PIT Tag Information System
Columbia Basin

Newsletter

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The PTAGIS Newsletter is published periodically by the 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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PTAGIS Website and Reporting System Upgraded

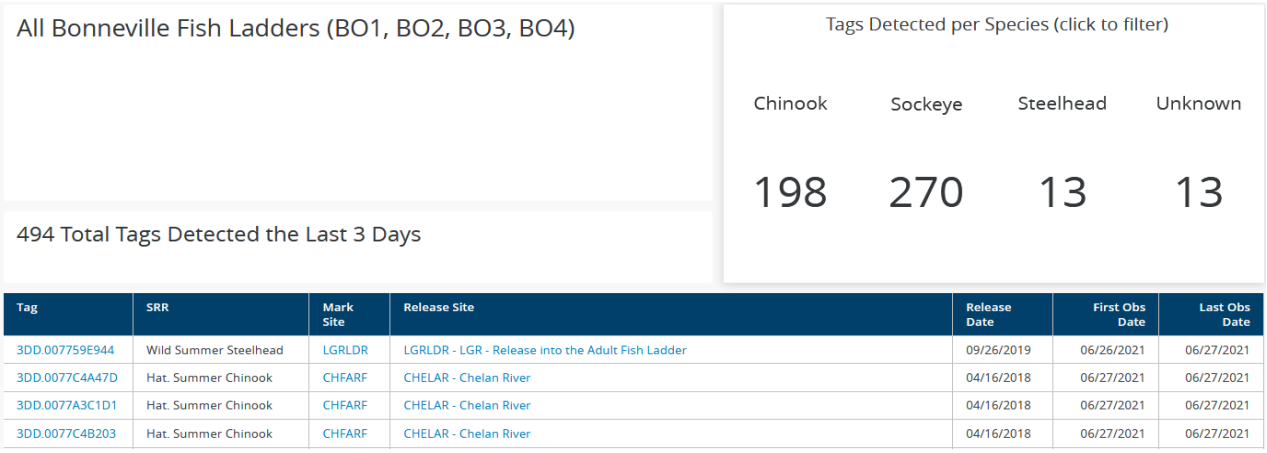
NICOLE TANCRETO (PTAGIS Portland Office)

We released an updated PTAGIS website on June 15, 2021. The new site was developed in house and sports a clean and modern design and many usability upgrades. Your saved bookmarks should automatically be redirected to an equivalent page on the new website.

We also migrated the reporting system to a new server and upgraded it to the latest version. Your saved reports and subscriptions have been migrated and should run as they did before the upgrade and migration.

The new website has all new quick reports built using new technology available in the upgraded reporting system. You can run the Complete Tag History report by entering a PIT tag code in the **Search by PIT Tag** field on the home page, or you can copy and paste up to 50 codes into the list box on the report page itself.

The Observations report lets you query the tag detections at a single interrogation site over a period ranging from the last day to 5 years ago. By popular demand we released the Adult Ladders report on June 22 that allows you to query tag detections from all the ladder sites at a dam, so you can see all the fish detected at Bonneville Dam overall instead of site by site.



Tag	SRR	Mark Site	Release Site	Release Date	First Obs Date	Last Obs Date
3DD.007759E944	Wild Summer Steelhead	LGRLDR	LGRLDR - LGR - Release into the Adult Fish Ladder	09/26/2019	06/26/2021	06/27/2021
3DD.0077C4A47D	Hat. Summer Chinook	CHFARF	CHELAR - Chelan River	04/16/2018	06/27/2021	06/27/2021
3DD.0077A3C1D1	Hat. Summer Chinook	CHFARF	CHELAR - Chelan River	04/16/2018	06/27/2021	06/27/2021
3DD.0077C4B203	Hat. Summer Chinook	CHFARF	CHELAR - Chelan River	04/16/2018	06/27/2021	06/27/2021

Figure 1. New Adult Ladders quick report.

There is a known issue with users on the ODFW network not being able to run the new quick reports. We are working with Oregon state IT staff to resolve this firewall issue and expect them to be available soon.

