



PIT Tag Information System Columbia Basin

Newsletter

October 2018
Volume 16
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.

Contributors for this issue include:

SCOTT LIVINGSTON
slivingston@psmfc.org

JENNIFER LUNDY
jlundy@psmfc.org

KIRSTYN MCKAY
kirstyn.mckay@biomark.com

NICOLE TANCRETO
ntancreto@psmfc.org

JOHN TENNEY
itenney@psmfc.org

DON WARF
dwarf@psmfc.org



A Fisheries Data Project of the Pacific States Marine Fisheries Commission

IN THIS ISSUE

1

[Reminder: Support for Tagging Software P3 Ends January 1, 2019](#)

2

[HPR Plus Firmware and BioTerm Technical Bulletin](#)

3

[P4 Update and Expiration of Old Versions](#)

4

[Annual PIT Tag Steering Committee Meeting Scheduled for January 2019](#)

5

[Draft PIT Tag Specification Published for Comment](#)

6

[Dual Mode Detection Enabled at Snake, Columbia, Yakima and Klickitat River Adult Fish Ladder Interrogation Sites](#)

7

[PTAGIS Field Operations 2018](#)

8

[PTAGIS Website Redesign – Community Forums Feedback Requested](#)

Reminder: Support for Tagging Software P3 Ends January 1, 2019

NICOLE TANCRETO (PTAGIS Portland Office)

Beginning January 1, 2019, PTAGIS will discontinue support for P3 tagging software and no longer accept data in the P3 file format. Please see the initial announcement in Article 2 from the [April 2018 newsletter](#) for more details. What this means for users:

PTAGIS will no longer accept tagging files in the P3 format

PTAGIS will no longer accept tagging files via email submission

Users may continue to use P3 but will need to import resulting files into P4 for submission to PTAGIS

PTAGIS will no longer provide technical support for P3

If this will cause undue hardship to your program, please [contact PTAGIS](#) as soon as possible. ☺

HPR Plus Firmware and BioTerm Technical Bulletin

KIRSTYN MCKAY (Biomark)

HPR Plus Firmware

To ensure your HPR Plus reader(s) are operating at optimal performance it is recommended that all readers be updated (flashed) with the most recent firmware release (v1.17). The Release Notes below outline v1.17 improvements and fixes. If you are having any performance issues with your reader(s) please contact Biomark. They will be happy to review your reader(s) hardware and firmware configurations and recommend the necessary steps to ensure your readers are updated and performing optimally.



HPR Plus Firmware Update v1.17 Release Notes

October 15, 2018

- Improved USB connection, in both USB serial mode and native USB (HID) mode, to address issues with data download, where downloading a file from a reader caused malformed and/or missing tag records in the receiving file, even at low baud rates. The tag code file(s) on the reader were not impacted by this issue.
- Optimized Bluetooth driver configuration and improved Bluetooth serial protocol to prevent loss of connection during data download.

CONTINUED →

[HOME](#)

HPR Plus Firmware and Bio Term Technical Bulletin

CONTINUED FROM PAGE 2

Updating HPR Plus Firmware Guidelines

The firmware is available for download from the Biomark website: [HPR Plus Update](#)

The firmware update is done by connecting a flash drive containing the firmware file to the HPR Plus USB port. Please refer to HPR Plus User Manual page 9 for the procedure.

As a precaution, download all tag IDs contained in the reader's memory before initiating the update process.

It is recommended you take a note of any customized reader settings prior to the firmware update.

Important!

Please note that in the next HPR Plus firmware release USB serial (legacy) mode will no longer be supported and HPR Plus readers will only communicate in Native USB (HID) mode. Please plan for associated hardware upgrades as necessary. Bluetooth communication will not be affected.

BioTerm Software

To ensure communication data integrity it is recommended to use recent BioTerm software release (v1.19.2). The Release Notes below outline v1.19.2 improvements and fixes.

BioTerm Software Update v1.19.2 Release Notes

October 12, 2018

- Implemented FIFO buffer for HPR Plus Native USB (HID) mode to prevent loss of communication data.
- Implemented FIFO buffer for standard serial port communication mode for all types of connected hardware.
- Implemented line buffer for terminal window to display the last line entirely, while application continues receiving data and scrolling down the terminal window.
- Reworked terminal window scrolling method to achieve smoother operation.

Updating Software Guidelines

BioTerm checks for availability of an update automatically every 2 weeks upon startup and notifies a user if a new version is available.

To manually check for an update, select **Help > Check for Updates**.

