

PTAGIS

newsletter

ISO Transition Update

Work is progressing on the transition of our 400kHz PIT tag interrogation system to the new system based upon the International Standards Organization (ISO) specifications, ISO-11784 and ISO-11785.

Infrastructure

The U.S. Army Corps of Engineers has solicited bids for installation of electrical and communications infrastructure required for installation of the new ISO stationary transceiver system. The solicitation also includes construction of access platforms and structure to allow maintenance of the new ISO equipment. The bid opening occurred on Tuesday, July 20, 1999 and selection of a contractor will follow.

PIT tag interrogation systems at Snake River dams will be de-commissioned beginning September 1, 1999. McNary and John Day PIT interrogation systems will be decommissioned beginning October 1, 1999. Electrical

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PITTag2.exe Release

The new PITTag2.exe program was released to widespread critical acclaim on April 2, 1999. To this point, 41 tag coordinators have submitted 2,814 tag files for a total of 1,022,014 tagging records using the new program.

Response to the PITTag2.exe program has been overwhelmingly favorable, but as with any program of quality and caliber, there are always questions of use and concerns. To address these recurring concerns, we have compiled a list of Frequently Asked Questions (FAQs) regarding the PITTag2 program. The current FAQ sheet is located on page 6. We've also posted the PITTag2 FAQs to our web site at www.psmfc.org/ptagis/Software_and_Documentation/PITtag2/PT2FAQ.htm, and will maintain and update it at this location.

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Whoopee! We're Dupe-Free! (Finally!)

Readers of this Newsletter over the last year, and most of you Tagging Coordinators, are probably painfully aware that the "Tag_Data" table, one of the primary datasets in the PTAGIS database, used to contain multiple references to individual PIT tag codes. It is with great joy and relief that we can report to you that on April 10, 1999, we removed the last of these duplicate tag code assignments from "Tag_Data." This followed a six-month process in which users identified and rectified most of those duplicate tag references within the PTAGIS database. We want to publicly thank all of the people who dedicated significant time and effort to resolving and eliminating those duplicates, and the ambiguities resulting from those multiple codes.

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PIT Tagging Procedures

Background: Earlier this year, the Fish Passage Advisory Committee (FPAC) requested that the interagency PIT Tag Steering Committee (PTSC) standardize its recommended procedures for PIT tagging fish. A subcommittee of the PTSC is currently working to revise, update, and present a standardized set of guidelines that will be accepted and implemented by all agencies and tribes marking fish with PIT tags in the Columbia Basin. To promote compliance and ownership of the updated guidelines among experienced tagging personnel, tag coordinators and project leaders should discuss and review the guidelines presented here with their respective PTSC member. The 1993 Marking Procedures Manual will be updated and made available to the PIT tag community later this year. Once the revised guidelines are accepted and agreed upon by all parties, a training video will be developed and distributed to participating agencies and tribes.

Overview

The following fish handling and PIT tagging guidelines are endorsed by the PTSC and the general fisheries community and are designed to promote proper tagging techniques and consistency in handling fish.

Fish Condition

The fish should be in good health with no indication of a terminal disease. All fish should be anesthetized prior to tagging. Fish obtained from a natural aquatic environment should be held at ambient water temperature in a well-aerated recovery vessel until they recover fully from the anesthetic before they are released back into the water system. In a hatchery setting, feeding should be suspended for two days prior to tagging, and fish should be fed on a maintenance ration for three days following tagging to avoid gut expansion and dislodging the tag through the unhealed needle wound.

Hand Held Injector

The manual tag injector is the system recommended by the PTSC to comply with fish health concerns. A disinfected needle must be used to inject a tag into each individual fish that is tagged. This system employs a 1.00-1.75 inch-long 12 gauge (luer lock) needle, depending on the size of fish being marked, to implant a tag inside the ventral body cavity.

There are two general types of hand-held injectors. One design simply adds a push rod to the plunger and an air relief hole at the base of the syringe body (shown in Figure 1 at right). The second design modifies the plunger to accept a side-mounted thumb pad, which passes through the body wall of the syringe.

The hand held injector system is a modified plastic syringe, which can vary in size from 5 to 10 cm³ depending upon operator's comfort. An air relief hole is required at the needle end of the syringe, or the rubber end of the plunger must be removed so that air is not pushed inside

the fish during tagging. A push rod attached to the end of the plunger pushes the PIT tag through the bore of the tagging needle as the plunger is depressed. When fully extended, the push rod should reach just to the end of the needlepoint. Each injector is loaded by hand, requiring a tag to be manually inserted into the needle.