We created several pages intended to provide a quick overview to help introduce new users to PTAGIS, the PIT tag data, and the tools available through the website. The PTAGIS tour has been resurrected as a video with the deprecation of Adobe flash. The other P4 and reporting system video tutorials have been updated and produced with closed captions. The PTAGIS Data Specification, validation codes and program documents are all available on the new site. Search has been significantly improved on the new site, and will now find site codes and terms in meeting notes or newsletter articles along with terms on any of the pages.

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Features which require you to log in are now located on the PTAGIS dashboard.

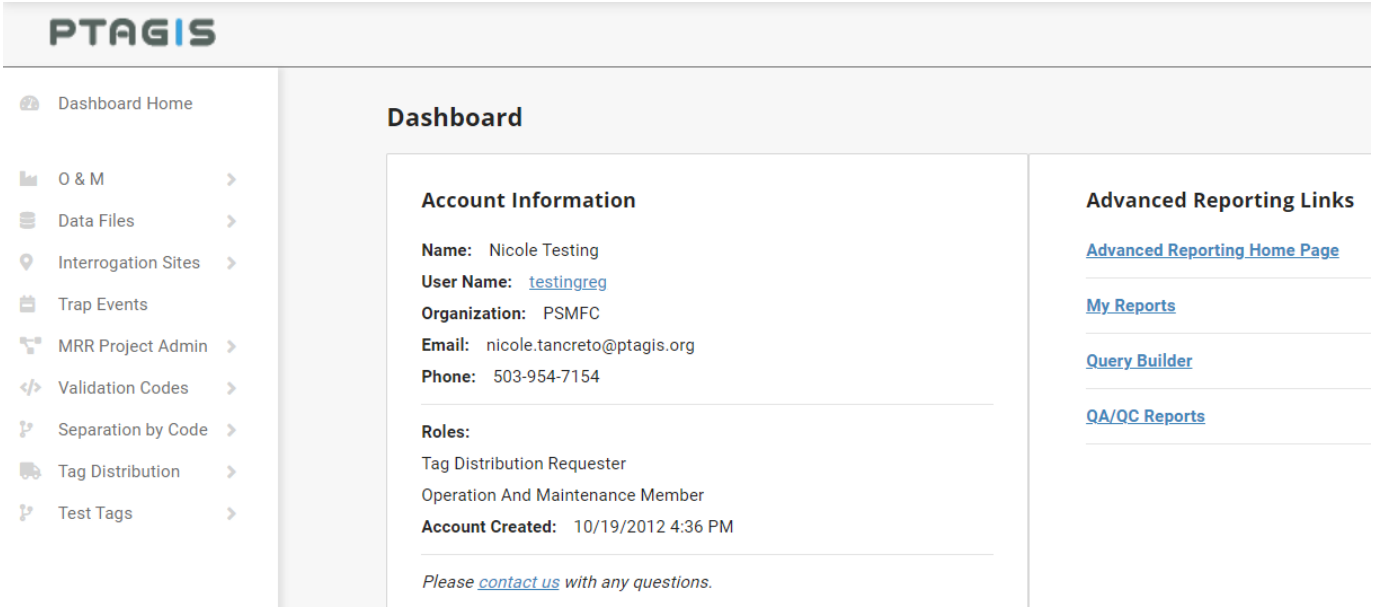

Figure 2. Dashboard of the new PTAGIS website.

The first time you log in you will need to verify your email address and password. After you have successfully verified your account, you will be taken to the dashboard automatically. From the dashboard you can access the following features:

- advanced reporting system
- view and download loaded interrogation and loaded MRR data files
- view and download interrogation and MRR files that require action (those that were rejected and have not subsequently been successfully loaded)
- request new validation codes, MRR projects, MRR sites, and tag masks
- request new SbyC projects
- request PIT tags for Fish & Wildlife Program projects
- view and submit event logs for interrogation sites
- view and submit trap events for screw traps and weirs
- view and manage MRR data submitters
- view a summary of the files and records submitted for your MRR project
- search for orphan records associated with your Fish & Wildlife project number
- register test tags
- request to borrow a PIT tag reader for a Fish & Wildlife Program project

The ability to record trap events is a feature recently approved by the PIT Tag Steering Committee that would allow those who run screw traps or weirs to record the operational status of a trap using a PTAGIS MRR site code as the trap identifier.

