag Steering Committee Regarding PIT Tag Placement in Anadromous Salmonids

PIT TAG STEERING COMMITTEE

On July 9, 2015, PTAGIS was contacted by an individual who had bitten down on a PIT tag in a piece of smoked salmon and broke a tooth. This is the third known incident in less than two years of a human biting a PIT tag. It appears the PIT tag was in or near the dorsal sinus.

As discussed at the 2015 PIT Tag Workshop, the PIT Tag Marking Procedures Manual states:

> *"The PTSC and FPAC members do not endorse or recommend any tagging location in anadromous salmonids other than what is described in this manual. Tagging in any location other than the abdominal cavity increases the risk of human consumption."*

The most important issue with PIT tag placement is human food safety. Tagging outside the abdominal cavity places the fish-consuming public at risk and jeopardizes the continued use of glass-encapsulated PIT tags for fisheries research. Please conduct PIT- tagging operations in a safe and responsible manner by not tagging outside the abdominal cavity.

New PTAGIS Kennewick Staff Member

DON WARF (PTAGIS Kennewick Office)

Daniel (Dan) Meyer has joined the PTAGIS Kennewick team as a full time instrumentation technician. Dan is filling a vacancy created by the departure of Troy Humphrey. Dan has a diverse background in instrumentation technology having worked in an industrial environment that relies heavily on automation. His primary responsibilities are to maintain the existing field instrumentation and design new controls and programmable logic control programs for upcoming projects. We look forward to utilizing Dan's skills in designing the Separation by Code (SbyC) controls for the new Ice Harbor Adult Trap and the SbyC controls for the upcoming Lower Granite Juvenile Fish Facility remodel.

P4 Update

JOHN TENNEY (PTAGIS Portland Office)

We are meeting the schedule with the development of the next-generation P4 tagging software. A preview of the software was presented at the 2015 PIT Tag Workshop. Since then we've completed additional features that take advantage of an enhanced Mark-Recapture-Recovery (MRR) data model described in a previous newsletter article. Existing P3 tagging data files can be imported, modified and uploaded to PTAGIS using P4 to make use of the new MRR data model. Data contributors can continue to use the existing P3 tagging software to collect and submit data to PTAGIS but they will be restricted to the legacy data model.

Click here to watch an online video that further demonstrates the new software. Please take the time to watch the video and give us any feedback via the online Tagging Software forum or the Contact web page.

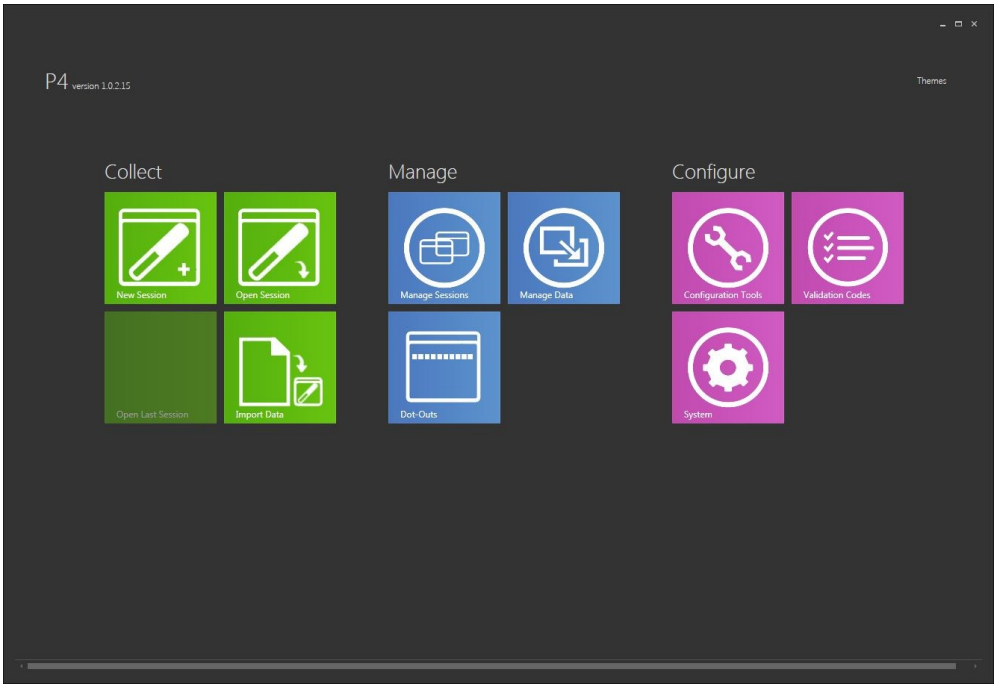

Figure 1. Dashboard of the next generation tagging software P4.