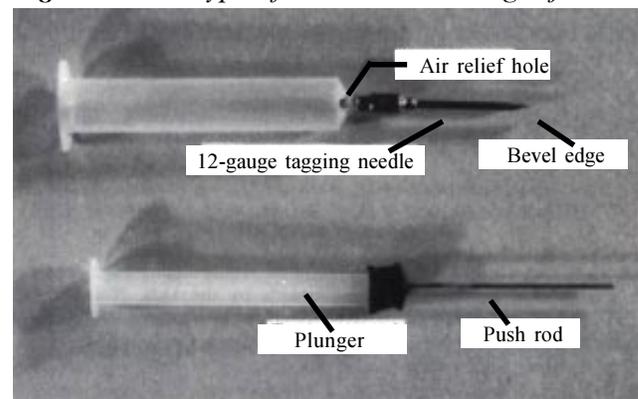
Disinfection Guidelines

Needles and push rods must be disinfected and cleaned between each use. The needle and push rod are to be disinfected with 70% ethanol for at least 10 minutes between each use during tagging and when moved from site to site. We also recommend that the tags be disinfected prior to use.

General Tagging Procedure

The following methods were developed for inserting the PIT tag into the body cavity of juvenile and adult salmonids using the hand held tag injector. The needle is inserted anterior-ventrally and the tag implanted posterior to the pyloric caeca in the area of the pelvic girdle. Exact needle placement for PIT tagging is dependent on fish size. For salmonids weighing less than 200 g, we recommend needle insertion posterior of the tip of the pectoral fins and just offset from the mid-ventral line. On larger fish, the insertion location should be anterior of

Figure 1. One type of hand held PIT tag injector.



the pelvic girdle and offset from the mid-ventral line. On all fish, the needle should be held at an angle between 20-45 degrees depending on fish size (use less of an angle for smaller fish). Needle pressure should be just enough to penetrate the body wall. Once the needle passes through the body wall musculature, the syringe angle is decreased so the barrel of the needle parallels the body wall. The body wall is then lifted slightly with the needle to further distance the tag from internal organs. Unless the fish is very small (<60 mm fork length), the needle is then inserted farther so that the open bevel is within the body cavity. The tag is implanted (via the push rod) posterior to the pyloric caeca in the proximity of the pelvic girdle. Properly implanted PIT tags have up to 100% retention and little measurable effect on fish survival.

If sharp needles are used, the puncture wound will be a straight cut about 1-2 mm in length. This type of wound will heal much faster and may be difficult to see immediately after tagging. If a dull needle is used, the puncture wound will be a ragged hole and will heal slower. There will also be some discoloration around a ragged wound caused from bruising of the tissue.

To accomplish the basic tagging described above, there are individual ways of holding the fish and holding the injector. Variables include the individual's hand size and dexterity. In all cases, the goal is to maintain control of the needle tip to prevent injury to the fish and to insert the tag in a direction away from the vital organs. A detailed description of one experienced tagger's methodology follows below.

a) Fish Position in Hand

The fish is held in the hand with the tail toward your thumb and the head toward your little finger. The belly of the fish is up. Position the fish in your hand so the point of injection is even with your middle finger (refer to Figure 2 below, point A). With a yearling spring chinook-

sized fish (80-150 mm length) the head is held between the little finger and the heel of the hand (refer to Figure 2 below, point B). The tail is held between the thumb and index finger (refer to Figure 2 below, point C). Slight pressure is applied with the middle finger by pressing the side of the fish's belly. This will tighten the belly tissue so the needle will penetrate more easily.

b) Injector Position in Hand

Both the thumb and plunger type hand-held PIT tag injectors are held in the hand in a similar fashion. The injector is laid in the hand so the point of attachment of the needle to the syringe is about even with the tip of the index finger (see Figure 3 below, point A). The fingers hold the barrel of the syringe, with the little finger wrapped around the base of the syringe. The base of the syringe rests against the palm near the base of the little finger. The index finger rests on the barrel of the needle. If you have a thumb type injector, the thumb will rest on the bolt attached to the plunger. If you have a plunger type injector, the end of the syringe plunger will rest against the palm of your hand. (People with small hands may have difficulty holding plunger-type injectors). The barrel of the needle rests against the palm of the hand holding the fish (see Figure 3 below, point B). This provides maximum support for the needle. You want as many contact points between you and the injector as possible. This will allow precise movement of the point of the needle. Without maximum control of the injector, the needle can penetrate too deeply and damage internal organs in the fish. If you are using an injector with the syringe plunger as the push rod, use the heel of the hand to push the plunger, not your thumb (see Figure 3 below, point C). If you use your thumb you lose control of the needle and can cause internal damage to the fish. Be sure to maintain contact between the barrel of the needle and the heel of the hand holding the fish at all times.

