

PTAGIS

n e w s l e t t e r

Recovery of PIT Tags from Piscivorous Waterbird Colonies

Predation by Caspian terns on radio-tagged chinook salmon smolts in the Columbia River Estuary has been well documented. Recovery rates of these tags on Rice Island, a dredge material disposal island where the terns nest, suggest that predation rates on juvenile salmonids may be high. Presumably, PIT tagged juvenile salmonids are also being eaten and tags deposited at the Rice Island tern colony. In 1996 and 1997, the Columbia River Inter-Tribal Fish Commission in cooperation with the Oregon Cooperative Wildlife Research Unit conducted a study to recover PIT tags from the Rice Island Caspian tern colony.

The Rice Island tern colony is ideal for recovering large numbers of PIT tags. First, Caspian terns are strictly piscivorous and are expected to be one of the more im-

portant bird predators on juvenile salmonids in the Basin. Second, the colony is quite large, approximately 8,000 nesting pairs. Finally, unlike other piscivorous waterbirds in the Columbia River Basin, Caspian terns nest on bare sand which can easily be searched for tags.

Both systematic and non-systematic methods were used to recover tags from the colony. Stratified systematic sampling was used to estimate the total number of PIT tags on the colony. This involved sampling for tags in meter square plots located along a grid that covered areas both inside and outside the nesting area as determined from aerial photos. Sand from these plots was run through a set of soil sieves to recover all tags within a plot. Non-systematic sampling involved conducting visual searches through areas of high tag density to recover as many tags as possible. PIT tags are surprisingly easy to spot on the surface of the sand while walking (and crawling) around the colony. Various electronic PIT tag readers (e.g. Avid, Datamars, Destron) were tested as a means to detect tags, but none proved to be sensitive enough to detect tags having assorted orientations in the sand.

In total, 1,002 PIT tags were recovered from the Rice Island tern colony using all methods in 1996 and 1997. Based on stratified systematic sampling in 1997, there are an estimated 33,801 PIT tags on the colony. Tags were recovered from as far back as 1989, and from each

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subsequent migration year. The majority of the tags recovered were from fish tagged in 1997. An estimated 2.4% of the total number of PIT tags released in 1997 wound up on the Rice Island tern colony, which represents a minimum estimate of the number of PIT tagged fish consumed by terns in 1997. Steelhead and hatchery-reared fish appear to be most vulnerable to tern predation as compared to other salmonid species and rearing types. Data are still being analyzed and final results will be included in a subsequent report to be submitted to the U.S. Army Corps of Engineers and the Bonneville Power Administration.

In 1998, we propose to continue our efforts to recover PIT tags from piscivorous waterbird colonies. Our focus will be to increase the number of PIT tags detected and/or recovered using a variety of methods. In addition to the methods described, we will continue to test electronic PIT tag readers that might be used to effectively detect tags at different depths and orientations in the substrate. We also plan to conduct sampling for PIT tags at two smaller Caspian tern colonies at Three Mile Canyon Island and Crescent Island, both located on the Columbia River above John Day and McNary dams, respectively. This work continues to be part of a more comprehensive study investigating the impacts of colonial waterbirds on the survival of juvenile salmonids in the lower Columbia River.

This article was submitted by Ken Collis, a fisheries scientist at the Columbia River Inter-Tribal Fish Commission. We thank him for this submission. Ken can be contacted at (503) 731-1270 or via e-mail at collis@transport.com.

Field Data Loader Schedule

When you are tagging, if you would like to know when release or mortality files will be loaded into the PTAGIS database, please check the schedule below for load times:

Monday through Friday: 03:30, 09:30, 12:30, 16:30
 Saturday and Sunday: 03:30, 12:30

Most of you already know that errors are caught at the time of loading. If you use a modem to upload your files, you will see either a confirmation or an error message scroll on your screen. If you use e-mail to upload your files, you will receive the confirmation or error messages at the e-mail address from where the file was sent.

Below are the two status messages that you will see when you check the upload log from the PTAGIS3 application:

- ◆ File accepted: found no errors waiting to load to database
- ◆ File rejected: errors were found will not load to database
- ◆ File crunched: in the process of being loaded to the database
- ◆ File loaded: file has been loaded into the database

1997 Facility Operation Dates

<u>Facility</u>	<u>Water-Up Date</u>	<u>De-Water Date</u>
GRA	Mar. 5, 1997	In Operation
MCJ	Apr. 9, 1997	In Operation
LMJ	Mar. 26, 1997	Nov. 1, 1997
GOJ	Mar. 26, 1997	Nov. 1, 1999
GRJ	Mar. 26, 1997	Nov. 1, 1997
JDJ	Mar. 21, 1997	Sep. 8, 1997
BVJ	Mar. 21, 1997	Oct. 30, 1997

Which WWW Browser Do You Use? **CORRECTION**

Depending on the browser you use, there are two different ways of connecting to our site's File Transfer Protocol (ftp) server for transferring reports or files:

- ◆ If you use Microsoft's Internet Explorer as your browser, connect to: ftp://username:password@ftp.psmfc.org.
- ◆ If you use Netscape as your browser, connect to: ftp://username@ftp.psmfc.org.

For security reasons, we recommend that you use a Netscape browser, as it does not require you to send your username *and* password over the World Wide Web.

CSV Reports - Reminder!

