

PIT TAG SPECIFICATION DOCUMENT

Columbia River Basin

PIT Tag Information System

Data Source Input Specifications

**PREPARED BY
PIT TAG WORK GROUP**

March 1, 1991

1991 CHANGES

Below is a list of 1991 changes from the 1990 Specification Document that you should be aware of. Many of the changes were made to better accommodate the new data systems repository at PTAGIS, recently relocated from the NMFS computer in Seattle to the new system at the Pacific States Marine Fisheries Commission in Portland. The PIT tag sub-committee felt that this was the most opportune time to make other changes that we deemed necessary to better the PIT tag system. Be sure you incorporate these changes into your 1991 PIT tag work. **These changes will go into effect March 1, 1991.** Any data submitted to PTAGIS after that date will be in the new format or it will be returned to the researcher for corrections. If you have any questions feel free to contact any of the PIT Tag Work Group members or the people at PTAGIS. For a list of names and telephone numbers refer to section III.K. in the Specification Document.

TAGGING FILE VERIFICATION PROGRAM: Paul Williams (IDFG) has written a verification program for **TAGGING FILES**. This program will check a **TAGGING FILE** to ensure mandatory entries are filled in and against the lists of standard codes and entries in the PIT Tag Specification Document to ensure only proper entries are found in the **TAGGING FILE**. This program will be provided with the 1991 copy of the PIT Tag Specification Document.

GLOSSARY: A glossary was added to the PIT Tag Specification Document to provide a better understanding of the terminology to the user.

TAGGING FILE: HEADER RECORD:4 The Format for all **HEADER RECORDS** have been standardized. PTAGIS will provide the standard format, on a computer diskette, along with the 1991 PIT tag Specification Document.

II.A.2.e. TAGGER:

1. The space allowed for Tagger has been reduced to 15 characters.
2. The 1st initial of the tagger's first name is now required along with the last name.
3. The name used for the tagger should be the primary tagger doing the tagging for that particular file.

II.A.2.f. SPECIES:

1. Use the primary species that will occur in the file. If there are other species besides the primary species designate this in the **POSITIONAL COMMENT** section of the Tagging Record column 41.

II.A.2.g. RUN:

1. Same change as with **SPECIES**, above.

II.A.2.h. REARING TYPE:

1. Same change as with **SPECIES**, above.

II.A.2.m. TAGGING SITE:

1. A list of Tagging site codes has been added (III.J.2.). Only these code can be used in Tagging Site. If you wish to add to this code list contact PTAGIS with your additions.

II.A.2.q. POST TAGGING TEMP:

1. This is a new field.
2. It is defined as the temperature of the container or raceway the fish are held in after tagging. For example; it would be the temperature of the hatchery raceway fish were released into after tagging. Another example would be the temperature of the container fish were held in after tagging if a delayed mortality study was being done.
3. Either **POST TAGGING TEMP** or **RELEASE WATER TEMP** must be filled in.

II.A.2.r. RELEASE WATER TEMP:

1. If fish are released directly to a stream after tagging, instead of being held in a hatchery or for some other reason, then this is the water temperature of that stream.
2. **RELEASE WATER TEMP** is filled in only when fish are released directly to a stream after tagging and the **TAGGING FILE** doubles as a **RELEASE INFORMATION FILE**.
3. Either **POST TAGGING TEMP** or **RELEASE WATER TEMP** must be filled in.

II.A.2.t. ORGANIZATION:

1. The variable name **AGENCY** has been changed to **ORGANIZATION** (see **III.H.** for a list of **ORGANIZATION** codes).

II.A.2.v. RELEASE DATE:

1. New field added to the **TAGGING HEADER**.
2. It is the date the fish were released into a stream.
3. It is filled in only when fish are released directly to a stream after tagging and the **TAGGING FILE** doubles as a **RELEASE INFORMATION FILE**.

RELEASE TIME:

1. This variable was removed from the **HEADER RECORD**.
2. If fish are released directly to a stream and a **RELEASE TIME** is associated with the fish it is recorded as a **POSITIONAL COMMENT** (Variable Release Time) of the **TAGGING RECORD** section of the **TAGGING FILE**.

II.A.2.w. RELEASE SITE:

1. New field added to the **TAGGING HEADER**.
2. Only Release codes from the code list (section **III.J.2**) will be allowed in this field. If you wish to add to this code list contact **PTAGIS** with your additions.
3. Fill in this field if fish are released directly to a stream and the **TAGGING FILE** doubles as a **RELEASE INFORMATION FILE**.

II.A.2.x. RELEASE RIVER KM:

1. New field added to the **TAGGING HEADER**.
2. The approved list of **RELEASE KM's** can be found in section **III.J.2**. If you wish to add to this code list contact **PTAGIS** with your additions.
3. Fill in this field if fish are released directly to a stream and the **TAGGING FILE** doubles as a **RELEASE INFORMATION FILE**.

COMMENTS

1. Removed from **HEADER RECORD**.

RELEASE INFORMATION FILE: HEADER RECORD: The format of the **RELEASE INFORMATION FILE** has been standardized. The new standard format will be supplied by **PTAGIS** on a floppy diskette with the 1991 **PIT Tag Specification Document**.

II.B.2.b. RELEASE DATE:

1. The name has been changed from **BEG RELEASE DATE**.

II.B.2.c. RELEASE TIME:

1. The name has been changed from **BEG RELEASE TIME**.

END RELEASE DATE:

1. Field removed from **HEADER RECORD**.

END RELEASE TIME:

1. Field removed from **HEADER RECORD**.

II.B.2.d. RELEASE SITE:

1. The name has been changed from **RELEASE LOCATION**.

2. Use only codes from the standard list section III.J.2. If you wish to add to this code list contact PTAGIS with your additions.

II.B.2.e. RELEASE RIVER KM:

1. Only RELEASE RIVER KM's from the list (Section III.J.2) can be used. If you wish to add to this code list contact PTAGIS with your additions.