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Figure 2. Fish position in hand.

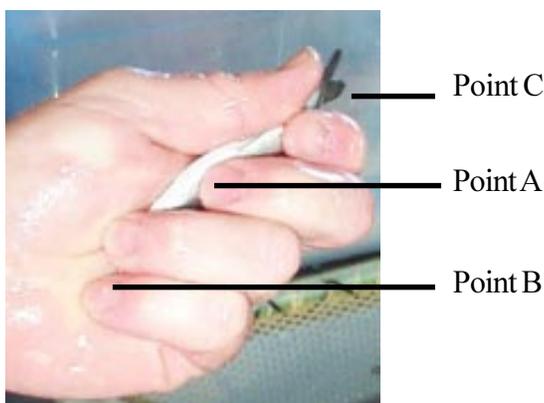
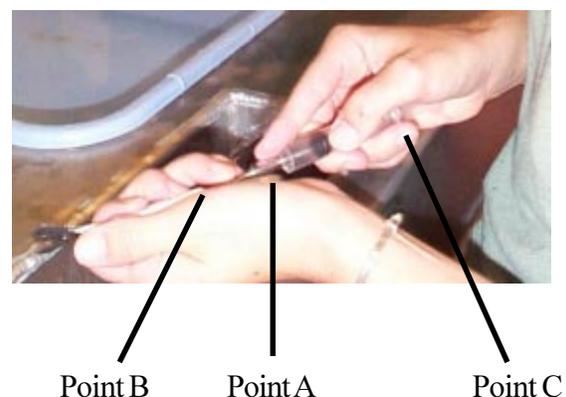


Figure 3. Injector position in hand.

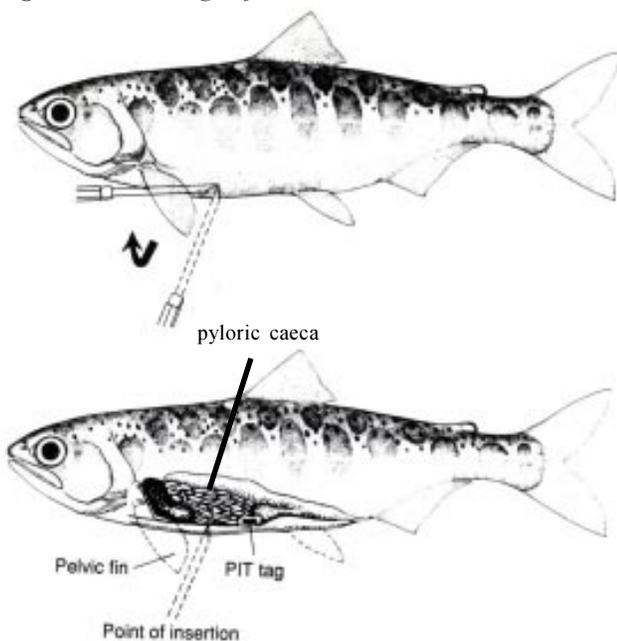


c) PIT Tag Injection

The point where the needle penetrates the fish's belly should be between the posterior tip of the pectoral fin and the anterior point of the pelvic girdle (refer to Figure 4 below). The puncture should be made one to two millimeters off the mid-ventral line. If you necropsy a fish, you will see that the pyloric caeca and the spleen lie below the puncture wound. The tip of the needle can nick either organ without injury to the fish (Prentice et al. 1986).

With the middle finger of the hand holding the fish adding a slight pressure, place the tip of the needle on the belly of the fish 1-2 mm on the opposite side of mid-ventral line from you. The bevel of the needle is open toward the belly of the fish so the point of the needle is away from the internal organs. The puncture is made with a short quick jabbing motion. Maximum control is needed because the tip of the needle should move only about 1-2 mm. The angle of the needle should be at about 45 degrees, and the motion of the needle should be directed through the fish and at your middle finger. Once the needle has penetrated the abdominal wall and with about 2-3 mm of the needle inside the fish (for fish with lengths up to about 150 mm), the tag can be injected. Using this technique, if you slip and the tip of the needle travels more than 1-2 mm, the needle will either follow the inside wall of the abdominal cavity or will pass back out the abdominal wall without passing through any internal organs.