We will continue implementing and testing additional features through the rest of this summer such as uploading, validating and processing of P4 data in the database; executing tag actions and audible alerts; and finalizing digitizer map interactivity. With the help of the PIT Tag Steering Committee, we are organizing a focus group to test and refine a beta release of the software later this year. If you you'd like to participate in this focus group please contact Nicole Tancreto.

Ultimately we plan to have a production release of this software available early next year. We will continue to offer limited support for the legacy P3 tagging software to help with the transition.

PTAGIS Field Operations Maintenance Summary

SCOTT LIVINGSTON (PTAGIS KENNEWICK OFFICE)

Figure 2. John Day North Ladder

Summary of O&M for 2015

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 2015 are being kept at or above previous years. PTAGIS maintained facilities continue operating exclusively with the M4 interrogation software. The M4 application has been highly reliable and continues to meet or exceed performance standards.

Other PTAGIS Field Office Projects for 2015

- Update: Further deployment of the Biomark FS2020 transceiver.
  Additional sites have been retro fitted to support the FS2020 transceivers, most recently, the Bonneville WA shore and Bradford Island slot antennas were equipped with these readers and have substantially decreased the maintenance visits required.

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PTAGIS Field Operations Maintenance Summary

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- Smart UPSs to be installed at all Non-SByC sites.

  The Kennewick field office will be scheduling the installation of high capacity UPSs at all Non-SByC sites. As stated in the previous newsletter, all SByC sites were previously upgraded with these devices and have proven to be very reliable and effective in circumventing power outages while providing long lasting power to all critical devices in the PIT tag rooms. These UPSs also incorporate network management cards that have the ability to send email alerts to PTAGIS when a power event occurs.

- Adult Ladder detection efficiency as of July 28, 2015.

Ladder Site	Bracket Tags	All Tags	Missed Tags	Percent Detected
BON	2,261	2,255	6	99.7
TDA	6,748	6,738	10	99.9
MCN	3,927	3,913	14	99.6
ICH	3,933	3,895	38	99.0
LMA	3,713	3,693	20	99.5
GOA	3,714	3,620	94	97.5
GRA	1,477	1,468	9	99.4

BracketTags Number of tags detected both downstream and upstream of ladder site
AllTags Number of tags detected at bracket sites and ladder site
Missed Tags Number of tags detected at bracket sites, but not detected at ladder site
Percent Detected Percent of tags detected by ladder site

Site	Downstream Bracket Sites	Upstream Bracket Sites
BON	Fish released at COLR1, COLR2, COLR3, BONAFF	TD1, TD2, MC1, MC2
TDA	BO1, BO2, BO3, BO4	MC1, MC2
MCN	BO1, BO2, BO3, BO4	ICH, LMA, GOA, GRA
ICH	TD1, TD1, MC1, MC2	LMA, GOA, GRA
LMA	TD1, TD1, MC1, MC2	GOA, GRA
GOA	MC1, MC2, LMA	GRA
GRA	LMA, GOA	Sites with RKM > 522.173 and type = Adult ladder or Instream

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PTAGIS Field Operations Maintenance Summary