CLOUD COVER:

1. Field removed from HEADER RECORD.

II.B.2.h. RELEASE WATER TEMP:

1. The name has been changed from WATER TEMP.

RELEASE WAS MONITORED:

1. Removed from HEADER RECORD.

FISH HEALTH/CONDITION:

1. Removed from HEADER RECORD.

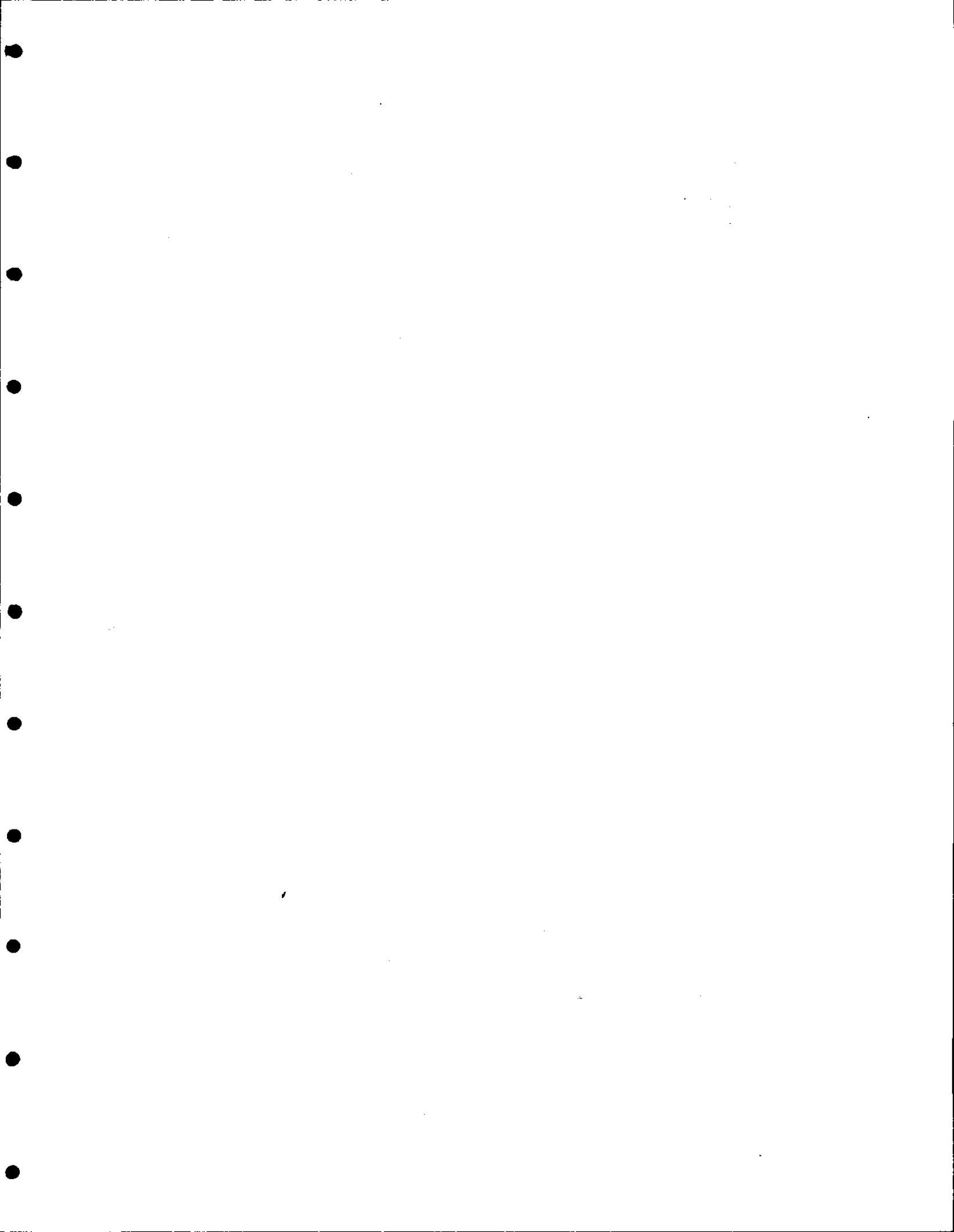
II.B.4. RELEASE REMARKS:

1. Moved from the HEADER RECORD to the bottom of the file as a NOTE RECORD .

III. CODE LISTS:

III.J.2. TAG, RELEASE, AND COLLECTION SITE CODES AND ASSOCIATED RIVER
KM'S.

1. This list was added and has the Name of the site, the code for that site, the River Km for that site, and the GIS Hydrounit in which the site is located.
2. Only codes from this table will be recognized by the PTAGIS data system or by the Tagging Verification Program.
3. If you wish to add to this table, provide the appropriate site data to your PIT Tag Work Group representative.



1991

PIT TAG SPECIFICATION DOCUMENT

I. Rationale

This specification document has been prepared to ensure interagency continuity of PIT tag data as well as facilitate data entry and retrieval to and from the Columbia River Basin PIT Tag Information System (PTAGIS). Some flexibility exists to modify data inputs as the system evolves. However, all proposed changes to this document must be reviewed annually by the PIT Tag Work Group. Reviewing and changing this specification document will occur annually prior to March. Questions concerning this document should be addressed to the PIT Tag Work Group members (See section III.K.).

II. Data Files

There are six file types that are recognized by the PTAGIS system. These are **Tagging, Release Information, Interrogation, Monitored Release, Mortality, and Test Tags**. All files must be in ASCII format and comply with the following specifications. The first record of each of these files will be the "FILE TYPE" record.

Format: "FILE TYPE" starting in column 5; a colon (:) in column 36; and the File Type Name (as listed below) starting in column 38 ("TAGGING", "RELEASE INFORMATION", "INTERROGATION", "MONITORED RELEASE", "MORTALITY", or "TEST TAGS")

See Figures 1-5 (examples) for additional information.

A. Tagging File

Tagging files are created using the program PITTAG.EXE or an equivalent program that is 100% compatible. Only the most current version of the program (3/30/90) should be used. This document refers to features not found in previous versions of the program. Older versions of the program should be discarded. Updated programs are available through PIT Tag Work Group members (See section III.K.).

A tagging file consists of five record categories: **File type, Header, Tag, Note, and Additional Record Types**. All records must have at least four characters (even blank records will have four spaces). Any number of **Header, Tag, and Note** records are allowed. A **Header** record is distinguished by spaces in columns 1-4 and a colon (:) in column 36. A **Tag** record is distinguished by at least one right justified character in columns 1-4. **Notes, Headers, and Session Message** records are distinguished by spaces in columns 1-4.

1. File Type Record (Format description, See section II.)

a. FILE TYPE: TAGGING (Computer generated, Mandatory)

2. Header Records (See Figure 1)

The Header format used during the PIT tagging process will be provided by PTAGIS. The format of the header is standardized and should not be changed. If the format is changed it will not be recognized by the PTAGIS data system. The Mutable/Immutable designator (M/I) can be modified as necessary by the individual researcher and the default contents of the fields can also be modified to reflect individual requirements as long as the format of the Header Record is not changed. Data should be entered using the following format: Data (columns 38 on to end) follows the colon (: column 36). Lines of alternate dashes and spaces will be in the Header Record on lines 2 and 4.