Figure 4. PIT tag injection.



Help Sources

The PIT Tag Operations Center (PTOC) at Pacific States Marine Fisheries Center (PSMFC) maintains an Internet web page devoted to PIT tagging and the Columbia River Basin PIT Tag Information System (PTAGIS) database at www.psmfc.org/pittag. A current copy of the PIT Tag Specification Document is available here. This "Spec Doc" contains the acceptable codes and formatting for PIT tag files to be submitted to the PTAGIS. The document is updated annually to ensure interagency continuity of PIT tag data, as well as to facilitate data entry and retrieval. Questions regarding the Spec Doc, or PIT tagging, can be directed to the PTSC members listed in the document.

A completely integrated PIT tagging guide, including tagging station electronics and set up, new tagging software help, tagging station operations (tagging, fish handling, data entry, etc.), and data validation and uploading to PTAGIS is being prepared and should be completed by the end of the year.

Workshop Demonstration

The *PIT Tag Workshop 2000*, to be held January 11-14 in Stevenson, Washington, will have a live demonstration of tagging techniques. See the article on page 5 of this Newsletter for more information on workshop activities.

References

- Prentice, E. P., D. L. Park, T. A. Flagg and C. S. McCutcheon. 1986. A study to determine the biological feasibility of a new fish tagging system. Contract Rept. # DE-A179-83BP11982, project 83-19 to Bonneville Power Administration.
- Prentice, E. P., T. A. Flagg, and C. S. McCutcheon. 1990. Feasibility of using implantable passive integrated transponder (PIT) tags in salmonids. American Fisheries Society Symposium 7:317-322.
- Prentice, E. P., T. A. Flagg, C. S. McCutcheon, D. S. Brastow, and D. C. Cross. 1990. Equipment, methods, and an automated data-entry station for PIT tagging. American Fisheries Society Symposium 7:335-340.

If you have written comments, concerns, or feedback on this article, please send them to the PTOC, c/o PSMFC, 45 SE 82nd Drive, Suite 100, Gladstone, OR 97027. We will forward all comments to the PTSC.

This article was submitted by David Wills, USFWS, with assistance from the PTSC. Figures 1 and 4 appear courtesy of Earl Prentice, NMFS.

Call for Papers and Presentations

The Columbia Basin PIT Tag Information System and the PIT Tag Steering Committee are pleased to announce the PIT Tag Workshop 2000. The goal of the Workshop is to bring together representatives from all aspects of the PIT Tag use in Northwest fisheries research, to disseminate the latest information, and research and gain further knowledge by presentation and demonstration.

The Workshop will be held January 11 – 14, 2000, at Skamania Lodge near Stevenson, Washington. The Workshop will feature presentations on ISO Transition, Separation by Code, and Adult Interrogation; a poster session; a tagging demonstration; and training for the PIT Tag data entry and database retrieval systems, as well as vendor exhibits and presentations.

We are soliciting abstracts for presentation and/or a poster session during the Workshop. We are looking for your experience with data usage and PIT Tag applications and research. Suggested topics include, but are not limited to:

- Innovative application of PIT tags in your research
- Methodologies for tag application and fish handling
- Methodologies and techniques for data reduction and analysis
- Future application of PIT tag technology
- Tag retention in juvenile and adult salmonids
- Bird predation
- Other?

Presentations:

Abstracts of Presentations should be no more than a one-page outline or statement of the topic to be presented. Each proposal should include the title of the presentation and an estimated time for the presentation. All papers should be approximately 20–30 minutes in length. Please submit these abstracts by mail, fax or e-mail, to Sharon Hittle* at Pacific States Marine Fisheries Commission by September 1, 1999.

Poster Session:

Abstracts for the Poster Session should be related to research and PIT tag activities and be no more than one page in length. The Poster displays will be set up on Tuesday evening, January 11, available for public viewing the morning of Wednesday, January 12 through Thursday evening, January 13, 2000. The Poster Session will be held Wednesday, January 12 in the evening in conjunction with and adjacent to a social event. Please submit these proposals to Sharon Hittle* by mail, fax or e-mail at PSMFC by September 1, 1999.

*Address questions or submittals to:

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...Continued from Page 1 -- Whoopee! We're Dupe Free!