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Several QA/QC reports are available under the **MRR Project Admin** section of the dashboard: Record Summary and Find Orphans. These reports have been available through the advanced reporting system, but having them available directly on the dashboard may be more useful to project coordinators. If you have suggestions for other information we could provide at a glance for MRR projects, please let us know.

You can now register test tags through the website instead of having to contact us via email. A test tag is one that you intend to use only for testing PIT tag readers or interrogation site equipment operation. Before a tag can be used as a test tag, please verify that there are no previously submitted MRR records with that tag code. Once a tag is registered as a test tag, it will automatically be filtered out of the reporting system if received in MRR or interrogation data.

If you have the need for a PIT tag reader for a Fish & Wildlife Program project, you can request to borrow an HPR Plus or HPR Lite.

We hope the new website design and feature set is useful to PTAGIS community. If you are wondering where to find something on the new site or have any suggestions, please contact us.

2021 Annual PTSC Meeting

NICOLE TANCRETO (PTAGIS Portland Office)

The annual PIT Tag Steering Committee (PTSC) meeting was held online on January 21, 2021. John Tenney from the Portland office and Don Warf from the Kennewick field office presented updates on PTAGIS accomplishments in 2020 and plans for 2021. For more information on those accomplishments and plans, see the presentations linked below.

Portland PTAGIS 2020 Update and Plans for 2021

Field O&M Review for 2020 and Projects for 2021

Gabriel Brooks and Gordon Axel provided an update on the proposal for the NOAA PIT Tag Research & Development project in 2021. Gabriel also gave an update to the PTSC on the progress the Instream PIT Tag Detection System (IPTDS) Subcommittee made during its first year.

Other topics discussed during the meeting include rescheduling the PIT Tag Workshop which was originally going to be held January 2021 to January 2023, testing the new PTAGIS website before rollout, and how best to report the river kilometer values of interrogation sites that have moved up or downstream from the original location.

Please review the meeting notes and contact us or your PTSC representative with any questions or comments.

IPTDS Subcommittee March 2021 Meeting

NICOLE TANCRETO (PTAGIS Portland Office)

The Instream PIT Tag Detection System (IPTDS) Subcommittee held a meeting on March 24, 2021. The subcommittee reviewed the draft document intended to provide site managers a method to produce standard site diagrams for small scale interrogation sites. The proposed method requires only Google Earth and Microsoft PowerPoint to show estimated high and low water lines, antenna arrangement, and direction of water flow over a satellite image of the location. The document also describes how to create a stream bottom profile using measurements at the site and Excel to produce a visual representation of water depth in relation to antenna location and read range.

The subcommittee discussed the possibility of loading device diagnostic and/or environmental data into PTAGIS to provide more information to data users and help site managers maintain sites. The group decided to start with virtual timer tags as these data are already imported into PTAGIS. The group also decided to work on a series of guidance documents that would be available through the PTAGIS website and provide best practices on specific aspects of building and maintaining instream interrogation sites. It was also decided that Gabriel Brooks and Ben Truscott would remain co-chairs for another year. Please see the meeting notes for more details.

PIT Tag Workshop Scheduled for 2023

JOHN TENNEY (PTAGIS Portland Office)

A decision was made at the recent annual PTSC meeting to host an in-person PIT Tag Workshop in the first quarter of 2023. Hosting it any sooner would risk turnout due to current agency travel restrictions, budget uncertainties, and typical field work schedules. We discussed hosting a virtual conference instead, but all agreed it would be difficult to replicate the substantial coordination benefits of an in-person event with vendor booths, posters, and informal discussions between sessions.

To give attendees and presenters plenty of time to prepare, we will announce the precise date, location and format of the workshop this time next year. Please contact your PTSC member if you have any questions or concerns about this workshop.