Some of the csv style reports offer two different types of species, run and rearing type data (i.e. “species” -vs- “t_species”). As you scroll down the list of fields available, the “t_species” selection contains the data you want; the same goes for t_run and t_rear_type (shown in Figure 1 below).

The columns without the “t_” prefix are meant to reflect species, run and rearing type (see Figure 2 below) information from the old format of the file header. In 1996 the file formats were changed, so we removed this information from the header and inserted it into each fish detail record using the t_prefix.

Figure 1

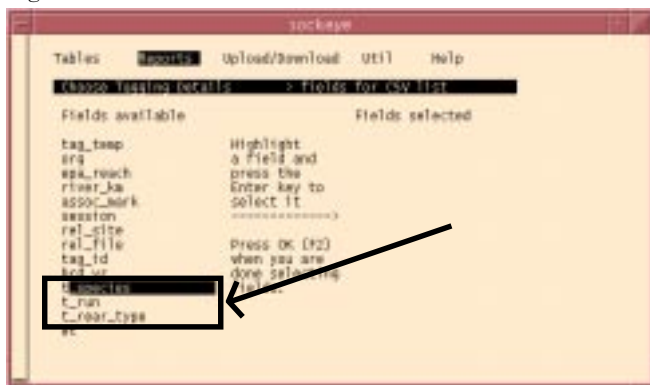
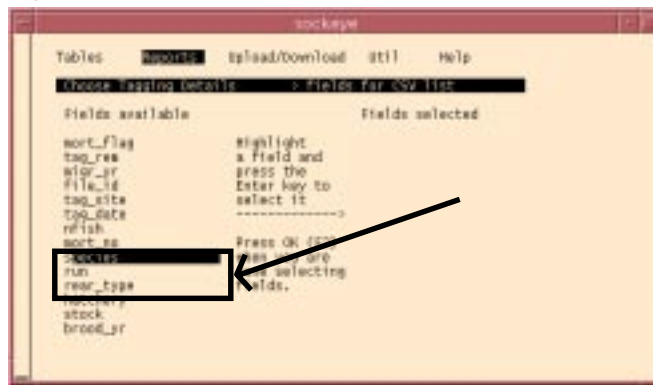
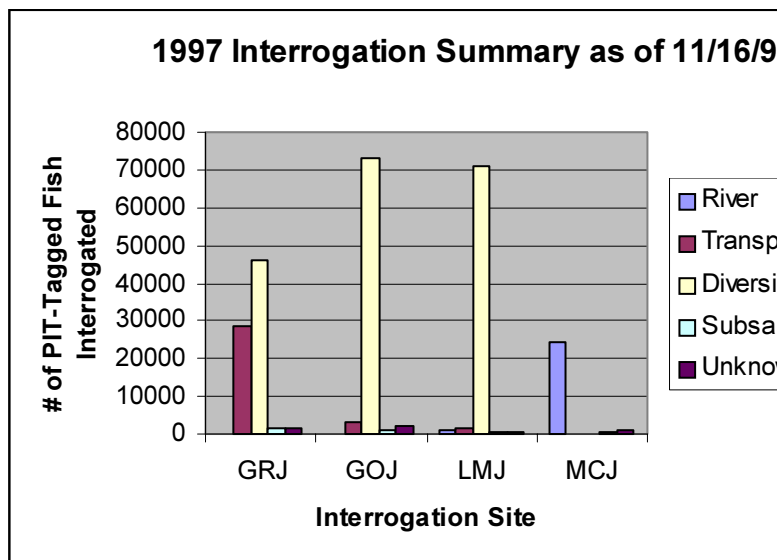


Figure 2



1997 Interrogation Summary as of Nov. 16, 1997

The graph below shows the final disposition of PIT-tagged fish at the four mainstem juvenile fish facilities during the 1997 outmigration (as of November 16, 1997). Notice that Transport group for Lower Granite Dam (GRJ) is significantly higher than the Transport groups for the remaining three dams. This illustrates the effectiveness of the Separation by Code system, which supports the multi-state comparative hatchery transport study.



Explanation of Chart:

Both the River and Diversion groups mean PIT-tagged fish were last detected heading for the river. The Subsample and Transport groups mean the fish were transported from the facility by truck or barge. The Unknown grouping means that there is no “exit” information available.

Announcements

- ◆ PSMFC is in the process of hiring a programmer to work on the PIT Tag project. The new programmer will initially focus on World Wide Web connectivity to the PTAGIS database. We are hoping to have the position filled by January 1998—so look for improvements to the PIT Tag web pages in the coming year! If you have any ideas for web connectivity to the PTAGIS database, please send your suggestions to jen@psmfc.org.
- ◆ This newsletter contains an article by Ken Collis from the Columbia River Inter-Tribal Fish Commission detailing his finding of PIT Tags in bird colonies. In related news, PSMFC was recently contacted by Monique Wilson (of the Washington Department of Fish and Wildlife) regarding PIT Tag IDs she recovered from the intestinal tracts and stomachs of birds. She has agreed to write an article about her findings for a future edition of the PTAGIS newsletter.

Calendar

Nov. 27-28, 1997	PSMFC Office closed for the Thanksgiving holiday.
Dec. 25-26, 1997	PSMFC Office closed for the Christmas holiday.
Jan. 1, 1998	PSMFC Office closed New Year's Day.

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 (liza_bauman@psmfc.org). Contributors include Carter Stein (carters@psmfc.org) and Jennifer Mead (jen@psmfc.org). Date of issue: 11/24/97.

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