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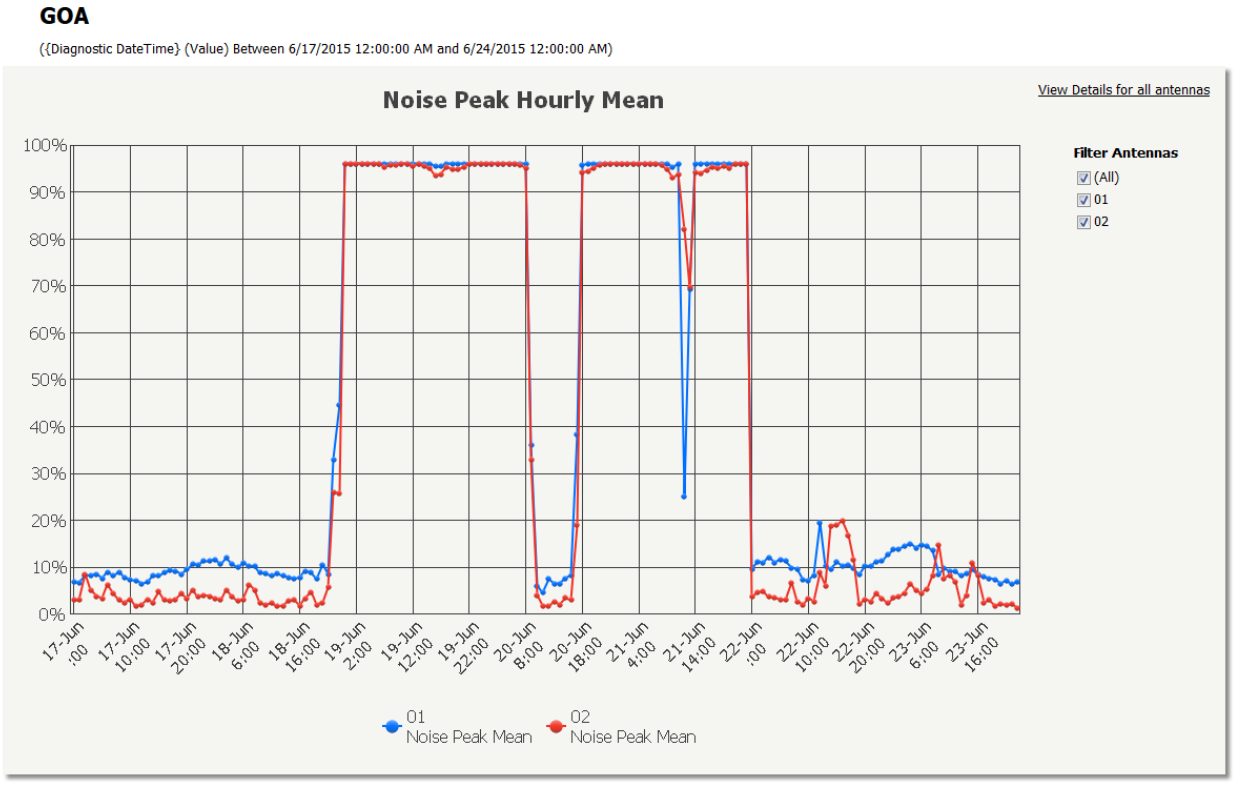
- ## Little Goose Adult (GOA) detection efficiencies.

  As shown in the detection efficiencies table on the previous page, the YTD percentage for GOA is 2 percent lower than comparative systems. This is due to a severe and somewhat unexplained noise event that occurred in late June as indicated in the graph below. PTAGIS personnel were on-site for several days in an attempt to track down and mitigate the source of interference but no hard explanation for the event was ever determined. As a precaution, the transceivers and UPSs were replaced, cable connections and grounds were reseated and tightened. The interference abruptly disappeared and has not returned since. As of around June 23, 2015, detection efficiencies have returned to expected rates of 99+ percent.



- ## John Day adult PIT tag detection.

  PTAGIS O&M was asked by the FDDRWG members to draft conceptual drawings for the proposed overflow and orifice antenna installations on the north and south ladders. One of the proposed designs would have little to no impact on ladder operations and is currently under consideration by the FDDRWG members. The FDDRWG members also asked PTAGIS O&M to survey the north and south ladders for suitable installation locations. This information was also presented to the group and is under consideration.

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PTAGIS Field Operations Maintenance Summary

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- 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 7 to 10 years. The yearly failure rate for these transceivers has not risen since they were initially installed.
- 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.
- Bonneville Corner Collector (B2CC).
  The Biomark FS3001 transceiver continues to perform as expected. The transceiver is closely monitored by PTAGIS staff for any event that would indicate degraded performance. Any anomalies or significant performance issues observed are documented and passed on to the manufacturer to further assist the development of the Spillway OGEE transceivers.
- PTAGIS provides continuing technical support for Lower Granite Spillway PIT tag project.
  PTAGIS involvement includes design reviews, performance testing of proposed antenna designs and transceiver functionality. PTAGIS field personnel continue to be actively involved in most aspects of this effort.
- Lower Granite Dam Juvenile Bypass remodel.
  PTAGIS O&M continues to provide technical assistance to the US Army Corps of Engineers Walla Walla District with regards to the construction and installation of three PIT tag antennas to be located on the new Full Flow transport flume. It is anticipated the Full Flow PIT tag antennas will be operational at the end of the construction period.