- a. SESSION or PROJECT MESSAGE: {TEXT, 100 characters max. Optional, entered when in initialization portion of PITTAG.EXE program}
- b. FILE TITLE: xxxYYDDD.zzz {Mandatory format, includes a 3 character ID (initials) of the individual tagging supervisor and the julian date. The extension is optional, variable, and up to the discretion of the tagging supervisor}
- c. CREATION DATE: MM/DD/YY {Computer Generated, Mandatory}
- d. CREATION TIME: HH:MM {Computer Generated, Pacific Standard Time, Mandatory}
- e. TAGGER: {Primary Tagger, last name, followed by a space, and first initial of first name, 15 characters max. Mandatory}
- f. SPECIES: {Primary Species in Tagging Record, 1 character max, See III.B. for codes. Mandatory}
- g. RUN: {Primary Run in Tagging Record, 1 character max, See III.C. for codes. Mandatory}
- h. REARING TYPE: {Primary Rearing Type in Tagging Record, 1 character max, See III.D. for codes. Mandatory}
- i. HATCHERY SITE: {See III.F. for Codes, 4 characters max., if not tagged at hatchery leave blank, Optional}
- j. STOCK: {15 characters max., Optional}
- k. BROOD YR: {last 2 digits of calendar year when eggs were collected, Optional}
- l. MIGRATORY YR: {last 2 digits of earliest calendar year when fish will outmigrate. Mandatory}
- m. TAG SITE: 6 character code {See III.J.2. for correct code, 6 characters max. Mandatory.}
- n. RACEWAY/TRANSECT: {6 characters max. Optional}
- o. CAPTURE METHOD: {6 characters max. - see III.G. below. Optional}
- p. TAGGING TEMP: {nn.n, temp (C) tagging troughs. Mandatory}
- q. POST TAGGING TEMP: {nn.n, temp (C) Holding temp. of water in outdoor raceways. Optional}
- r. RELEASE WATER TEMP: {nn.n, temp (C) of water in stream fish were released into. Optional, required if Tagging file doubles as Release file}.
- s. TAGGING METHOD: {AUTO or HAND. Mandatory}
- t. ORGANIZATION: {see III.H., 6 characters max. Mandatory}
- u. COORDINATOR ID: {see III.A. for codes. Mandatory}

- v. **RELEASE DATE:** MM/DD/YY {Optional, Required only if fish is released directly to stream and the **TAGGING FILE** will act as a **RELEASE INFORMATION FILE.**}
- w. **RELEASE Site:** 6 Character code {See Section III.J.2. for correct code list, 6 characters max. Optional, required only if **Tagging file** is doubling as a **Release file.**}
- x. **RELEASE RIVER KM:** {See section III.J.2. Optional, required only if **Tagging file** doubles as a **Release file.**}

3. Tag Records

- a. **SEQUENCE NUMBER:** {Columns 1-4, numeric. Mandatory}
- b. **PITCODE:** {Columns 7-16, alpha-numeric. Mandatory}
- c. **CHECKSUM:** {Columns 19-20, alpha-numeric. Mandatory}
- d. **FORKLENGTH:** {Columns 21-28, numeric and right justified, in millimeters. Mandatory}
- e. **WEIGHT:** {Columns 29-38, numeric with one digit to the right of the decimal point and right justified, in grams. Optional}
- f. **COMMENTS:** 3 Types: Specific comments for individual fish.

(1) **POSITIONAL COMMENTS** (normally entered via the digitizer)
 Only **positional comments** defined in this specification document can be used. Additional **positional comments**, required by individual research projects, can be added after column 45, up to the maximum total of 50 columns, but will not be recognized by PTAGIS without prior committee approval. **Positional comments** will overwrite corresponding header information for the individual tag record it is assigned to when the tagging file is loaded into the central data base. The **positional comments** currently specified are as follows:

- (a). **SPECIES:** {POSITIONAL COMMENT; Column 41, numeric, Required if different than **Species** in **Header Record**, see codes III.B.}
- (b). **RUN:** {POSITIONAL COMMENT; Column 42, numeric, Required if different than **Run** in **Header Record**, see codes III.C.}
- (c). **REARING TYPE:** {POSITIONAL COMMENT; Column 43, alpha-numeric, Required if different than **Rearing Type** in **Header Record**, see codes III.D.}
- (d). **VARIABLE RELEASE TIME = 01...99:** {POSITIONAL COMMENT; Columns 44-45). Each unique release time variable must have a corresponding accompanying note record that reports the actual date and time of release (see Section II.A.4. "Note Records"). Required if fish are released after

1 PIT tags can only be re-used in the columbia River system if the tag is removed from a fish and the tag code with check sum are changed to ten periods followed by a space and two periods (..... ..) prior to the tagging file being submitted to PTAGIS. All other fields in the individual record must remain intact for future reference.

tagging to a stream and Tagging file will double as a Release Information file.

(2) **CONDITIONAL COMMENTS** (normally entered via the digitizer) Only approved **Flag Codes** will be recognized as conditional comments (see section III.E. "**Flag Codes**"). **Conditional comments**, if present, are preceded by a vertical bar "|" and are separated by spaces. Space is allocated for up to 50 characters in this field.

(3) **TEXTUAL COMMENTS** (entered via the keyboard) **Textual comments** are separated from **Conditional comments** by a single vertical bar "|". If no **conditional comments** are present, **Textual Comments** are preceded by two adjacent vertical bars "||" and consist of information specific to an individual fish. Space is allocated for up to 50 characters in this field.

4. **Note Records** (Typed via keyboard)

Note Records are defined as all text comments beginning in column five. **Note Records** are entered via the keyboard. All notes of a non-specific nature, or those pertaining to previous fish recorded in the file, can be entered from the keyboard starting at column five.

a. **VARIABLE RELEASE TIME** (Required if Tagging file doubles as a Release Information file).

Notations are included in this category, but follow a strict format: The record begins with an upper case "V" in column five, followed by the two digit release variable in columns six and seven, an equals sign "=" in column eight, the two digit month "MM" in column nine and ten, with a slash "/" in column 11, the two digit day "DD" in column 12 and 13, followed by a "/" in column 14, the two digit year "YY" in column 15 and 16, followed with a space in column 17, with the two digit military-style hour of release, in Pacific Standard Time, in columns 18 and 19, a colon ":" in column 20, and the two digit minutes of release in columns 21 and 22 (i.e. V01=04/08/91 16:45. Only one **Variable Release Time** per line in the **Note Record**).

5. **Additional Record Types**

Additional Record Types include **time stamp** (pre-formatted), **blank lines**, and **closing records**. All additional record types start in col. 5. The closing records are the same format as header records and are created by the PITTAG.EXE program.

a. **FILE CLOSED Date**, ":" at column 36, MM/DD/YY starting at column 38.

b. **FILE CLOSED Time**, ":" at column 36, HH:MM starting at column 38.

