

PROGRESS REPORT

1999/2000 PTAGIS ANNUAL STATUS REPORT

Grant # 90FG08221, "Columbia River Basin PIT Tag Information System"

BPA Project Number: 90-080-00

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This is the annual report for the PTAGIS project. March 1, 2000 marked the end of the 1999/00 PTAGIS fiscal year. All project activities progressed on schedule.

Objective 1: Operate, Maintain & Enhance the PTAGIS Database System and Data Collection Software

For the 1999 migration year, 1,505,895 tagging records were processed and 7,311,265 interrogation records were processed from all interrogation sites.

The production version of the new Windows based, tagging software (PITTAG2.EXE) was released on April 2, 1999. The new software is required in order to collect the ISO tag codes. For details on this software refer to www.ptagis.org/Software_and_Documentation.

On December 1, 1999, the new Field Data Validation and Load process was implemented. The new system is more robust than its predecessor and implements entity integrity mechanisms that prevent duplicate tagging and release information. In addition the process has been automated and provides better error diagnostics to users who submit incorrect or invalid data sets. In addition, we implemented process to track versions of tagging files submitted by users. This versioning mechanism provides an audit trail of changes to the PTAGIS data set. For audit detail of tagging and release files, see the "File Contents Summary" at www.ptagis.org/Data_and_Reports. Also, see "PTAGIS Newsletter", Vol. 4, No. 1, March 2000 for additional detail.

All site configuration management and remote interrogation site data analysis and maintenance tools (DEA, CEA, IDL, PAP, SCM, etc.) were updated to support the new ISO equipment and changed site configurations. See "Current Coil and Monitor Configurations" at www.ptagis.org/Ptoc_OM.

Data outages at PTOC-supported sites (defined as temporal gaps between the close of one interrogation file and the opening of the next interrogation file) were less than 1% on a site-by-site basis. See the "Current Interrogation File Status Reports" at www.ptagis.org/Ptoc_OM for details on a site-by-site basis.

On April 10, 1999, we eliminated all duplicate tag codes from the primary PTAGIS tagging data table. See "PTAGIS Newsletter" Vol. 3, No. 7, October 1999 for details.

We initiated development for a windows based software tool (MINIMON) that can be used to collect interrogation data from any combination of the new ISO portable readers (FS2001) or the ISO stationary readers (FS1001). We anticipate a three-year development effort to release a production version of this software, which will replace the DOS based version (MULTIMON) that NMFS has been developing since 1993.

Data system operations proceeded as expected throughout the fiscal year. However, on January 17, a power outage, which lasted longer than the capacity of our backup power system, destroyed a power supply on the A5000 storage array and corrupted a RAID-5 device. The problem cause several system interruptions for PTAGIS users as we made hardware and software repairs. PSMFC Computer Services is upgrading our backup power supply to minimize the effects of power outages in the future.

On December 28, 1999 a 126GB, Sun A5000 StorEdge disk storage array was installed on the PTAGIS database server, Sockeye. This brings data storage capacity on the array to 209GB. All system drives on the server are mirrored and all data drives are RAID-5. System hardware and software upgrades are performed between October and January to minimize impact to users and data collection.

Objective 2: Operate and Maintain Separation by Code System (SbyC)

We assumed primary responsibility for the operations and maintenance of the SbyC system from the NMFS research and development team. NMFS provided training to PTOC at various field locations. To assist us in this effort, we established a protocol for users of the SbyC studies to request PTOC support (see internet link at the end of this section).

At Lower Granite dam we provided SbyC support for BPA Project 8712702 - Comparative Survival Rate Study (CSS) of Hatchery Pit Tagged Chinook, and for a Corps (Anadromous Fish Evaluation Program - AFEP) study run by Jim Congelton.

At Lower Granite Adult ladder, we supported the CSS study and the AFEP transportation study.

At Little Goose and Lower Monumental, we supported the CSS Study.

At John Day, we supported the AFEP study being conducted by Bill Lavoie and the AFEP screen evaluation study conducted by Mike Langsley.

At Bonneville 2 we supported an AFEP study conducted by Bill Lavoie and another conducted by Lyle Gilbreath.

See the "Separation by Code" links at www.ptagis.org/Ptoc_OM for more details.

Objective 3: Install, Operate & Maintain Interrogation Systems in Field Locations

Operations and maintenance of interrogation systems at PTOC supported interrogation sites proceeded as planned during the 1999/2000 fiscal year. See "Facility Event Logs" at www.ptagis.org/Ptoc_OM for operational details.

One innovation, which we implemented at McNary and Prosser as part of a production test, was the use of LapLink to provide a 'remote services' interface to the computers that collect PIT tag data at those facilities. This functionality allows us to troubleshoot, operate and maintain the data collection computers at these dams from our headquarters or field offices.

Between September 1 and September 7, 1999, we de-commissioned and de-installed the 400kHz PIT tag interrogation systems on the Snake River. Between October 4 and October 11, 1999 we de-commissioned and de-installed the 400kHz interrogation systems at McNary and John Day dams.

On October 6, 1999 an intruder hacked into our data collection platform (which is connected to the Corps of Engineers LAN) at the Lower Granite Dam Adult Trap interrogation site (GRA).

Subsequent to this attack, we worked with Tom Seiner and his Telecommunications staff in the Walla Walla district Corps of Engineers to implement a secure firewall between our machines on

the Corps network and the outside world. No data were lost or lasting damage was done as a result of the intrusion.