Figure 3. Lower Granite transport flume under construction. July 2015

Spatial Data Available for Interrogation and MRR Sites

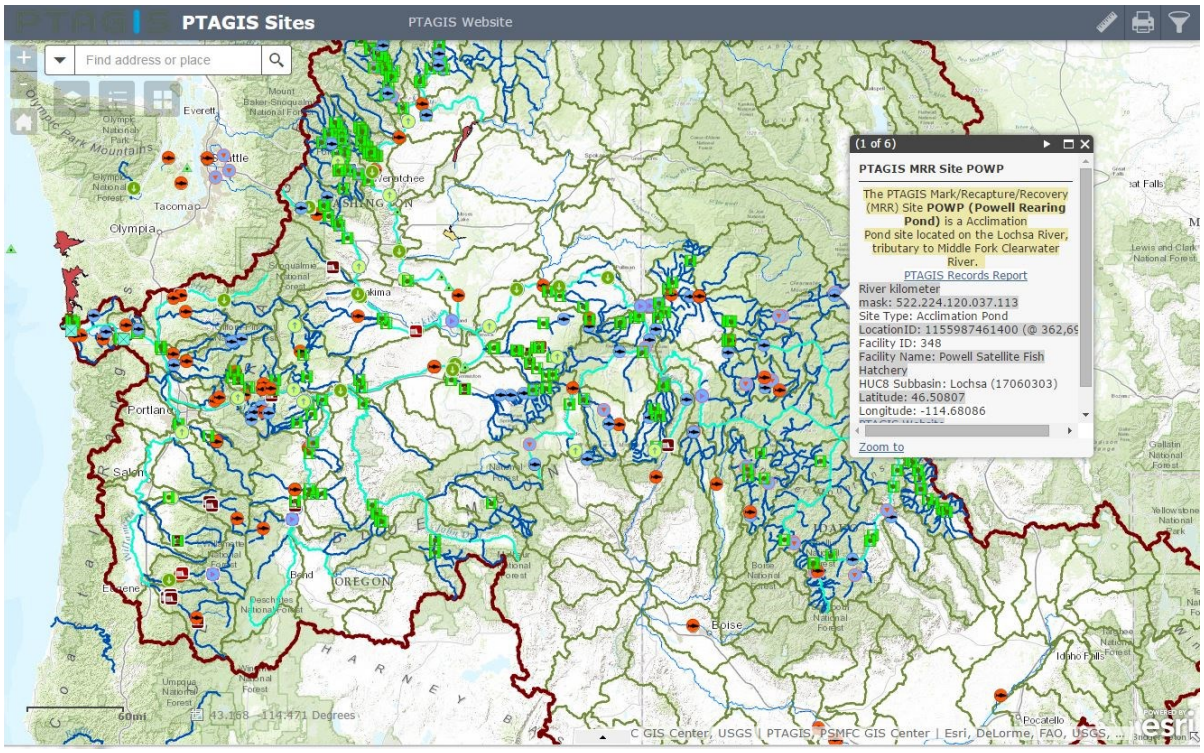
NICOLE TANCRETO (PTAGIS Portland Office)

In collaboration with the PSMFC GIS Data Center, PTAGIS has published a spatial dataset for interrogation and MRR (mark/recapture/recovery) sites. This dataset contains all previously and currently active interrogation sites, and all MRR sites that are not archaic and for which reliable location information exists. It will be updated on a quarterly basis to incorporate newly registered sites.

MRR sites are shown as three shape types: points, lines and polygons. All sites are shown as points, but those sites which are better represented as lines or polygons, are also contained in separate layers using the appropriate geographical type. A good portion of the MRR sites defined in PTAGIS are streams or stream segments and these can now be visualized as such on digital maps. Likewise, lakes and avian colonies can now be shown as polygons.

The spatial dataset is available via an online web map, through REST services, or via download in ESRI file geodatabase format. Please see the GIS Data page for links to these sources, and to review the FGDC compliant metadata for each available layer.

The web map shows HUC boundaries and makes it simple to complete some basic queries, such as finding all the interrogation and MRR sites within a HUC, or all the sites of a particular type. In addition, tool tip popups link to interrogation site metadata and a record summary report that shows the number of events in PTAGIS that have been recorded at that site by year.



The PSMFC GIS Data Center created this dataset starting from geographic coordinates provided by PTAGIS. In the process, all locations were reviewed and updated as necessary. If you see any locations that appear to be incorrect, please contact us.