B. Release Information File

A release information file consists of information about a tag file, or a group of tag files, which was not available at the time of tagging. This type of file contains three records categories: File Type, Header, and Tag File Name(s). The File Type record must be formatted as previously mentioned {section II. Data Files}. The Header records are formatted with the description beginning in column 1, the colon (:) at column 36, and the data beginning in column 38. Tag File Name records are formatted the same as the previously mentioned header record. Additional tag file titles must form a column, each with the same format. (See Figure 2.). The Release Information File must be created and sent to PTAGIS prior to any of the fish from the tagging files reaching an interrogation site.

1. File type record (For format, See section II. Data)

a. FILE TYPE: RELEASE INFORMATION {Mandatory}

2. Header Records

- a. FILE TITLE: REL<YY><ID >.xxx {Format includes REL, year of release (two digits), and the coordinator ID. The extension is up to the tagging coordinator and is optional. See section III.A. for the list of coordinator ID codes.}
- b. RELEASE DATE: MM/DD/YY {Mandatory}
- c. RELEASE TIME: HH:MM {Mandatory, Pacific Standard Time}
- d. RELEASE SITE: Name {See Section III.J.2., 6 characters max. Mandatory}
- e. RELEASE RIVER KM: {See Section III.J.2. below. Mandatory}
- f. TRANSPORT DURATION: HH:MM {Time elapsed while fish are being transported. Optional}
- g. TRANSPORT TYPE: {10 characters. Optional}
- h. RELEASE WATER TEMP:nn.n, (C) {Mandatory}
- i. ASSOCIATED MARK: (TEXT) {Optional, 76 characters}

3. Tag File Name

12 characters, (Name of tag file(s) associated with release tags. Follows the naming convention in section II.A.2.b. One or more tag file records are allowed, see Figure 2).

4. Release Remarks

Note field begins in column 5, up to 10 lines with no more than 200 characters, total.

C. Interrogation Files

Interrogation Files are files created at the monitor sites by the automatic detection equipment (The Format is explained below. See Figure 3). All records are computer generated. Interrogation site codes (See III.I), system ID codes, and coil ID codes (See III.L.) are assigned by PTAGIS when the system is installed at a dam. Tags are sometimes used to test equipment while in an operational mode. These tags must be reported prior to use (See II F. Test Tags below). Interrogation files consist of 4 categories of records: **File Type, Start and End Messages, Interrogation Data Records, and Other Record Types.**

1. **File Type Record** (For format, See section II. Data)

FILE TYPE: INTERROGATION {Mandatory}

2. **Start and End message**

a. **FILE TITLE:** File name, followed by a space line. {Mandatory}.

File titles are 12 characters {Format includes a 3 character site code and the julian date. The extension is reserved for partitions (eg. PRJ89114.A)}.

b. **FILE CREATED:** date and time (eg. 24 April 1989 AT 00:00) {Mandatory}

c. **FILE CLOSED:** date and time (eg. 23 March 1989 at 16:45.) {Mandatory}

3. **Interrogation Data Records** {Computer generated. Mandatory}

a. | {column 1}

b. **CONTROLLER:** {columns 3-4, alpha-numeric}

c. **DATE:** MM/DD/YY {columns 6-13}

d. **TIME:** HH:MM:SS {columns 15-22} Pacific Standard Time

e. **PITCODE:** {columns 24-33, alpha-numeric}

f. **CHECKSUM:** {columns 35-36, alpha-numeric}

g. **COILID:** {columns 39-40, 42-43, 45-46, 48-49, 51-52, 54-55, 57-58, and 60-61; alpha-numeric}

4. **Other Record Types** (Do not begin with "|" in column 1).

a. System checks

b. Time Checks

c. Blank Line

D. Monitored Release File

Same format as interrogation file, except that first record is FILE
TYPE: "MONITORED RELEASE".

E. Mortality File

Mortality files are created using the tagging program (PITTAG.EXE). A mortality file consists of the following categories: File Type Record; Header Records; Mortality Records; Note Records; and Additional Record Types (see Figure 5).

1. File Type Record (For format, See section II. Data)

a. FILE TYPE: MORTALITY (Mandatory)

By typing "PITTAG M" (PITTAG <space> capital M) to start the PITTAG.EXE program, the file type Mortality will automatically be entered.

2. Header Records

a. Session or Project Message: {Text; 76 characters max. Mandatory}

b. FILE TITLE: xxxYYDDD.zzz {Format includes a 3 character ID (initials) of the individual creating mortality file and the julian date. The extension is up to the coordinator and is optional}.

c. CREATION DATE: MM/DD/YY {Mandatory}

d. CREATION TIME: HH:MM {Mandatory}

e. COLLECTION SITE: 6 character code {See Section III.J.2. for correct code list, 6 character max. Mandatory}.

f. COLLECTION RIVER KM: {See III.J.2. Mandatory}.

g. CAPTURE METHOD: {6 character max. - See III.G. Mandatory}

h. RECOVERY ORGANIZATION: Organization creating mortality file {6 character max. - see III.H. Mandatory}

i. COORDINATOR ID: {See III.A. Mandatory}

3. Mortality Records

a. SEQUENCE NUMBER: {Columns 1-4, numeric. Mandatory}

b. PITCODE: {Columns 7-16, alpha-numeric. Mandatory}

c. CHECKSUM: {Columns 19-20, alpha-numeric. Mandatory}

d. FORKLENGTH: {Columns 21-28, numeric. Optional}

e. WEIGHT: {Columns 29-38, numeric with 1 digit right of the decimal point. Optional}

f. MORT. DATE: MM/DD/YY {columns 41-48. optional}

g. COMMENTS: {Conditional (Flag Codes, See III.E. below) and textual, See II.A.3.j.(3).for format. Optional}

4. Note Records {See Section II.A.4. Note records.}

5. Additional Record Types {See Section II.A.5. Additional Record Types.}

F. Test Tag File

Test tags are used to test the monitoring systems at each of the sites. These tags are removed from the portion of the database accessed by most users. Therefore, in order to expedite data handling, it is MANDATORY that all Test tag PIT ID codes must be reported to PTAGIS in the form of a Test Tag File, prior to their use. Test tag files consist of the following record categories: File Type, Year Record, and Test Tag Records (See Figure 5).

→ These Test tags shall never be used in fish.

1. File type record (For format, See section II. Data)

a. FILE TYPE: TEST TAG (Mandatory)

b. Organization: Valid Org.

2. Year Record

A two digit integer specifying the year for which the test-tags are applicable.

a. YEAR: {"YEAR" at beginning in column 5, a colon ":" in column 36, and "YY" in column 38 and 39}.

3. Test Tag Records

a. TEST TAG ID (PITCODE): {Columns 1-10, alpha-numeric; at least one test tag record is Mandatory}

b. CHECKSUM: {Columns 12-13, alpha-numeric, Mandatory}

• If you need test tags call PGMFC Kenneth.

diff from

Validations:

→ Assure tag never been reported as a tag-data table.