HPR Plus Firmware v2.00 and P4

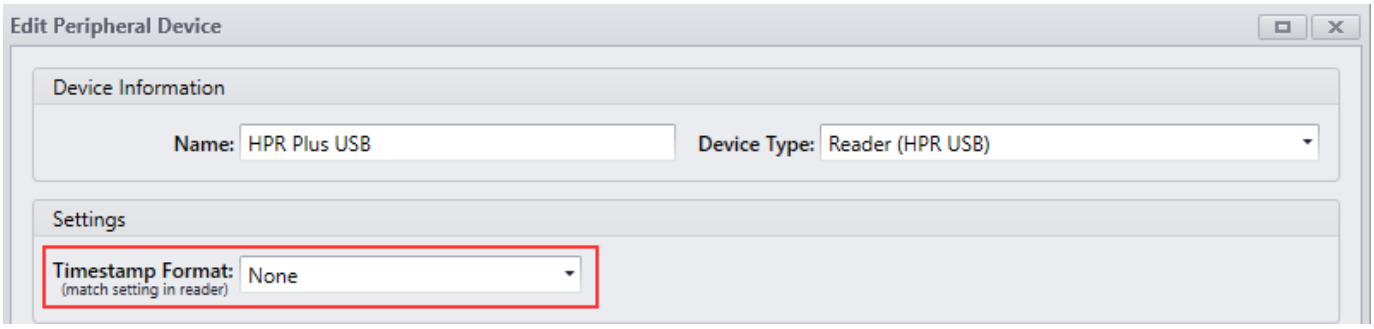
NICOLE TANCRETO (PTAGIS Portland Office)

Biomark released firmware version 2.00 for the HPR Plus portable reader in May 2020. If you use your HPR Plus reader with P4 and decide to upgrade the firmware you may need to make some changes in P4, depending on how you have the reader configured.

One of the changes in the v2 firmware is the removal of the USB-Serial legacy communication mode. This allowed the HPR to communicate with the computer (and P4) through a virtual serial (COM) port. If you had your HPR Plus configured in P4 with a **Device Type** of **Reader (Serial)** and you connected it to the computer using the USB cable, then you will need to change the Device Type to **Reader (HPR USB)** after the firmware upgrade. If your Device Type is set to Reader (Serial) and you connect using Bluetooth, then you do not need to make any changes.

Something to be aware of when upgrading the firmware is that the **Tag Record Format** on the HPR Plus device may get reset from **Full** to **Tag Only**. This may cause parsing errors in P4 when a PIT tag is scanned because it is expecting a time stamp to be part of the scanned tag message. If this occurs you have a couple of options:

- You can set the Date/Time format in P4 for the HPR Device to None. This means that P4 won't look for or use the timestamp stored with the tag on the device when it is sent to the computer.



OR

- You can change the Tag Format on the HPR device itself back to Full, so it sends the time stamp and GPS coordinates along with the tag code. The Tag Record Format setting can be found in the HPR by navigating to **Menu > Settings > Tags Detection.**

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PIT Tag System Upgrades at Bonneville Dam

SCOTT LIVINGSTON / DON WARF (PTAGIS Kennewick Office)