For technical assistance please contact the Technical Services Department of Biomark

(208) 275-0011 or email customerservice@biomark.com. 

[HOME](#)

P4 Update and Expiration of Old Versions

NICOLE TANCRETO (PTAGIS Portland Office)

The latest version of P4, v1.22, was released on September 28, 2018. Since the initial production release of P4 two years ago, we have released 12 new versions. With each new version multiple bugs have been fixed and community-requested features have been implemented. Versions earlier than 1.15 contain multiple bugs that can cause issues when using P4, so **we will be expiring support for versions 1.10-1.14**. If you have one of these early versions of P4 installed, it will continue to function, but you will be unable to submit data to PTAGIS until you upgrade. If you experience a technical issue with one of these versions, we will be unable to provide technical support until you upgrade to the latest version.

Some of the new features that were added to P4 during 2018 are listed below. As always, complete [release notes](#) can be found on the [P4 page](#).

Support for External GPS Units (v1.22)

P4 has included the ability to automatically enter latitude/longitude coordinates from the Biomark HPR Plus reader since the beta release, but now includes the ability to do the same thing from an external GPS unit. The unit must be able to communicate over a virtual serial port, which is possible with most USB and Bluetooth GPS units, and send data in the NMEA standard format. If an external GPS unit is connected to P4 and enabled in the active Profile, latitude and longitude coordinates will be entered automatically when a new tag code is scanned, or for cases where no PIT tag is scanned, when the record is accepted.

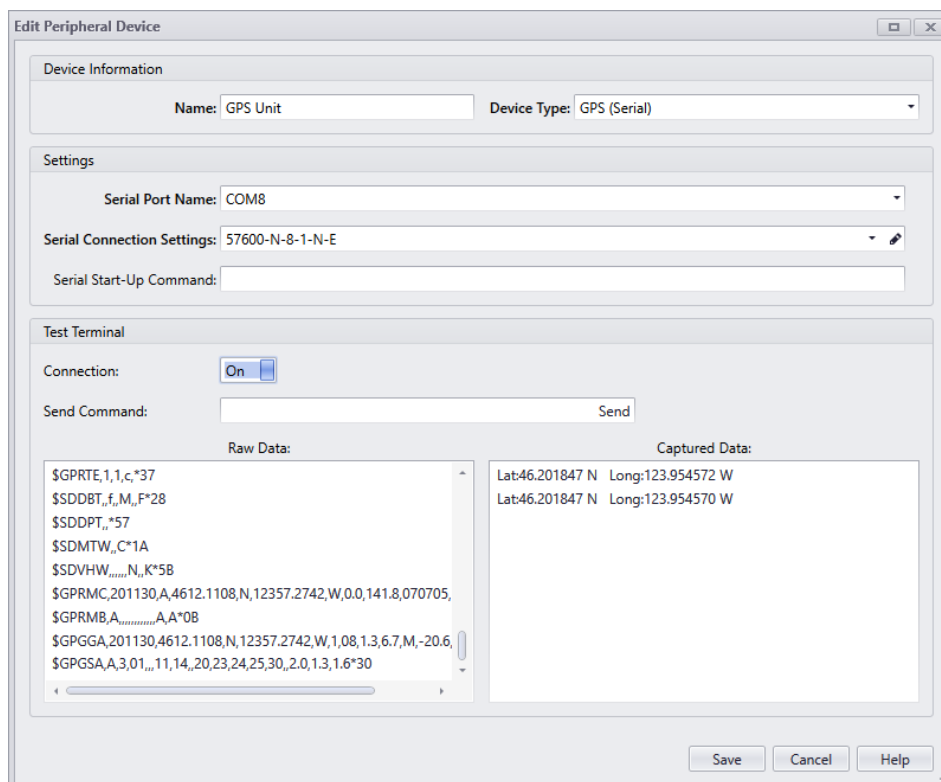


Figure 1. Peripheral Device configuration of external GPS unit.

CONTINUED →

[HOME](#)

P4 Update and Expiration of Old Versions

CONTINUED FROM PAGE 4

Update Records based on a List of Tags (v1.22)

The **Dot-out Records from Tag List** feature has been changed and renamed to **Update Record from Tag List**. This feature now allows for records that match the tag codes in the selected Tag List(s) to be dotted-out **AND/OR** updated by values stored in a Repeating Value. Previously, dotting out records was the primary feature, but now you can choose to dot out records, or update records, or do both at the same time.