III. Code Lists

The following are lists of standardized codes that must be used in the Columbia River Basin PIT Tag Information System (PTAGIS). If tagging coordinators have additional codes they would like to use, please submit these to your organization's PIT tag Work Group member for review by the committee and inclusion in the next Specification Document.

A. **Coordinator ID Codes** are the initials (use all, three max.) for the project leader responsible for the data (not necessarily the person conducting the tagging or creating the tagging file). Only codes reported in this specification document will be recognized. (The date column of the following table represents the dates these tag coordinators will be found in the data base.)

Coordinator Identification Codes:

ID	NAME	ORGANIZATION	DATE
SA	Steve Achord	NMFS	1987-PRESENT
LRB	Larry Basham	FPC	1988-PRESENT
EWB	Ed Buettner	IDFG	1988-PRESENT
DAC	Dave Cannamela	IDFG	1990-PRESENT
TGC	Tim Cochnauer	IDFG	1989
WPC	William Connor	NPT	1990-1991
TAF	Tom Flagg	NMFS	1989-PRESENT
RBK	Russ Kiefer	IDFG	1988-PRESENT
EJL	Eric Leitzinger	IDFG	1991-PRESENT
CSM	Scott McCutcheon	NMFS	1985-1990
WDM	William D. Muir	NMFS	1990-PRESENT
DAN	Dwain A. Neitzel	PNL	1991-PRESENT
EFP	Earl Prentice	NMFS	1989
TER	Tom Reahle	NMFS	1990-PRESENT
LCS	Lowell Stuehrenburg	NMFS	1987-1989

B. Species Codes:

1 = Chinook
2 = Coho
3 = Steelhead
4 = Sockeye
5 = Chum

C. Run Codes:

1 = Spring
2 = Summer
3 = Fall
4 = Winter
5 = Unknown (use for River migrants or mixed stock rearing areas where run is unknown).

D. Rearing Type Codes:

H = Hatchery reared fish
W = Wild fish or Natural Production
U = Unknown or Mixed hatchery & wild

E. Flag Codes: (An abbreviated comment field used in the Tagging and Mortality files.)

O = Possible 0 aged chinook
1< = Descaled less than 10%
1> = Descaled greater than 10%
1P = Descaled - patchy
1S = Descaled - scattered
AD = Adipose fin clip
AF = Adipose fin damage
AN = Anal fin damage
B = Bleeding after tagged
BL = Bloated
BS = Body Scars
CA = Caudal fin damage
CY = Cyst
D = Dropped
DB = Double Tagged
DI = Deep Insertion
DK = Dark
DO = Dis-Orbited Eye
EB = Electro-shocker burn
EL = Damaged eye - left (found after tagged)
EM = Excessive mucous
ER = Damaged eye - right (found after tagged)
FE = Female
FU = Fungus
HE = Hemorrhage
I = Body injury - prior to tagging
IM = Immature
JA = Jack
JW = Jaw damage
KD = Possible BKD
L = Fish lost/or rejected tag prior to release
LA = Lacerations
LT = Light Body Color
M = Mortality
MA = Male
MB = Bleeding at tagging/died prior to release
MK = Removed from release group (killed)
MS = Sample mort (fish killed for experimental purposes)
MT = Mature
NF = Non-Functional tag also in fish
NM = No mucous
OP = Opercule damage
PA = Parasite
PB = Previously branded

PR = Precocious
PT = Pectoral fin damage
PV = Pelvic fin damage
Q1 = Complete and legible freeze brand
Q2 = Brand is legible but defective in some manner
Q3 = Brand is not legible
Q4 = Brand rotation or position is wrong
Q5 = No brand
Q6 = Brand caused light, moderate or excessive burning
RE = Recapture
SC = Scoliosis
SM = Subsequent mortality (found dead or died at interrogation site)
SV = Silvery body color
TM = Tagged in muscle
UL = Ulcer

F. Hatchery Site Codes:

ABEH ABERNATHY HATCHERY
BEAH BEAVER CREEK HATCHERY
BIGC BIG CREEK HATCHERY
BONH BONNEVILLE HATCHERY
CARS CARSON NATIONAL FISH HATCHERY
CASC CASCADE HATCHERY
CHEL CHELAN PUD HATCHERY
CLAH CLACKAMAS HATCHERY
CLWH CLEARWATER HATCHERY
COWH COWLITZ HATCHERY
CROP CROOKED RIVER REARING POND
DEXT DEXTER POND
DWOR DWORSHAK NATIONAL FISH HATCHERY
EAGH EAGLE CREEK HATCHERY
ELOK ELOKOMIN HATCHERY
ENTH ENTIAT NATIONAL FISH HATCHERY
GNAT GNAT CREEK HATCHERY
GRAY GRAYS RIVER HATCHERY
HAGE HAGERMAN NATIONAL FISH HATCHERY
IRRI IRRIGON HATCHERY
KALA KALAMA FALLS HATCHERY
KLAS KLASKANINE HATCHERY
KLIH KLUCKITAT HATCHERY
KOOS KOOSKIA NATIONAL FISH HATCHERY
LEAB LEABURG HATCHERY
LEAV LEAVENWORTH NATIONAL FISH HATCHERY
LEWH LEWIS RIVER HATCHERY
LOOH LOOKINGGLASS HATCHERY
LOWK LOWER KALAMA HATCHERY
LWSH LITTLE WHITE SALMON HATCHERY
LYFE LYONS FERRY HATCHERY
MARI MARION FORKS HATCHERY
MAVA MAGIC VALLEY HATCHERY
MCCA MCCALL HATCHERY

MCKE MCKENZIE HATCHERY
 MONT MONTLAKE HATCHERY
 NCHH NACHES HATCHERY
 NISP NIAGARA SPRING HATCHERY
 OASP OAK SPRINGS HATCHERY
 OXBO OXBOW HATCHERY
 PAHH PAHSIMEROI HATCHERY
 POWP POWELL REARING POND
 PRDH PRIEST RAPIDS HATCHERY
 RAPH RAPID RIVER HATCHERY
 REDP RED RIVER REARING POND
 RING RINGOLD HATCHERY
 ROAR ROARING RIVER HATCHERY
 ROBU ROUND BUTTE
 RRHH ROCKEY REACH HATCHERY
 SAND SANDY HATCHERY
 SAWT SAWTOOTH HATCHERY
 SKAM SKAMANIA HATCHERY
 SOSA SOUTH SANTIAM HATCHERY
 SPEE SPEELYAI HATCHERY
 SPRC SPRING CREEK NATIONAL FISH HATCHERY
 STAY STAYTON POND
 TOUT TOUTLE HATCHERY
 TRAS TRASK HATCHERY
 TROJ TROJAN POND
 TUCH TUCANNON HATCHERY
 TURO TURTLE ROCK HATCHERY
 VANC VANCOUVER HATCHERY
 WAHA WASHOUGAL HATCHERY
 WAHK WAHKEENA POND
 WALH WALLOWA HATCHERY
 WELF WELLS HATCHERY, WDF
 WELG WELLS HATCHERY, WDW
 WILH WILLAMETTE/DEXTER HATCHERY
 WILL WILLARD NATIONAL FISH HATCHERY
 WINT WINTHROP NATIONAL FISH HATCHERY
 WSPH WARM SPRINGS HATCHERY
 YAKH YAKIMA HATCHERY