New Website Features

NICOLE TANCRETO (PTAGIS Portland Office)

During scheduled maintenance on June 18, many behind the scenes hardware, server, and software updates were applied to PTAGIS systems. In addition two new features were implemented on the website to streamline the process to request new validation codes and download clip files.

Registered users can now request that new codes be added to the current list of validation codes, by completing and submitting a form on Request New Validation Code page. All visitors to this page can view the status of current requests, but you must be logged in to create and submit a request for a new Capture Method, Flag Code, Hatchery, MRR site, Organization, Data Project, Species, Species-Run-Rear Type, Tagging Method or Tag Code Mask.

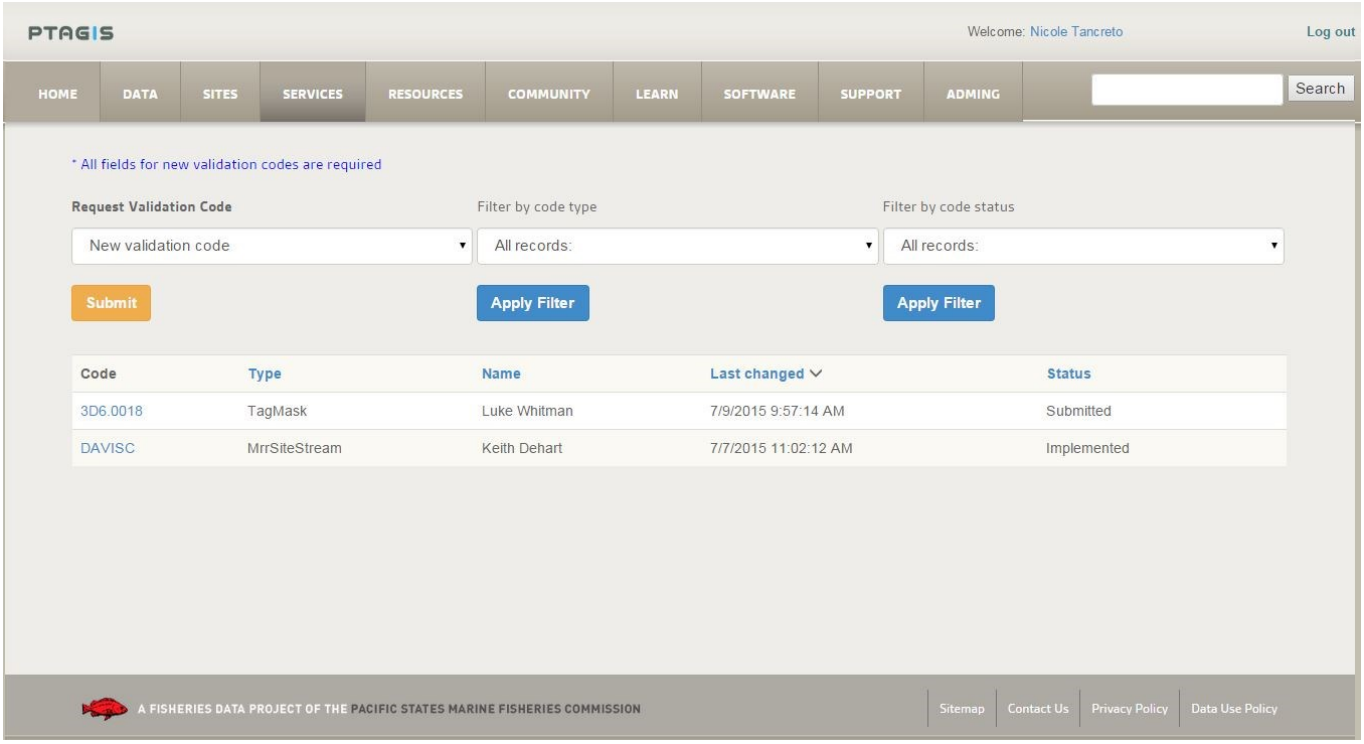


Figure 4. New form for requesting new validation codes to be added to PTAGIS.

The Clip File Downloads tool, see Figure 5, also received an upgrade which allows you to find clip files by tag distribution Request ID, a single tag code, or a vial code search string. Once you have found and selected all the vials for which you would like to download clip files, you can choose between two file download formats. You can still download the clip files in the traditional format of one vial per text file, or you can choose to download one CSV file containing all the vials.