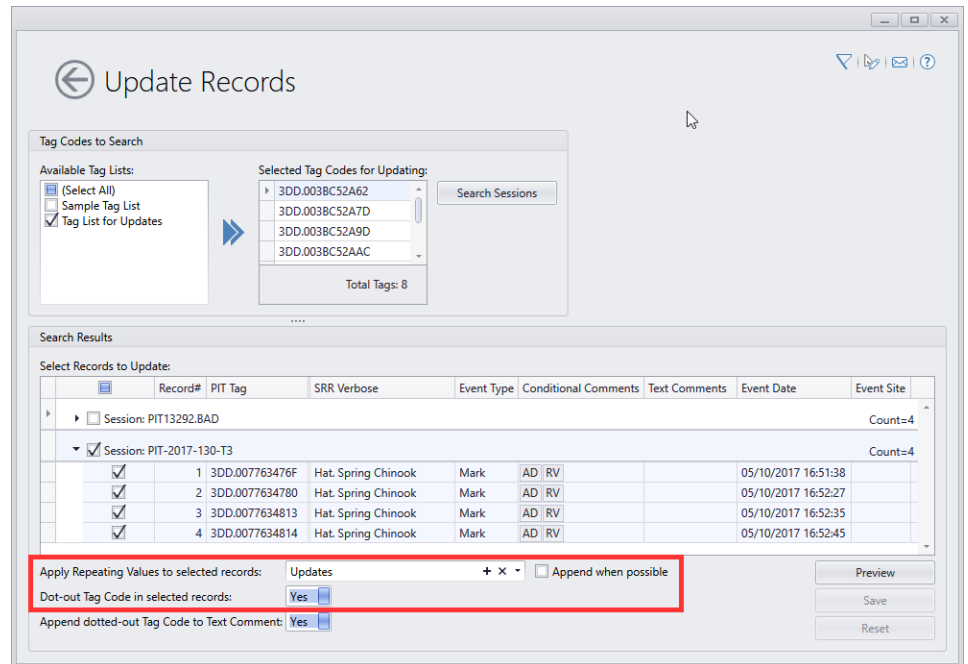


Figure 2. Update Records from Tag List tool. Options to update and/or dot-out matching records are shown in the red box.

Addition of a History Panel to Data Entry (v1.21)

The History panel is a new panel available to display during data entry. It shows all records from the current session in a table. The fields displayed in the table are customizable and the panel can be docked or floating, just as any of the other data entry panels are.

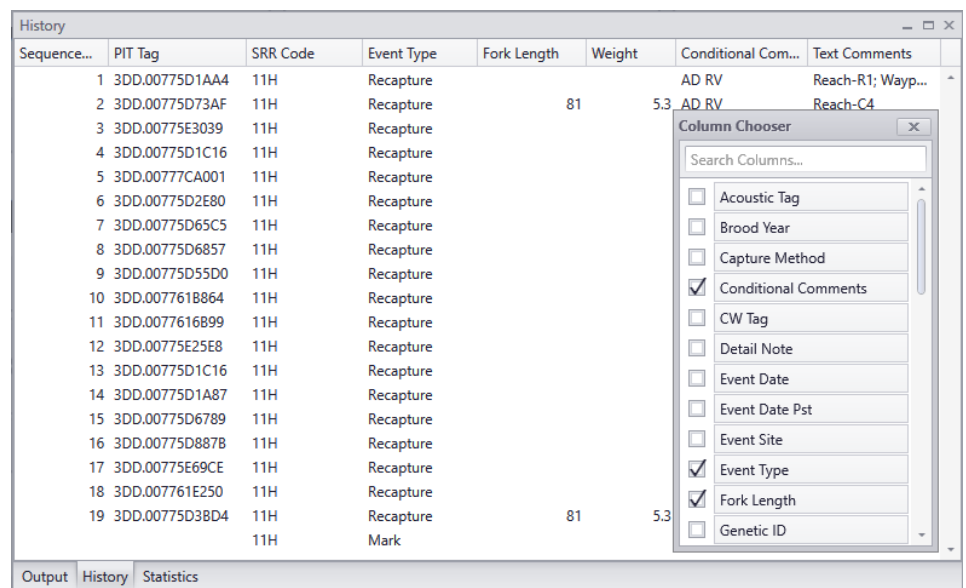


Figure 3. History panel showing the Column Chooser.