G. Capture Method Codes:

BPSUB = Bypass sub-sample
 BSEINE = Beach Seine
 BTRAP = Box Trap
 CMTRAP = Cray-Meecken Trap
 DIPNET = Dip Net
 DIPTRP = Dipper Trap
 GWDIP = Gatewell Dip net
 GWFYKE = Gatewell Fyke net
 PSEINE = Purse Seine
 SCOTRP = Scoop Trap
 SCREW T = Screw Trap

SHOCK = Electro-Shock
WTRAP = Weir Trap

H. Organization and Recovery Organization Codes:

BIOMRK = Biomark
FPC = Fish Passage Center
IDFG = Idaho Dept. of Fish and Game
NMFS = National Marine Fisheries Service
NPT = Nez Perce Tribe
ODFW = Oregon Dept. of Fish and Wildlife
PNL = Pacific Northwest Laboratory
PSMFC = Pacific States Marine Fishery Commission
USFWS = U.S. Fish and Wildlife Service
WDF = Washington Dept. of Fish
WDW = Washington Dept. of Wildlife

I. Interrogation Sites Codes:

McNary Juvenile	= MCJ
McNary Juvenile sub-sample	= MC2
Little Goose Juvenile	= GOJ
Little Goose Juvenile sub-sample	= GO2
Lower Granite Juvenile	= GRJ
Lower Granite Adult	= GRA
Prosser Juvenile	= PRJ
Prosser Juvenile sub-sample (B)	= PR2
Snake River Trap Juvenile	= SNJ
Clearwater River Trap Juvenile	= CLJ
Yakama River Trap (1) Juvenile	= Y1J
Sunnyside Juvenile	= SSJ
Wapato Juvenile	= WPJ

J. Tag, Release, and Collection Site Codes and Associated River KM's:

1. River kilometer - Hierarchical coding scheme: Kilometers from mouth of Columbia to Tag, Release or Collection site or (up to 5th order stream), with each tributary delimited with a period. (eg. code for location of Lower Granite dam is 522.173 = 522 km from the mouth of the Columbia to the mouth of the Snake, and 173 km from the mouth of the Snake to the dam.) If additional sites are required contact PTAGIS to add requests to the list.

2. List of Tag, Release or Collection Sites with associated River Kilometer and GIS Hydrounits.

Codes	Tag, Release, or Collection Site	River Kilometer	Total Rkm	GIS Hydrounits
ALTULC	ALTURAS LAKE C	522.303.633	1458	17060201
BEARVC	BEAR VALLEY C	522.303.319.170	1314	17060205
BEAVER	BEAVER C	522.303.642	1467	17060201
BEAVEC	BEAVER C	522.303.319.178	1322	17060205
BSHEEP	BIG SHEEP C	522.308.32	862	17060102
BIGC	BIG C	522.303.319.29	1173	17060206
BO1	BONNEVILLE D PH1	234	234	17080001
BO2	BONNEVILLE D PH2	234	234	17080001
BOUNDC	BOUNDARY C	522.303.319.154	1298	17060206
CAPEHC	CAPEHORN C	522.303.319.180	1324	17060205
CHAMPC	CHAMPION C	522.303.631	1456	17060201
CHANDL	CHANDLER CANAL	539.76.0	615	17030003
CLELMD	CLE ELUM D	539.299.13	851	17030001
CLELMR	CLE ELUM R	539.299	838	17030001
CLWR	CLEARWATER R	522.224	746	17060306
CLWTRP	CLEARWATER T	522.224.10	756	17060306
CLWRNF	CLEARWATER R, N FK	522.224.65	811	17060308
CLWRSF	CLEARWATER R, S FK	522.224.120	866	17060305
CROOKR	CROOKED R	522.224.120.94	960	17060305
CROTRP	CROOKED RIVER T	522.224.120.94.1	961	17060305
DAGGEC	DAGGER C	522.303.319.155	1299	17060206
DECKEC	DECKER C	522.303.624	1449	17060201
DWOR	DWORSHAK H	522.224.65	811	17060306
ELKC	ELK C	522.303.319.170.14	1328	17060205
FALLC	FALL C	522.303.319.163	1307	17060206
4JULYC	FOURTH OF JULY C	522.303.630	1455	17060201
FRENCC	FRENCHMAN C	522.303.647	1472	17060201
GRANDR	GRANDE RONDE R	522.271	793	17060106
HAGE	HAGERMAN H *			
HAZARC	HAZARD C	522.303.140.31	996	17060209
HCD	HELLS CANYON D	522.397	919	17050201
HUCKLC	HUCKLEBERRY C	522.303.626	1451	17060201
IHR	ICE HARBOR D	522.16	538	17060110
ICICLC	ICICLE C	754.41	795	17020011