On the morning of April 10 we moved the remaining 2,312 duplicate records from "Tag_Data" to the "Tag_Dup_Data" table. These were records that the original Tagging Coordinators could not or would not resolve. By moving the data records rather than simply deleting them, we preserved the information for inspection and review, with the hope that the original data contributors can ultimately make the necessary corrections to properly assign these records to the appropriate data table(s). Also, by removing duplicate tag code references from "Tag_Data", we can now take advantage of the unique status of the tag codes to increase the performance of queries and reports based on those codes.

While the duplicate tag codes have disappeared from the "Tag_Data" table, they still exist within the PTAGIS database. Currently, there are over 10,000 records in the "Tag_Dup_Data" table. That includes the 2,300 records we moved from "Tag_Data" as well as 8,000 records of

tags submitted that were (or currently are) already referenced in "Tag_Data". As we have explained in previous articles, these tags are generally duplicated for one of three reasons: 1) the records should have been flagged as "Recaptures", but were not; 2) a user has submitted the same tagging information in two distinct files; and 3) a user has erroneously tried to remove a previous reference to a tagging event by submitting a "Mortality" file. We encourage all Tag Coordinators to periodically check for duplicate tag code assignments in their contributed data. A convenient way to do this is by following the "Duplicate TagID Table" link from the "Data and Reports" page on the PTAGIS web site at www.psmfc.org/pittag/Data_and_Reports/index.html. There are records from over 430 files for the current year in "Tag_Dup_Data" right now, so we hope you'll check this out, identify the problems, and resubmit the corrected data. Thanks.

PITTag2 Frequently Asked Questions (FAQ)

What is the difference between a *Tag Session* and a *Tag File*?

When data is entered into PITTag2, it is stored as a *Tag Session* in an internal database. You can enter, edit and append data within a *Tag Session*. Once the data is complete, use the “Validate & Export” function in PITTag2 to create an ASCII *Tag File* for submission to PTAGIS.

Do I need to PITVAL a *Tag File* created with PITTag2?

No. PITTag2 validates all data in a *Tag Session* before exporting it to a *Tag File*. The user is alerted to any invalid data in a *Tag Session* before the *Tag File* can be created.

How do I change the Filename field on the Header Tab Page?

The first eight characters of the Filename field cannot be edited. They are comprised of the *Filename Prefix* (the setting in Options dialog) and the *Tag Date*, in Julian format. However, the last three characters of the *Filename* field (referred to as the Filename Extension) can and should be modified to uniquely name the exported *Tag File*.

When I click on the drop-down lists for fields with validation codes, they are empty. How come?

You need to download the VALIDTBL.TXT and RKMCODES.TXT files from the PTAGIS Software page **and** run the *Update Codes* utility in PITTag2 to load the validation codes. The validation codes change infrequently and you may want to update them periodically using this method.

How do I get my device to work with PITTag2?

That’s a big question. And the big answer is that there are several factors involved in correctly setting up a device to work with PITTag2. Refer to the troubleshooting section of PITTag2’s online help. Here are some of the most common problems:

1. Your device may need a null modem cable, depending on if it’s connected to a multiport controller or directly to the PC.
2. You’ve selected the wrong driver in the PITTag2 Device Setup.
3. You’ve selected the wrong configuration settings on the CalComp digitizer board (it should be ASCII 2000 @ 254 lpi).
4. Your digitizer board is not aligned properly in PITTag2.

5. You’ve selected the wrong digitizer map in the PITTag2 Device Setup.

Should I upgrade my current version of PITTag2 to the latest release?

Yes. If you are *not* using a production version of PITTag2 (anything prior to the 1.0.0 release) upgrading to a production version is *essential*. If you are using a production version, we recommend upgrading to the latest release, as we are constantly incorporating minor bug fixes and functional requests made by users of PITTag2. The latest release (as of July 30) is 1.04a.

Do I have to completely reinstall PITTag2 to upgrade to a newer version?

If you are currently using a production version of PITTag2, the answer is no. Simply download the current update from www.psmfc.org/ptagis/Software_and_Documentation/PITTag2/index.html#update and “patch” your existing version of the PITTag2.exe file.

If you are using a pre-release version you must completely uninstall your existing application. Download the newest installation from www.psmfc.org/ptagis/Software_and_Documentation/PITTag2/index.html#full and reinstall PITTag2.

How can I determine what has changed between versions of PITTag2?

Read the Readme.txt file that is included with the installation files. It can also be accessed at www.psmfc.org/ptagis/Software_and_Documentation/PITTag2/Files/readme.txt.

How do I determine which version of a device driver I’m using in PITTag2?