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New Website Features

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Figure 5. New form for downloading clip files.

Tag Distribution Data Now Available in Complete Tag History and Advanced Reporting

NICOLE TANCRETO (PTAGIS Portland Office)

Tag distribution information going back to fiscal year 1999 is now available through the reporting system. This information is available primarily for tags that have been distributed by PTAGIS for the BPA Fish & Wildlife program. Some information is available for tags distributed by the US Army Corps of Engineers, but it is not a complete dataset. All in all, there is distribution information for about 21 million tags in the PTAGIS dataset, which represents a little over half of the tagging records currently available.

The Complete Tag History report now shows any available information on the Distribution Info tab. This includes when and where the tag was shipped, for which BPA project, and some information about the tag itself, such as type and model.

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Tag Distribution Data Now Available in Complete Tag History and Advanced Reporting

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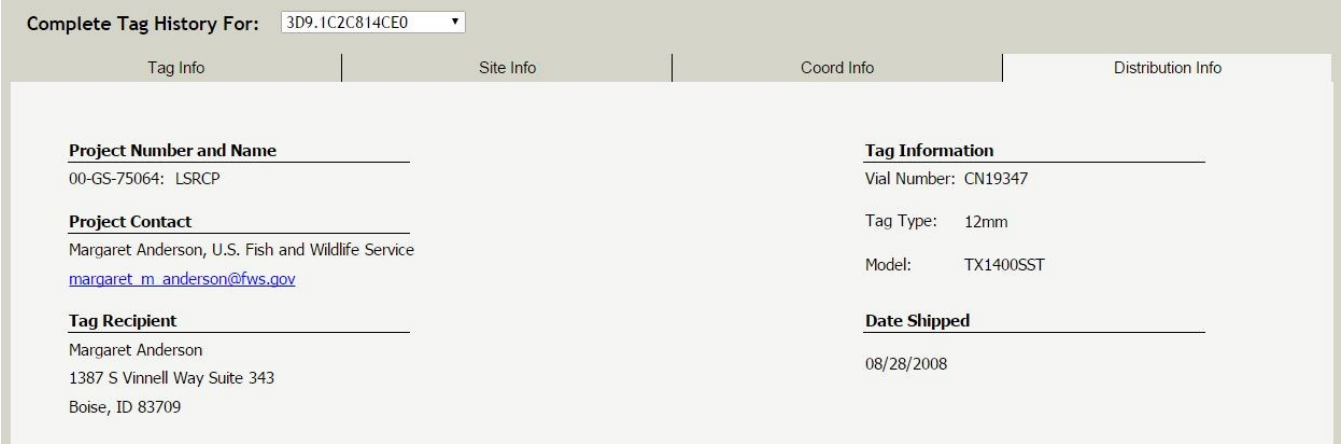

Figure 6. Tag distribution information tab on the Complete Tag History Report.

Attributes for tag model, tag type, and tag vial are also available in each of the Query Builder 2 reports. The Tag Type and Tag Type Description attributes show the general size class of the tag (e.g. 9mm, 12mm, 20mm) and whether it was distributed as a bare tag or preloaded into an injector (tags that were preloaded have a tag type such as 9pl or 12pl). You can also filter any of the Query Builder 2 reports by tag type or vial code. The full PTAGIS tag distribution dataset can be accessed through a new Query Builder 2 report called Tag Distribution.

Tag Type		12mm	12pl	8.5mm	9mm	9pl	Unknown
Site	Unique Tags	Unique Tags	Unique Tags	Unique Tags	Unique Tags	Unique Tags	Unique Tags
B2J - Bonneville PH2 Juvenile	12,453	10,530	5,213	7	40	62	1
BCC - BON PH2 Corner Collector	18,125	22,093	10,918		900	28	11
GOJ - Little Goose Dam Juvenile	31,804	92,484	28,022	79	529	223	2
GRJ - Lower Granite Dam Juvenile	52,364	110,953	8,855	53	467	191	7
JDJ - John Day Dam Juvenile	30,315	43,382	12,504	25	280	96	5
LMJ - Lower Monumental Dam Juvenile	20,685	51,559	17,322	30	273	116	6
MCJ - McNary Dam Juvenile	38,185	60,649	14,012	77	250	90	5

Figure 7. Summary of unique tags detected at juvenile bypass sites in 2014 by Tag Type.