CODES	Tag, Release, or Collection Site	River Kilometer	Total Rkm	GIS Hydronmfts
IMNAHR	IMNAHA R	522.308	830	17060102
JDA	JOHN DAY D	347	347	17070101
KNOXB	KNOX BRIDGE	522.303.215.112	1152	17060208
LEAV	LEAVENWORTH H	754.41.5	800	17020011
LGS	LITTLE GOOSE D	522.113	635	17060107
LSALR	LITTLE SALMON R	522.303.140	965	17060210
LOOKGC	LOOKINGGLASS C	522.271.137	930	17060106
LOOH	LOOKINGGLASS H	522.271.137.3	933	17060106
LOSTIR	LOSTINE R	522.271.131.42	966	17060106
LGR	LOWER GRANITE D	522.173	695	17060107
LMN	LOWER MONUMENTAL D	522.67	589	17060110
LYFE	LYONS FERRY H	522.95	617	17060107
MCCA	MCCALL H *			
MAVA	MAGIC VALLEY H *			
MARSHC	MARSH C	522.303.319.180	1324	17060205
MCN	MGNARY D	470	470	17070101
MINUMR	MINUM R	522.271.131.16	940	17060106
MONT	MONTLAKE H *			
NATCHR	NATCHES R	539.187	726	17030002
NISP	NIAGARA SPRINGS H *			
PAHSIR	PAHSIMEROI R	522.303.489	1314	17060203
POLEC	POLE C	522.303.642	1467	17060201
PKELLY	PORT KELLY	502	502	17070101
POWP	POWELL REARING POND	522.224.157.113	1016	17060302
PRD	PRIEST RAPIDS D	639	639	17020016
PROSRD	PROSSER D	539.76	615	17030003
PORTRP	PROSSER T	539.76.2	617	17030003
RAPIDR	RAPID R	522.303.140.7	972	17060210
RAPH	RAPID RIVER H	522.303.140.7.6	978	17060210
REDR	RED R	522.224.120.101	967	17060305
REDDP	RED R REARING POND	522.224.120.101.27	994	17060305
REDFLC	REDFISH LAKE C	522.303.615	1440	17060201
ROARIC	ROARING C	522.303.631	1456	17060201
RIS	ROCK ISLAND D	730	730	17020010
RRE	ROCKY REACH D	763	763	17020010
ROSAD	ROSA D	539.206	745	17030001
SALR	SALMON R	522.303	825	17060209
SALREF	SALMON R, E FK	522.303.552	1377	17060202
SALRMF	SALMON R, M FK	522.303.319	1144	17060206
SALRSF	SALMON R, S FK	522.303.215	1040	17060208
SAWT	SAWTOOTH H	522.303.618	1443	17060201
SAWTRP	SAWTOOTH T	522.303.618	1443	17060201
SECESR	SECESH R	522.303.215.59	1099	17060208
SMILEC	SMILEY C	522.303.644	1469	17060201
SNKTRP	SNAKE T	522.225	747	17060103
SNAKER	SNAKE R	522	522	17060110
STANLE	STANLEY (GAGE2945)	522.303.609	1434	17060201

Tag, Release,
or Collection,
Site

GIS

CODES	or Collection Site	River Kilometer	Total Rkm	Hydrounits
SULFUC	SULFUR C	522.303.319.150	1294	17060206
SSD	SUNNY SIDE D	539.167	706	17030003
SSIDEC	SUNNY SIDE CANAL	539.167.0	706	17030003
TDA	THE DALLES D	308	308	17070101
HWY93B	US HWY 93 BRIDGE	522.303.647	1472	17060201
VALEYC	VALLEY C	522.303.609	1434	17060201
VGISNB	VAN GISSON BRIDGE	539.14	553	17030003
WALLOR	WALLOWA R	522.271.131	924	17060106
WAN	WANAPUM D	669	669	17020016
WAPATC	WAPATO CANAL	539.172.0	711	17030003
WAPATD	WAPATO D	539.172	711	17030003
WAPATS	WAPATO SCREEN	539.172.1	712	17030003
WENATR	WENATCHEE R	754	754	17020011
WILLIC	WILLIAMS C	522.303.622	1447	17060201
WPOOSC	WISH POOSH C	539.299.14	852	17030001
WOPTXD	WOPATOX D	539.187.28	754	17030002
YAKIMR	YAKIMA R	539	539	17030003

* Hatchery from which fish are outplanted only. No direct release into the Columbia River basin from these facilities.

K. PIT Tag Work Group Members, 1991.

Name	Organization	Street	City	State	ZIP	PHONE
Lee Blankenship (206)586-1995	WDF	115 General Admin. Bldg.	Olympia	WA	98504	
Ed Buettner (208)743-6502	IDFG	1540 Warner Ave.	Lewiston	ID	83501	
Judy Cress 7025	PSMFC	2501 S.W. First Ave., Suite 200	Portland	OR	97201	(206)326-
Doug Marsh	NMFS-CZES	2725 Montlake Boulevard E.	Seattle	Wa	98112	(206)5530887
Dave Marvin (509)230-4289	FPC/CRITFC	2501 S.W. First Ave., Suite 230	Portland	OR	97232-2295	
Jim Nielsen (206)586-1995	WDW	600 N. Capital Way	Olympia	WA	98504	
Steve Pastor 7605	USFWS	9317 Highway 99, Suite 2	Vancouver	WA	98665	(206)696-
Dave Ward (503)657-2038	ODFW	17330 S.E. Evelyn St.	Clackamas	OR	97015	

L. PIT Tag System Codes are assigned by the agency maintaining the monitoring equipment. During 1991, the majority of the monitoring equipment will be maintained by PTAGIS. Therefore, any questions, changes, or corrections should be addressed to that agency.

PIT TAG SYSTEM CODING BY LOCATIONS AND COIL NUMBERS
(As of 3/01/91)

MONITOR SITE	LOCATION	COIL NUMBERS	RESPONSIBLE ORGANIZATION
LOWER GRANITE ADULT	EAST	00-02-04-06	PSFMC
	WEST	08-0A-0C-0E	PSFMC
LOWER GRANITE JUV.	A MAIN	18-1A-1C-1E	PSFMC
	A SUB.	20-22-24-26	PSFMC
	B MAIN	10-12-14-16	PSFMC
	GATE CONTROL A	28-2A	PSFMC
	GATE CONTROL B	2C-2E	PSFMC
	FISH DIVERSION A	30-32-34	PSFMC
	FISH DIVERSION B	36-38-3A	PSFMC
LITTLE GOOSE JUV.	A MAIN	40-42-44-46	PSFMC
	B MAIN	48-4A-4C-4E	PSFMC
	SAMPLE ROOM	50-52-54-56	PSFMC
McNARY JUV.	A MAIN	68-6A-6C-6E	PSFMC
	A SUB.	70-72-74-76	PSFMC
	B MAIN	60-62-64-66	PSFMC
	SAMPLE ROOM	80-82	PSFMC
SNAKE JUV. TRAP	MAIN	D4-D6	IDFG
CLEARWATER JUV. TRAP	MAIN	D0-D2	IDFG
PROSSER	MAIN	C8-CA-CC-CE	PSFMC
	SAMPLE ROOM	C4-C6	PSFMC
YAKAMA JUV. TRAP (1)	MAIN	B8-BA	NMFS
SUNNY SIDE	MAIN	S0-S2	PNL
WAPATO	MAIN	W0-W2	PNL