CONTINUED →

[HOME](#)

P4 Update and Expiration of Old Versions

CONTINUED FROM PAGE 5

Tag Actions Can Be Applied to Imported Data (v1.21)

Tag Actions can now be applied when importing records from a tag reader or a CSV file. To use a Tag Action during data import, it needs to be active in the Profile selected in the import screen.

Figure 4.

Import delimited file screen with the options to apply Tag Actions from the associated Profile shown in red box.

PIT Tag	Release Site	Release Date
3D9.1C2DD48120	CJRAP	3/28/2012 4:00:00...
3D9.1C2DD574BA	CJRAP	3/28/2012 4:00:00...
3D9.1C2DD4E874	CJRAP	3/28/2012 4:00:00...
3D9.1C2DD542FA	CJRAP	3/28/2012 4:00:00...
3D9.1C2DD6A6CF	KOOS	3/29/2012 9:34:00...

Implemented Generic Peripheral Device (v1.20)

Developed in collaboration with Big Fin Scientific to provide a direct interface between a fish board and P4, the generic device allows advanced peripherals to control P4 much like a digitizer board. To use this feature, a device needs to be capable of sending P4-specific commands via serial port. 🌀

Figure 5.

Peripheral Device configuration for a generic device.

Raw Data:

```
Successfully opened connection to COM15
PITTag:384.3B23984CF0
SetFieldValue:SpeciesRunRearType=13U
SetFieldValue:Length=71
SetFieldValue:Weight=3.5
SetFieldValue:LifeStage=Juvenile
SetFieldValue:ConditionalComments=AI
SetFieldValue:ConditionalComments=FU
```

Captured Data:

```
Command: PITTAG Parameter: 384.3B23984CF0 Field Value:
Command: SETFIELDVALUE Parameter: SpeciesRunRearType Field Value: 13U
Command: SETFIELDVALUE Parameter: Length Field Value: 71
Command: SETFIELDVALUE Parameter: Weight Field Value: 3.5
Command: SETFIELDVALUE Parameter: LifeStage Field Value: Juvenile
Command: SETFIELDVALUE Parameter: ConditionalComments Field Value: AI
Command: SETFIELDVALUE Parameter: ConditionalComments Field Value: FU
```

Annual PIT Tag Steering Committee Meeting Schedule for January 2019

NICOLE TANCRETO (PTAGIS Portland Office)

The annual PIT Tag Steering Committee (PTSC) meeting is tentatively scheduled to be held on January 25, 2019. The annual meeting provides an opportunity for PTSC members and PTAGIS staff to review accomplishments from the previous year, decide on priorities for the coming year, and to discuss any issues of concern to the PTAGIS community. The agenda is still in flux at this time, but is expected to include the following topics:

- Finalizing the PIT Tag Specification (see next article for more information)
- Instream interrogation site metadata and data management
- Summary of Portland office 2018 accomplishments and 2019 plans
- Summary of Kennewick office 2018 accomplishments and 2019 plans

If you would like to bring any issues to the annual meeting, please contact your [PTSC representative](#) or [PTAGIS](#) to discuss your concerns. ☺

Draft PIT Tag Specification Published for Comment

NICOLE TANCRETO (PTAGIS Portland Office)

The PIT Tag Specification Document describes the specifications and requirements for submitting data to PTAGIS. The most recent version of the spec doc (as it is commonly known) has been out of date since the release of P4. The replacement specification will be a living document published on the PTAGIS website. A draft has been in review by the PTSC for several months, and we are now releasing it to the wider community for review. The goals for the document are to provide an overview of PIT tag data and PTAGIS for new users and data contributors; to provide detailed file specifications and methods for submitting data; and to provide definitions and expected value ranges for PIT tag data.

The major sections of the specification include:

1. Introduction – overview of PIT tag data and tools
2. Specifications – data field and file specifications for tagging and interrogation data
3. Submissions – methods for submitting data to PTAGIS
4. Sites and Validation Codes – defines site, project, and validation codes
5. Change Log – links to previous specification documents and changes made to each published version of the online specification document

Please review the [draft PIT Tag Specification](#) and contact your [PIT Tag Steering Committee](#) representative or [PTAGIS](#) with any comments or suggestions. ☺

Dual Mode Detection Enabled at Snake, Columbia, Yakima and Klickitat River Adult Fish Ladder Interrogation Sites

DON WARF & SCOTT LIVINGSTON (PTAGIS Kennewick Office)

After a thorough and successful evaluation by NOAA statisticians and PTAGIS staff, the PTAGIS O&M reports and statistical analysis agreed that detection efficiency for FDX tags does not appear to be impacted by dual-mode operations. Based on these conclusions and support of the PIT Tag Steering Committee, PTAGIS technicians began permanently enabling dual-mode at all PTAGIS maintained adult interrogation sites that use dual mode capable transceivers. As of October 2018, all sites other than the John Day ladders are currently operating in dual-mode.