The easiest way to determine which version of a device driver is currently loaded into PITTag2, is to use the Delete Driver utility located under the Setup -> Devices menu. The Delete Driver dialog box will display the current version of all device drivers loaded in PITTag2. Be careful not to delete any devices while doing this. The next major release of PITTag2 will have a better way of doing this.

I am using the new Destron 2001F Yellow reader and I notice that some tag codes are not showing up in PITTag2?

We discovered a bug in the Destron 2001F driver for PITTag2 that caused some tag codes to be “filtered”

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Tracking Data File Uploads to PTAGIS

There seems to be some confusion regarding the methods and responsibilities involved in contributing data files to the PTAGIS database. Here's a quick primer in successfully transferring your files from the field and having them incorporated into the database.

There are two methods of uploading data files to the PTAGIS file server at PSMFC. The first way is to use the "Upload/Download" menu within the PTAGIS application. From this menu you can upload four types of data files: **Tagging**, **Release Information**, **Mortality**, and **Interrogation/Observation** files. In addition, you can upload **Corrections** to previously-loaded Tagging files. When you upload data files from within the PTAGIS application, your files are processed while you (briefly) wait. The first step in this process is to **verify** that we can read your file, and that it's in the format that we expect. If there's a problem with the file format or content, you'll see an onscreen message to that effect. If we successfully verify your file(s), the Interrogation, Release Information, and Mortality files are loaded directly into the database, while Tagging files and Corrections are "accepted" and held in a queue until we manually load a batch of files. All of these actions are recorded to the PTAGIS "User_Upload_Log" table.

After you have uploaded your file(s), we expect you to verify that we have received and incorporated your data by checking the status of those files from the "Upload Log" function under the main "Util" menu in the application. If the "Status" column indicates that any type of file was "Rejected", you can view the error message associated with that record to help determine why the file failed our validation check. If a rejected file is corrected and resubmitted, the previous log record will be replaced with the current upload attempt, so you should see only one record for each file uploaded. When the status field shows the file has been "Loaded" to the PTAGIS database, please delete the record from the Upload Log. This saves you from scrolling through billions and billions of old upload records, conserves database space, and makes it easier for us to locate your activity records, in the event that you ask us about your upload status.

The second way to transfer your data files to PTAGIS is to e-mail them to us. Before you can submit files via e-mail, you must first register your e-mail address(es) with us. This is necessary to prevent anonymous access to the PSMFC servers, and reduces the possibility of someone maliciously hacking into our system and raising havoc.

From your established PTAGIS user account, you can specify one or more e-mail addresses from which your data files will originate. To register an address, choose the "Email Data Files Set-up" option from the main "Util" menu in the PTAGIS application. Once you've registered your e-mail address, submit your data files by attaching them to an e-mail message addressed to "pitdata@psmfc.org" with one of the following subjects: RELEASE, TAGGING, MORT, CORRECTIONS, INTERROGATION, or MULTIMON. (Multimon files can ONLY be submitted to PTAGIS via e-mail.) **The primary advantage of the e-mail transfer is that you can transfer multiple individual files attached to a single e-mail message, or you can ZIP all the data files together in a single attachment.** The biggest disadvantage of e-mailing data files is that many people don't appear to verify that those files were received by PSMFC, or accepted and loaded into the PTAGIS database. **Pressing the "Send" button in your e-mail application does NOT mean that your data files will automatically be loaded to PTAGIS.** You must still log into the PTAGIS application and review the "Upload Log" to verify your data have been incorporated into the database.

When you e-mail your files to PTAGIS, we'll return an e-mail "receipt", indicating that we got your message. That receipt will NOT tell you if we Accepted/Loaded the attached file(s), or if they were Rejected. To receive this second confirmation, you MUST be set up to have your PTAGIS account's mail forwarded to your local e-mail. Do this by logging into the PTAGIS application and selecting the "Forwarding EMAIL" function from the main "Util" menu. **You can only forward your PTAGIS account mail to a single e-mail address.** Your best bet here is to make sure that the forwarding address appears in the "Email Data Files" list. Regardless if you do or don't have your confirmation messages forwarded to your local e-mail address, you must still log into the PTAGIS application and maintain the file list by using the "Upload Log" function.

Many people appreciate the convenience of e-mailing their PIT tag data files, but don't realize the need to monitor the subsequent processing of those data. Our goal is to help you verify that your data are completely and correctly represented in the PTAGIS database. Whether you upload online or via e-mail, please take the time to ensure that your PIT tag data files are truly loaded into the database.

and communications infrastructure as well as access platform construction will begin after the de-commissioning of the 400kHz system. The completion of the infrastructure work is scheduled for the end of December 1999.

