



PIT Tag Information System Columbia Basin

Newsletter

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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:

STEVE ANGLEA
steve.anglea@biomark.com

TRICIA LEDGEWOOD
tledgewood@psmfc.org

KIRSTYN MCKAY
kirstyn.mckay@biomark.com

JENNIFER NIGHBOR
jnighbor@psmfc.org

NICOLE TANCRETO
ntancreto@psmfc.org

JOHN TENNEY
itenney@psmfc.org

DON WARF
dwarf@psmfc.org

IN THIS ISSUE

1

Update on Decommissioning of PTAGIS Web Portal

2

Little Goose: Counting Window PIT Tag Antenna Installation Delayed

3

Thin Body PIT Tag Antennas Successfully Deployed at The Dalles Dam Adult Ladders

4

Ground Breaking PIT Tag Detection System on the Deschutes



Update on Decommissioning of PTAGIS Web Portal

NICOLE TANCRETO (PTAGIS Portland Office)

After careful consideration we have decided to delay the decommissioning of the PTAGIS Web Portal for a few weeks. There are a few key reasons for this decision:

1. To give the PTAGIS user community more time to adopt the new website and reporting system.
2. To provide time for testing and evaluation of new processes for loading interrogation data.
3. To provide time for testing and evaluation of a new transceiver at the Bonneville Corner Collector (BCC).

Please continue to use and test the beta website and reporting system and let us know if any additional functionality needs to be incorporated into either. ☺

Little Goose: Counting Window PIT Tag Antenna Installation Delayed

SCOTT LIVINGSTON (PTAGIS Kennewick Office)

The installation of two PIT tag antennas within the confines of the fish counting window were scheduled to be installed in January or February of 2013. This installation date has been delayed until January of 2014.

Per the antenna manufacturer, some of the “ In Water “ components could not be designed, fabricated and installed prior to the water-up date of the adult fish ladder.

A solicitation by the U.S. Army Corps of Engineers to allow a short and brief post water-up outage was presented to various fish management agencies, but was not approved. This decision officially delayed the project until 2014. ☺

Thin Body PIT Tag Antennas Successfully Deployed at The Dalles Dam Adult Ladders

DON WARF (PTAGIS Kennewick Office)

The Dalles adult ladders are now equipped with thin body ferrite tile PIT tag antennas. The goal of these antennas is a detection rate of near 100% and an uptime of near 100%. The first detections at the dam have resulted in each antenna reading each tag 10+ times, which is an indication of a very robust detection system. The antenna systems were operational prior to water up at each ladder with the east ladder watering up on 2/12/2013 and the north ladder watering up on 3/11/2013.



TD1 downstream thin body antenna

Thin Body PIT Tag Antennas Successfully Deployed at The Dalles Dam Adult Ladders

CONTINUED FROM PAGE 3

Because the antennas are only two inches thick, the antennas were able to be surface mounted into the counting window slots. Hydraulic disruption within the slots is minimized by constructing the antennas into a “speed bump” design. The thin body design also provides for a dramatically lower cost compared to installing standard body antennas that require extensive concrete remodeling and removal of metallic structure. The ferrite tile that makes the thin body antenna possible also allows it to be installed on metal surfaces.



TD2 downstream thin body antenna

Ferrite tile is what makes the thin body antennas possible. This technology was first pioneered by Destron Fearing (now Biomark) engineers for use in trench style antennas. The trench style antennas are targeted for embedding in spillways. The PTAGIS Kennewick staff has taken this technology and applied it to flat plate and thin body pass through antennas.