After enabling dual-mode detection, problems with the synchronization between transceivers was discovered, therefore requiring a transceiver firmware update by the manufacturer. PTAGIS staff worked with the manufacturer of the transceivers to correct this issue. It was then discovered the new firmware formatting was incompatible with M4 data collection software. PTAGIS software engineers then made modifications to the application to restore compatibility.

The John Day ladder system will remain in FDX mode only until January of 2019 in order to determine a baseline detection efficiency in 2018. Post evaluation, dual-mode will be enabled at both adult ladders, JO1 and JO2.

Background from the [April 2018 newsletter](#):

“Dual-mode allows the reading of both full duplex (FDX) and half-duplex (HDX) tags without impacting detection efficiency of either tag. These actions were approved by the PIT Tag Steering Committee (PTSC) to assist lamprey researchers and encourage the continued use of HDX tags in lamprey. This will help to alleviate the possibility of lamprey tagged with FDX tags attaching to antennas and blocking all other detections of FDX tags.”

For more information on potential impacts to salmon research from the use of FDX tags in lamprey, reference the article in the [September 2017 newsletter](#)

Possibility of enabling dual-mode on full flow bypass systems.

Pending further technical review and evaluation, dual-mode operation is being considered on the full flow bypass systems at COE juvenile fish facilities. These systems are instrumented with FS2020 transceivers, but lab and field testing is needed to determine if dual-mode is possible at these locations. This would allow for the detection of juvenile lamprey tagged with HDX tags.

If it's determined that FDX salmon detections won't be affected, any change over to dual-mode on these types of systems would likely not to occur until 2019.

Below is a list of dual-mode enabled transceivers by site:


CONTINUED →

[HOME](#)

Dual Mode Detection Enabled at Snake, Columbia, Yakima and Klickitat River Adult Fish Ladder Interrogation Sites

CONTINUED FROM PAGE 8

Site Codes	Antenna Array Description	Antenna IDs	Date Enabled
BO1	Lamprey Passage System	F1, F2	06/15/2018
BO1	Adult Ladder Slots	01, 02, 03, 04	03/30/2018
B02	Lamprey Passage System	F1, F2	05/01/2018
BO4	Lamprey Passage System	F1, F2	05/01/2018
BO4	Adult Ladder Slots	01, 02, 03, 04	03/30/2018
TD1	Adult Ladder Counting Window	01, 02	08/29/2017
TD2	Adult Ladder counting Window	01, 02	08/29/2017
JO1	Adult Ladder Overflows and Orifices	01, 02, 03, 04, 05, 06, 07, 08	Scheduled for Jan. 2019
JO2	Adult Ladder Overflows and Orifices	01, 02, 03, 04, 05, 06, 07, 08	Scheduled for Jan. 2019
MC1	Adult Ladder Counting Window	01, 02	04/02/2018
MC2	Adult Ladder Counting Window	01, 02, 03	04/02/2018
ICH	Adult Ladder Orifices and Slots	01, 02, 03, 04, 05, 06, 07, 08 09, 0A, 0B, 0C, 0D, 0E, 0F, 10	10/12/2018
LMA	Adult Ladder Counting Windows	01, 02, 03, 04	09/17/2018
GOA	Adult Ladder Counting Window	01, 02	09/18/2018
GRA	Adult Ladder Orifices and Slots	01, 02, 03, 04, 05, 06, 07, 08	09/28/2018
LFF	Adult Bypass Channel	01, 02, 03	08/16/2018
PRO	Adult Ladder Counting Windows	01, 02, 03, 04, 05, 06	04/05/2018
ROZ	Adult Ladder	01, 02, 03	04/05/2018

Table 1. Summary of dual mode operations. 

PTAGIS Field Operations 2018

DON WARF & SCOTT LIVINGSTON (PTAGIS Kennewick Office)



Figure 6. New Full Flow System at Lower Granite Dam

O&M Summary

The PTAGIS Operations and Maintenance office in Kennewick is responsible for ensuring that the PIT tag detection systems in main stem juvenile fish bypass facilities and adult fish ladders are functioning at peak performance while those passage systems are in operation. The Kennewick office also monitors and cooperatively maintains Separation by Code (SbyC) hardware at nine of those facilities, allowing researchers to selectively separate PIT-tagged fish as they move through passage facilities. O&M staff also provide technical assistance for multiple other projects involving the installation or development of new detection systems, such as the new antennas at the John Day Dam adult fish ladders and the Lower Granite spillway detection project.