After the facilities are de-watered (October & November 1999-January 2000), electro-magnetic shield (EMF) sections will be removed from some fish flumes. These EMF shields will be re-fabricated to meet more stringent functional standards. The coils on these flume sections will be wrapped at this time.

Installation of new stationary transceivers and final wrapping of the ISO coils within the interrogation systems should be completed by February 21, 2000. System testing and integration will be performed after the installations are complete. National Marine Fisheries Service will coordinate live fish testing at all facilities in order to directly measure interrogation coil reading efficiencies prior to the main out-migration in 2000.

Stationary Transceiver

All 165 stationary transceivers have been delivered to the PIT Tag Operations Center (PTOC) field office in Kennewick, WA. A sub-set of the units are being function tested.

Portable Transceiver

All portable transceivers have been distributed to Direct Funded Columbia River Fish and Wildlife projects as requested.

Tag Availability

ISO tags are available from multiple manufacturers. Columbia River Basin Direct Funded projects are bound by a sole-source supplier agreement, in which tags are provided by Destron-Fearing.

The Tag Evaluation Team will meet before October 1999 and discuss the possibility of completing the procurement and technical specification for tags.

Questions?

If you have any questions regarding the ISO Transition, please contact your PIT Tag Steering Committee representative or the co-chairs of the Transition Planning Team, Charles Morrill at 360.902.2747, John Rowan at 503.230.4238, or Carter Stein at 503.650.5400.

out (any tag codes with "FD" in the last four characters). We fixed this problem in the driver and released it as version 2. You can download it from www.psmfc.org/ptagis/Software_and_Documentation/PITTag2/device.html#DF2001.

Please upgrade this driver if you are going to be using the new Destron readers. If you've done a complete installation of PITTag2 version 1.0.4a, the updated device driver is included; otherwise you must download and install the updated driver. See the PITTag2 Readme.txt file for instructions on doing this.

I upgraded my PITTag2 executable file to version 1.0.4, but it did not include the latest Destron 2001F driver (version 2).

Only the complete installation of PITTag2 v.1.0.4a includes the updated driver. The 1.0.4 executable upgrade contains only the executable program without any of the device drivers.

Why does PTAGIS reject my Tag Files created with PITTag2?

There are four possible reasons that will cause a rejection:

1. After PITTag2 exports a validated *Tag File*, you made an edit to the file that does not meet PTAGIS' specifications.
2. You created a user-defined validation code or release site in PITTag2 that is unknown to the PTAGIS system.
3. Your *Tag File* contains an invalid conditional comment. Currently, PITTag2 does not validate conditional comments.
4. On rare occasions, you entered a weight and PITTag2 did not format it correctly. We have tried to reproduce this problem and cannot. We are looking into this further.

How can I quickly find the largest fish I've tagged in a given Tag Session?

Use the *Find Detail Record...* utility (Ctrl-F) and then click on the Length or Weight column. This will sort the detail records by that column in ascending order. Click on the same column again and it will sort in descending order, bringing the largest fish to the top. You can use this technique to sort by any field in the *Tag Session* details.

List of 1999 Columbia River Basin PIT Tagging Projects

Below is a listing of all Direct-Funded projects in the Columbia River Basin that use PIT tags. More detailed information about each project can be accessed from the Fish and Wildlife Program's Annual Implementation Work Plan, which is located on the StreamNet web site at www.streamnet.org/f&wprogram.html.