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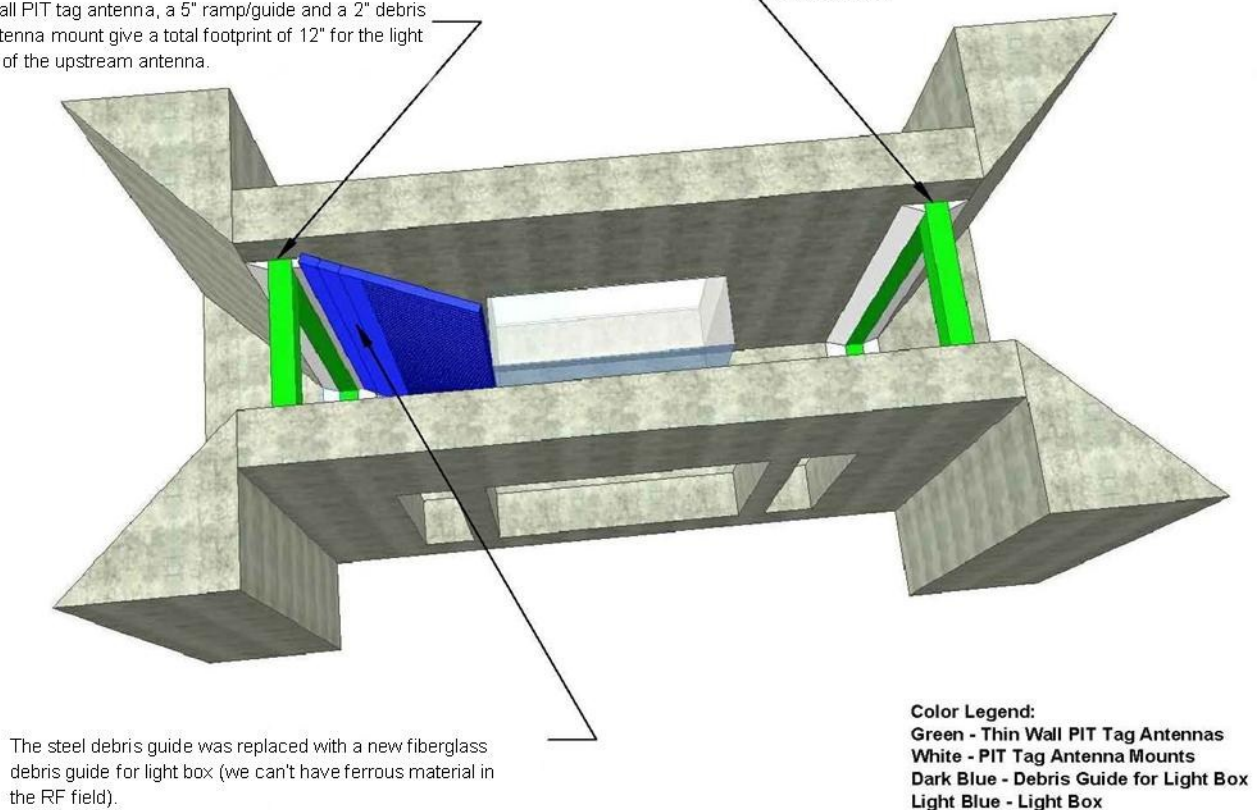
Thin Body PIT Tag Antennas Successfully Deployed at The Dalles Dam Adult Ladders

CONTINUED FROM PAGE 4

The prototype 5" deep thin wall antenna was developed in Kennewick. The production units have a 15" footprint in the counting window slot. Near the debris guide, only a 12" footprint is used at the upstream end of the counting window slot.

5" thin wall PIT tag antenna, a 5" ramp/guide and a 2" debris guide/antenna mount give a total footprint of 12" for the light box side of the upstream antenna.

5" thin wall PIT tag antennas and two 5" ramp/guides give a total footprint of 15". This view shows the two-inch "speed bumps" on the side walls of the counting window channel. (3plcs)



Prototype drawing of 5" deep thin wall antenna

In 2011, the PTAGIS Kennewick staff successfully designed and installed the first ever thin body flat plate antennas. These antennas, built by Biomark fabricators, were installed at Rosa Dam on the Yakima and are in use today. In 2012, PTAGIS Kennewick staff launched the effort to develop the thin body pass through antennas: <http://beta.ptagis.org/docs/ptagis-newsletter-archive/vol-10-no-3-october-2012.pdf?sfvrsn=2>. This effort resulted in the 2013 installation of The Dalles antennas which were also fabricated and installed by Biomark.