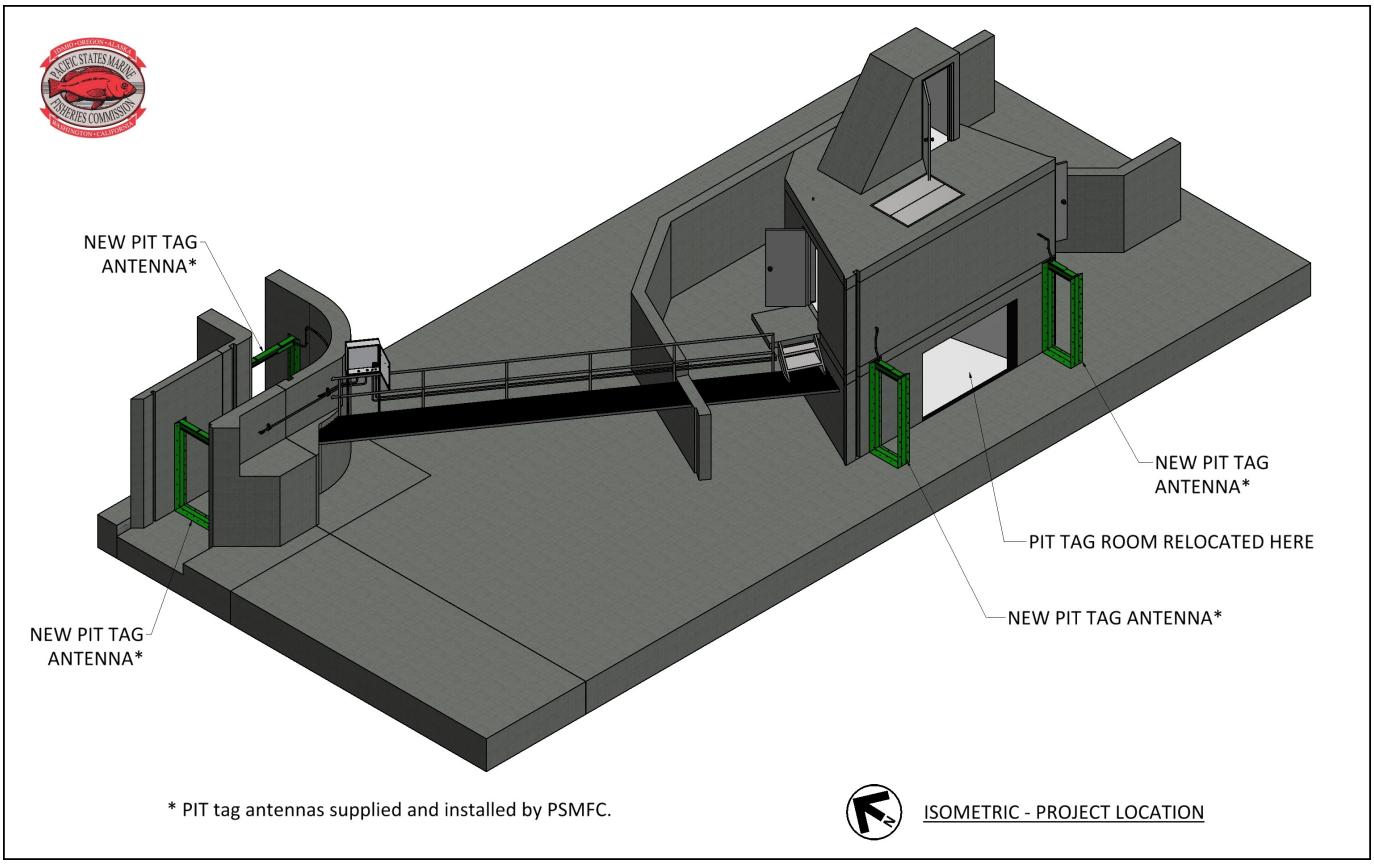

Figure 3. Conceptual design for new antennas at BO2, provided by Alan Brower- Kennewick PTAGIS.

Beginning in January of this year, the PTAGIS O&M field crew successfully installed new thin-body, ferrite tile antennas in the BO2 Upstream Migrant Transportation (UMT) channel and the counting window.

To ensure proper fit of the antennas in the new locations, grinding of the concrete and on-the-fly modifications to the lamprey ramps were required due to irregularities in the UMT and counting window locations.

Post installation, the antennas were performance tested prior to the ladder water-up date in late February. This was necessary in order to make any corrections to tuning at the antennas. Performance and characteristics data collected was reduced due to a short in-water work window, but indicated the antennas were performing as expected.

The UMT antennas are currently operating with a temporary power source provided by the USACE Bonneville personnel. PSMFC-PTAGIS provided a temporary data collection platform near the UMT to collect not only tag data, but noise information and other electrical parameters that assist in determining the health of the system.

Currently, the project is on hold waiting for funding to complete the last phase of the project. This funding will allow the Bonneville project personnel to complete required infrastructure for the PIT tag data collection room and communications.

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Figure 4. Inside BO2 UMT antenna.

Figure 5. Upstream BO2 counting window antenna.

In January of this year, and in conjunction with the BO2 project, the original solid body antennas in the serpentine weirs of the Washington Shore ladder were replaced with newly designed slot antennas making use of a cable designed under the NOAA R&D project. As stated in a previous news article, the original antennas are near end of life status and are unrepairable.