<u>Project #</u>	<u>Project Name</u>	<u>Agency/Sponsor</u>
83-319-00	New Fish-Tagging System	NMFS/NWFSC
83-323-00	Monitor Smolts at the Head of Lower Granite Reservoir and Lower Granite Dam	IDFG
83-350-00	Nez Perce Tribal Hatchery	NPT
86-050-00	White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers	ODFW
87-127-00	Smolt Monitoring By Non-Federal Agencies	PSMFC
87-127-02	Comparative Survival Rate Study (CSS) of Hatchery Pit Tagged Chinook	PSMFC
87-127-03	Imnaha River Smolt Monitoring Program Project	NPT
88-064-00	Kootenai River White Sturgeon Studies and Conservation Aquaculture	KTOI
89-024-01	Evaluate Juvenile Salmonid Outmigration and Survival in the Lower Umatilla	ODFW
89-065-00	Annual Fish Marking - Missing Hatchery Production Groups	USFWS
89-098-00	Salmon Supplementation Studies in Idaho Rivers	IDFG
89-098-01	Salmon Supplementation Studies in Idaho Rivers	USFWS-IFRO
89-098-02	Salmon Supplementation Studies in Idaho Rivers	NPT
89-098-03	Salmon Supplementation Studies in Idaho Rivers	SBT
90-005-00	Umatilla Hatchery Monitoring and Evaluation	ODFW
90-005-01	Umatilla and Walla Walla Basin Natural Production M&E Project	CTUIR
90-055-00	Steelhead Supplementation Studies in Idaho Rivers	IDFG
90-080-00	Columbia Basin PIT Tag Information System	PSMFC
91-028-00	Monitoring Smolt Migration of Wild Snake River Spring/Summer Chinook	NMFS/NWFSC
91-029-00	Life History and Survival of Fall Chinook Salmon in Columbia River Basin	USGS
91-055-00	Supplementation Fish Quality (Yakima)	NMFS
91-072-00	Redfish Lake Sockeye Salmon Captive Broodstock Program	IDFG
91-073-00	Idaho Natural Production Monitoring and Evaluation Program (INPMEP)	IDFG
92-026-04	Spring Chinook Salmon Early Life History	ODFW
93-029-00	Survival Estimates for Passage of Juvenile Salmonids Through Dams & Res.	NMFS/NWFSC
94-010-01	Mitigation for Excessive Drawdowns at Hungry Horse & Libby Reservoirs - Lib	MFWP
94-034-00	Assessing Summer & Fall Chinook Salmon Restoration in Snake River Basin	NPT-DFRM
95-063-00	Yakima/Klickitat Monitoring and Evaluation Program	YIN
96-032-01	Begin Implementation of Year 1 of the K Pool Master Plan Program	YIN
96-033-01	Supplement and Enhance the two Existing stocks of Yakima River Fall Chinook	YIN
96-033-02	Evaluate the Feasibility and Potential Risks of Restoring Yakama River Coho	YIN
96-040-00	Evaluate the Feasibility and Risks of Coho Reintroduction in Mid-Columbia	YIN
96-043-00	Johnson Creek Artificial Propagation Enhancement - O&M and M&E	NPT
97-001-00	Captive Rearing Initiative for Salmon River Chinook Salmon	IDFG
97-010-00	PIT Tag System Transition	BPA
98-007-02	Grande Ronde Supplementation - O&M/M&E - Nez Perce Tribe Lostine	NPT
98-010-01	Grande Ronde Basin Spring Chinook Captive Broodstock Program	ODFW/NPT
98-010-04	Monitor and Evaluate Yearling Snake R Fall Chinook Upstream of Lwr Granite	NPT
98-010-06	Captive Broodstock Artificial Propagation	NPT
98-080-01	PIT Tag Purchase and Distribution	PSMFC
98-016-00	Monitor Natural Escapement & Productivity of John Day Basin Spring Chinook	ODFW
99-018-00	Characterize & Quantify Residual Steelhead in Clearwater River, Idaho	USFWS
LSRCP	Lower Snake River Compensation Program	IDFG

Announcements

- We are proud to introduce Darren Chase as the newest member of our team. Darren is a Field Engineer and is stationed in our Kennewick, Washington office.

Mark Your Calendars!!

The PIT Tag Workshop 2000 will be held January 11-14, 2000 at Skamania Lodge in Stevenson, Washington.

Calendar

Sept. 1, 1999	400 kHz Snake River Interrogation Sites Decommissioned (GRJ, GDS, LMJ)
Sept. 1, 1999	Workshop 2000 Abstracts Due
Oct. 1, 1999	400 kHz Columbia River Interrogation Sites Decommissioned (MCJ, JDJ)
Oct. 15, 1999	Workshop 2000 Early Registration Due
Jan 11-14, 2000	PIT Tag Workshop 2000 held in Skamania, Washington

We welcome input from the PIT Tag community, so feel free to call (503/650-5400), fax (503/650-5426), e-mail, or write us with your story ideas. If you have any questions regarding the contents of this publication, or about the PTAGIS program, please contact Carter Stein, PTAGIS Program Manager. Editing and layout by Liza Bauman. Unless otherwise noted, contributors include Carter Stein (carters@psmfc.org), Dave Marvin (dave_marvin@psmfc.org), John Tenney (john_tenney@psmfc.org), and Liza Bauman (liza_bauman@psmfc.org).
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