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Thin Body PIT Tag Antennas Successfully Deployed at The Dalles Dam Adult Ladders

CONTINUED FROM PAGE 5



PIT tag stationary readers at TD2

The future for thin body antennas is bright. Future U.S. Army Corps of Engineers (USACE) projects include antennas for the Little Goose adult ladder, both adult ladders at Lower Monumental and a single antenna at the Ice Harbor adult fish trap. The single antenna at Ice Harbor will provide for a separation-by-code system to target specific fish for trapping and transport. Other possible projects being discussed are both adult ladders at John Day.

Both of the PIT tag systems at The Dalles (TD1 and TD2 in the database) include fully redundant data collection computer platforms with hourly uploads to the PTAGIS database. The Bonneville Power Administration provided the computers, readers and related electronics. These systems were installed by PTAGIS and are operated and maintained by PTAGIS.

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Thin Body PIT Tag Antennas Successfully Deployed at The Dalles Dam Adult Ladders

CONTINUED FROM PAGE 6



PIT tag system data collection computer platform at TD2

This USACE funded project was supported by an outstanding group of project electricians (Richard Vanhooose and Mike Changar) and biologists (Bob Cordie and Paul Keller) whose positive attitudes and creativity in solving problems made it possible to complete this project on time. The results of these efforts will provide regional fisheries researchers with valuable, low cost, reliable and efficient PIT tag monitoring sites for years to come.

These systems are considered temporary but are being considered as permanent if no disruption to fish passage through the counting window slots is detected. ☺

Ground Breaking PIT Tag Detection System on the Deschutes

STEVE ANGLEA (BIOMARK)

The Confederated Tribes of Warm Springs (CTWS), with funding from the Bonneville Power Administration, installed a PIT-tag detection system near the confluence of the Deschutes and Columbia rivers. The system began interrogating on 14 March, 2013. The antenna array is expected to be a very useful tool for determining straying rates of adult steelhead *Oncorhynchus mykiss* and fall Chinook *O. tshawytscha* returning to spawn, timing and number of migrating bull trout *Salvelinus confluentus* and sockeye *O. nerka* from/to the middle Deschutes River, and it may allow an alternative method or means to validate abundance estimates of Pacific lamprey *Entosphenus tridentatus*.



The work platform in the Deschutes River with Biomark 20' stout antenna secured to the excavator shovel ready for submersion and placement.

The detection system is based on Biomark's new IS1001-MTS Multiplexing Transceiver System. The IS1001-MTS is capable of detecting FDX-B and HDX PIT tags that conform to the ISO 11784/11785 standards. A total of 12 Biomark 20' STOUT antennas, each controlled by a submersible IS1001 antenna control node secured to the antenna were installed. The IS1001 nodes are connected in series and then in turn are connected to an IS1001-Master Controller located adjacent to the array. Use of the IS1001-MTS enables antennas to be separated by as much as 1,000 feet from the Master Controller compared to approximately 160 feet with the FS1001M. A moveable work platform that contained a mini-excavator and dive shack was staged above the array to facilitate working in the deep swift water.

Ground Breaking PIT Tag Detection System on the Deschutes


CONTINUED FROM PAGE 8



A diver places anchors to secure an antenna at the mouth of the Deschutes River.

Construction divers secured the 20' antennas to the substrate, basalt shelf and trenches, using a combination of wedge and duckbill anchors. Cable lengths were adjusted to accommodate ridges of basalt that run in an upstream-downstream orientation within the channel.

Diagnostic and tag detection data will be retrieved remotely using a Campbell Scientific CR1000 data logger and cell phone modem and the data will be uploaded automatically to the PTAGIS database.

The proposed site code for this site is: DRM 

Project Managers:

Cindy Baker, CTWS

Steve Anglea, Biomark

Armin Vogt, DIX Corps

Steven Cook, Northwest

Underwater Construction, LLC