With crane and ground support from the Bonneville project, all four Washington Shore (BO4) antennas were successfully replaced, with minimal to no modifications to the existing infrastructure.

Current 2021 year to date detection efficiencies for the new antennas are above 99.5 percent. It should be noted, YTD maintenance visits required on these newer antennas have been reduced to near zero visits.

PSMFC-PTAGIS would like to thank the Bonneville project fisheries and maintenance personnel for going above and beyond in support of the two antenna installation projects.

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Barge Load Antennas Installed and Detecting for 2021

DARREN CHASE (PTAGIS Kennewick Office)

Installation

The installation began in December 2020, as stated in the November 2020 PTAGIS Newsletter, and was completed at all three sites in March of 2021. PSMFC installed all the infrastructure for electronics, communications and antennas while the USACE helped with infrastructure for new PVC piping that was required at each site. PSMFC utilized a new technology at Lower Granite Dam and Little Goose Dam to minimize the cost of the installations by using a wireless Ethernet antenna system from Ubiquity (figure 6).

Figure 6. Ubiquity wireless ethernet antennas and electronics enclosures at Little Goose Dam.

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Figure 7. Ubiquity wireless ethernet antennas at Little Goose Dam.

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Figure 8. Ubiquity wireless ethernet antenna at Lower Granite Dam barge dock.

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Figure 9. Ubiquity wireless ethernet antenna at Lower Granite Dam Juvenile Facility.

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Barge Load Antennas Installed and Detecting for 2021

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Daily barging began on April 23 and ended on May 17. Every other day barging began on May 19 and concluded on June 20. Early checks of the systems indicated that they were operating with overall efficiencies between 70-80% with the exception of the direct barge load line at Little Goose. PSMFC investigated the reason and found that the shield design would have to be changed to improve field strength. New shields were quickly designed and installed. Although numbers improved, PSMFC is still looking at a different shield and antenna design to improve the overall detection efficiencies of this system.

Performance

Since the barge load season has come to a conclusion, the overall efficiencies of the systems at Lower Granite and Lower Monumental could be roughly calculated using the detections from raceways and sample monitors from April 23 to June 20. At Lower Granite, the amount of fish that were tagged and released by Tiffani Marsh were included.

GRJ	Detections	Efficiency
Raceway East (71-72)	3,017	
East Raceway 10 (31-32)	1,660	
Tiffani Marsh Tags	10,918	
Total	15,595	
Barge Load Line (61-62)	12,662	81.20%
Antenna 61	10,618	68%
Antenna 62	10,395	66.70%

Figure 10. Barge load antennas efficiency for the 2021 season at Lower Granite Dam.

LMJ	Detections	Efficiency
A Raceway (11-13)	418	
B Raceway (21-23)	1472	
Sample	223	
Total	2113	
Barge Load Line (71-72)	1687	79.80%
Antenna 71	1272	75.40%
Antenna 72	1317	78.10%

Figure 11. Barge load antennas efficiency for the 2021 season at Lower Monumental Dam.

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Barge Load Antennas Installed and Detecting for 2021

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Little Goose efficiency is difficult to estimate for the entire season due to the multiple paths the fish can take from the separators to the barge. When a barge is getting loaded from the raceways, the fish travel from the raceways to the barge in a line that is monitored by antennas 61 and 62. When a barge is getting direct loaded, the fish from the A-Separator travel to the barge in the line that is monitored by 31 and 32 and fish from the B-Separator travel to the barge in the line that is monitored by 61 and 62. Periodic monitoring of the detection efficiency during the season can be done when the exact times are known for loading from the raceways vs direct loading. Several estimates were calculated during the season showing antennas 61 and 62 to be in the 80% efficiency range and antennas 31 and 32 in the 30% range. Factors such as tag collision, orientation and velocity are especially challenging for the barge load antenna system. PSMFC will continue optimization efforts during the offseason to reach the highest possible detection efficiencies for all of these systems.