CONTINUED →

[HOME](#)

PTAGIS Field Operations 2018

CONTINUED FROM PAGE 10

Juvenile fish bypass facilities on the Snake and Columbia Rivers began operating in March and April. Detection efficiency rates for 2018 are being kept at or above previous year's rates of greater than 99%. The single antenna in the Bonneville Corner Collector is the exception to this with an estimated efficiency rate in the seventies based on NOAA live fish testing using 12mm tags. Separation by Code diversion efficiency rates remain high for 2018 with all diversion gates running above 97%.

Adult ladder detection efficiency also remains high. In dam-to-dam comparisons, all sites maintained an approximate 98 to 99% detection efficiency over a 12 month rolling report period. In the previous newsletter, it was reported that LMA efficiencies were at 97 % due to the raising of the picketed leads that allowed fish to bypass the counting window and not pass through the PIT antennas. Since the decision was made at the May 2017 FPOM Meeting to leave the picketed leads in through November each year, LMA detection efficiencies as of October 2018 have risen to 98.8 %.

Other PTAGIS Field Office Projects for 2018

UPDATE: John Day Adult Ladder PIT Tag Project - South (JO1) and North (JO2) Ladders Complete

In October 2017, PTAGIS upgraded the broadband internet connection that serves not only JO1 and JO2 systems, but the juvenile fish facility as well. This upgrade was necessary as the existing connection was being phased out by the service provider and in jeopardy of being terminated at any time. To accommodate the new service, PTAGIS technicians were required to install two antenna towers, one for the central repeater and another near the JO1 PIT tag building. This service upgrade will help ensure consistent and reliable data files submissions, remote access and long term stability for years to come.

In February 2018, PTAGIS was given occupancy by the USACE allowing PTAGIS technicians to complete installation of power and communications wiring to the transceivers, complete construction and wiring of the PIT tag electronics room and installation of the data collection platforms. Real-time data collection and automated data file submissions for sites JO1 and JO2 began in February, 2018.

JO1 and JO2 PIT tag detections are now reported as observation records.

UPDATE: Lower Granite Dam Juvenile Bypass System Remodel Near Completion

On March 15, 2018, PTAGIS technicians completed the tuning and optimization of the GRJ Full Flow PIT tag detectors. The 3 antennas were fully functional prior to the initial water-up of the new bypass system therefore no PIT tag detections were lost. The new antenna array was integrated into the GRJ data collection platform. Antenna IDs beginning upstream are 01, 02, and 03 respectively. The YTD detection efficiencies for the full flow antenna array is greater than 99 %.

CONTINUED →

[HOME](#)

PTAGIS Field Operations 2018

CONTINUED FROM PAGE 11

UPDATE: Lower Granite Spillway (GRS) PIT Tag Project Postponed.

During the September 2018 FDDRWG meeting, the USACE announced the PIT tag portion of the GRS project would be postponed until fall of 2019. The weekly design and coordination meetings will continue as various technical details are being finalized.

The PTAGIS Kennewick office continues to coordinate with USACE and NOAA personnel as part of the design team on PIT tag detection systems for spillways. PTAGIS staff actively participates in weekly construction meetings and design reviews providing technical expertise and guidance along with providing conceptual CADD drawings for various aspects of the PIT tag portion of the project. These drawing sets help guide the USACE and contractors in the placement of critical components such as antenna conduit routing, PIT tag building layout and electrical requirements. 🌀

PTAGIS Website Redesign - Community Forums Feedback Requested

NICOLE TANCRETO (PTAGIS Portland Office)

We are working on the next version of the PTAGIS website to be released sometime next year. User accounts and most features will be carried over from the current website, but there is one feature we are unsure about continuing – [the community forums](#). They have not been used as much as we hoped, but we have heard from some that forums could be a useful resource, most recently from instream interrogation site managers.

We are looking for feedback from PTAGIS users on the forums as a feature of the website. Would you like to see them brought over to the new site? If so, do you have any suggestions for improving them? If not, is there some other information sharing tool you would recommend? Is there anything we can do to promote use of the forums within the community?

If you have any thoughts to share about the forums, or about the website in general, please contact your [PIT Tag Steering Committee representative](#) or [PTAGIS](#). 🌀