We installed the new ISO based PIT Tag Interrogation systems at Lower Granite, Little Goose, Lower Monumental, McNary, John Day and Bonneville dams by March 1, 2000 – in time for the 2000 migration season. Additional funding to PTOC to perform this work was provided through BPA PO 99AC19084 and Contract 00BI22152 in support of BPA Project 9701000 - PIT Tag System Transition. In addition, we provided management and technical consulting services to the Corps of Engineers to support the ISO Transition Infrastructure installation at Lower Granite, Little Goose, Lower Monumental and McNary dams. See “ISO Transition Information” at www.ptagis.org for more detail.

We integrated two NMFS experimental gate systems into our production interrogation systems. At Lower Granite Dam, electronics for the NMFS experimental site, GRX, was incorporated into the production interrogation and separation system controlled by a single programmable logic controller (PLC). We did a similar reconfiguration at Little Goose with the NMFS experimental system called GOX. The new configurations provide a central operations and maintenance control point that allows for more streamlined troubleshooting and O&M control.

We standardized PLC gate controls. The same data terminal access module (DTAM), and switches have been installed at John Day and Little Goose to control not only “yes/no” pit tag diversion, but separation by code (SbyC) diversion and Smolt Monitoring Program sub-sample collection. These systems are based upon the implementations that were installed at the projects on the Snake River. We intend to implement the sub-sample collection mechanisms in use at Bonneville and John Day, at the Snake River projects and McNary in the future.

Again, we continued to work closely with National Marine Fisheries Service (83-319-00) to ease the transition of research and development (R&D) 'deliverables' to PTAGIS for operations and maintenance (O&M). In July, 1998, NMFS and PSMFC agreed to transition: 1) support for lower Columbia River production interrogation systems to PTAGIS; 2) coordination and O&M activities required to support Separation by Code (SByC) to PTAGIS, and; 3) software support and development of the MULTIMON.EXE program to PTAGIS (reference July 20, 1998 letter from Michael Schiewe -- NMFS to John Rowan -- BPA).

We assumed responsibility for operations and maintenance of the lower Columbia River production interrogation systems during the 1999 out-migration. However, due to NMFS “special requirements” (starting and stopping the interrogation data collection platform – and other ‘mysterious problems’) we turned over support for the Bonneville 2 interrogation platform to the NMFS research and development team.

Separation by Code responsibilities are addressed in the previous section of this report.

In February 2000, NMFS released version 7 of MULTIMON and so we continue to wait to begin the start of the one year code freeze of this software required before PTOC begins maintenance of this software.

Objective 4: Administration, Management and Coordination

PTAGIS Newsletters were published and distributed in July and October.

In order to support the additional field work on the Lower Columbia transferred from NMFS research and development (see above) we hired an additional Field Technician to work out of our Kennewick Field Office. Darren Chase has made himself a valuable member of our O&M team with his experience and technical expertise in electronics troubleshooting.

We continue to support various innovative research program including the Avian Predation studies, the PIT Tag Estuary Trawl, volitional releases at hatcheries and acclimation ponds (Rapid River, Jack Creek, Clark Flat and Easton). In addition, we provide technical support to ODFW in their work detecting PIT tags at the Sullivan Dam on the Willamette River, and Chelan Co. PUD at Rocky Reach Dam.

We provided ad-hoc telephone support for user calls on a daily basis.

We updated, published and distributed the "1999 PIT Tag Specifications Document", and the "PIT Tag Marking and Procedures Manual". See www.ptagis.org/Software_and_Documentation for HTML and PDF versions of these documents.

We produced and conducted the 2000 PIT Tag Workshop held at Skamania Lodge on January 11-14, 2000. See the "PIT Tag Workshop 2000 Presentation Abstracts" at www.ptagis.org/Software_and_Documentation for the list of presentations conducted at the workshop.

We prepared a new work statement and budget for PTAGIS for the 2000-01 fiscal year.

We produced this annual report.

Objective 4: Additional Support Actions

We procured and delivered 246 ISO based portable PIT tag readers to Fish and Wildlife program tagging projects by August 15, 1999.

As co-chair of the ISO Transition Planning Team, our project played a key role in the successful ISO transition project. Our project has developed project plans, schedule estimates, cost estimates, project budget estimates and Gantt charts to present to the members of the Planning Team for approval. We upgraded the data systems and software infrastructure required. We installed the new electronics at all of the dams. We have consulted closely with electrical and structural engineers from the Corps of Engineers in the development of Plans and Specifications required for the installation of the new ISO system prior to the year 2000 out-migration. We have been one of the points of contact of the Fish Passage Advisory Committee and CBFWA for status and issue reports related to the ISO transition. We have also provided technical advice to John Rowan, BPA's Project Manager responsible for the ISO transition project (97-010-00).

Our project coordinated and managed PIT tag forecasts, procurement and distribution to F&WP projects in conjunction with project 90-080-01. To support this activity, we implemented a new system, Tag Distribution and Inventory. This system provides a mechanism for tracking the disposition of an individual PIT tag from procurement through the lifecycle of a tagged fish. This data is available via the internet when a user requests information about a particular PIT tag code as record type TDI. See "Complete Tag History" at www.ptagis.org/Data_and_Reports (use code 50735D6E2A as an example).

We continued to add reports and user tools to our web site, www.ptagis.org.