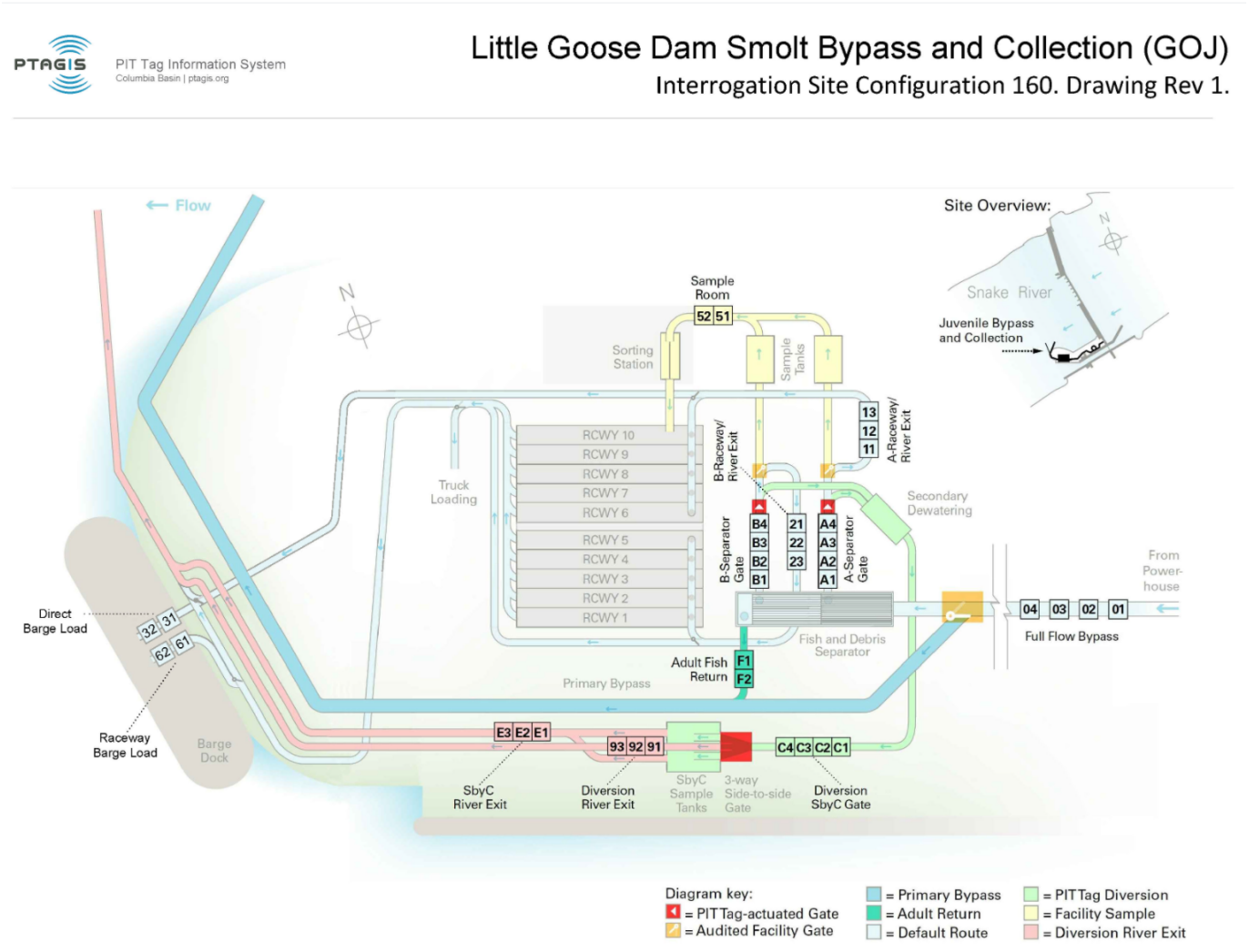

Figure 12. Little Goose Dam Smolt Bypass and Collection site configuration diagram showing new barge load antennas.

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Figure 13. Barge load antennas at Lower Granite Dam.

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Figure 14. Electronics enclosures and barge load antennas at Little Goose Dam.

Figure 15. Direct barge load antennas at Little Goose Dam.

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Barge Load Antennas Installed and Detecting for 2021

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Figure 16. New PVC pipe with barge load antennas at Lower Monumental Dam.

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Figure 17. Electronics enclosure for barge load antennas at Lower Monumental Dam.

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