Figure 1. Tagging file Example.

```

FILE TYPE                               : TAGGING
-----
EXAMPLE FOR SPEC. DOC. OF PIT TAGGING AT THE SNAKE RIVER TRAP
-----
FILE TITLE                               : EWB90050.SNK
CREATION DATE                            : 02/19/91
CREATION TIME                            : 11:45
TAGGER                                    : NELSON L
SPECIES                                   : 1
RUN                                       : 5
REARING TYPE                             : U
HATCHERY SITE                            :
STOCK                                     :
BROOD YR                                 :
MIGRATORY YR                             : 91
TAG SITE                                  : SNKTRP
RACEWAY/TRANSECT                         :
CAPTURE METHOD                            : DIPTRP
TAGGING TEMP                             : 7.5
POST TAGGING TEMP                        :
RELEASE WATER TEMP                       : 7.5
TAGGING METHOD                            : AUTO
ORGANIZATION                             : IDFG
COORDINATOR ID                           : EWB
RELEASE DATE                             : 02/19/91
RELEASE LOCATION                         : SNKTRP
RELEASE RIVER KM                         : 522.225

1  7F7A2D4912  86    123          01
2  7F7A2D4775  E7    120          32W01
3  7F7A2C3177  D2    109          01
4  7F7A2C325B  B7    139          01
5  7F7A2D5116  92    111          02
6  7F7A2D4C02  79    245          32H02 || SC EATEN BY THIS STHD
7  7F7A2D4D0B  83    111          02
8  7F7A2D4817  8A    115          02 | ER
9  7F7A2D4B7E  F4    100          02
<TIME CHECK> 28 NOVEMBER AT 13:01
10 7F7A290B4A  7C    113          16.7 02 | DI D BS

V01=12:00
V02=13:15

CLOSE DATE                               : 02/19/91
CLOSE TIME                               : 13:20

```

Figure 2. Release information file example.

FILE TYPE	: RELEASE INFORMATION
RELEASE DATE	: 07/10/89
RELEASE TIME	: 11:10
RELEASE SITE	: MCN
RELEASE RIVER KM	: 526
TRANSPORT DURATION	: 00:15
TRANSPORT TYPE	: TRUCK
RELEASE WATER TEMP	: 15
ASSOCIATED MARK	: RAF1
TAG FILE NAME	: CSM88189.FC1
TAG FILE NAME	: CSM88188.BS1
TAG FILE NAME	: CSM88189.BS2

RELEASE MADE WITHIN BYPASS SYSTEM AT UNIT 2

Figure 3. Interrogation and Monitored Release file example.
Format is consistent for both files except the File Type is INTERROGATION for the Interrogation file and MONITORED RELEASE for the Monitored Release file.

FILE TYPE : INTERROGATION
FILE TITLE : PRJ89114.A
FILE CREATED : 24 April 1989 AT 00:00

04/24/89 01:00:00
| F2 04/12/89 01:26:47 7F7E495445 DF C8 CA
04/24/89 02:00:00
| F2 04/12/89 02:26:49 7F7E4D1A30 94 C8 CA CC
04/24/89 03:00:00
04/24/89 04:00:00
04/24/89 05:00:00
04/24/89 06:00:00
04/24/89 07:00:00
04/24/89 08:00:00

SYSTEM ID
STATION #F2
04/12/89 14:26:38

TOTAL NUMBER ID CARDS = 04
CARD ADDRESSES|C8 CA CC CE

C8-SELFTTEST|00

CA-SELFTTEST|00

CC-SELFTTEST|00

CE-SELFTTEST|00

04/24/89 08:10:00
04/24/89 09:00:00
04/24/89 10:00:00
| F2 04/12/89 10:26:52 7F7E4D5236 D2 C8 CA CC CE
04/24/89 11:00:00
04/24/89 12:00:00
04/24/89 13:00:00
04/24/89 14:00:00
| F2 04/12/89 14:26:49 7F7E201243 72 CC CE
04/24/89 15:00:00
04/24/89 16:00:00
04/24/89 17:00:00
04/24/89 18:00:00
| F2 04/12/89 18:26:52 7F7E243D31 8F C8 CA CC CE
04/24/89 19:00:00
04/24/89 20:00:00
04/24/89 21:00:00

FILE CLOSED : 25 April 1989 AT 00:00

Figure 4. Mortality file example.

```

FILE TYPE                               : MORTALITY
-----
1990 SPECIFICATION DOCUMENT
-----
FILE TITLE                               : CSM89333.BS1
CREATION DATE                            : 11/29/89
CREATION TIME                             : 11:45
COLLECTION SITE                           : GOJ
COLLECTION RIVER KM                       : 522.113
CAPTURE METHOD                             : BPSUB
ORGANIZATION                              : NMFS
COORDINATOR ID                            : CSM

SPECIFICATION DOCUMENT EXAMPLES

1  7F7B2D4912  86      123          10/20/89  | M  FU
2  7F7B2D4775  E7      120          10/21/89  | M  | FOUND IN SQUAWFISH
3  7F7B2C3177  D2      109          10/24/89  | MS | BKD SAMPLE 89-234
4  7F7B2C325B  B7      139          10/30/89  | MS | BKD SAMPLE 89-555
5  7F7B2D5116  92      111          10/30/89  | MS | BKD SAMPLE 89-558
6  7F7B2D4C02  79      1045         10/30/89  | M  | DIED ON SEPERATOR
7  7F7B2D4D0B  83      111          10/24/89  | M
8  7F7B2D4817  8A      115          10/30/89  | M
9  7F7B2D4B7E  F4      100          10/24/89  | M | TAG IN INTESTINE
<TIME CHECK> 28 NOVEMBER AT 13:01
10 7F7B290B4A  7C      113          16.7    10/24/89  | M
11 7F7A274C42  B3      108          14.6    10/30/89  | MS | BLOOD LOT 5-51
12 7F7A274B39  A9      113          22.2    10/24/89  | MS | BKD SAMPLE 89-675
13 7F7A267C64  04      121          21.5    10/30/89  | MS | BKD SAMPLE 89-690

CLOSE DATE                               : 11/28/89
CLOSE TIME                               : 15:36

```

Figure 5. Test tag file example.

FILE TYPE	:	TEST TAG
YEAR	:	91
7F7A50484F AC		
7F7B678901 1E		
7F7C34AB56 34		
7F7D567890 44		
7F7A666543 3C		
7F7B6745D3 DD		
7F7C5689FE 22		
7F7D009D3C 65		

GLOSSARY

- ASSOCIATED MARKS** Other identification marks associated with the group of fish being released, such as freeze brand marks.
- BROOD YEAR** The last two digits of the calendar year when the eggs were laid.
- CAPTURE METHOD** The abbreviated code (see section III.G.) for the method used to collect the fish.
- CHECKSUM** Value comprising the 11th and 12th characters of the PITcode. The Checksum is computer generated with the 11th character representing the sum of the first five characters of the PITcode and the 12th character represents the sum of the last five characters of the ten character PITcode.
- COLLECTION SITE** The six character code of the collection site of mortality data. See Section III.J.2. for the list of correct codes.
- COIL** A loop antenna, made from a coil of wire, which emits a signal that excites the PIT tag and receives the signal from the PIT tag. Coils or loops are found in all interrogation equipment from table top detectors to automatic interrogation systems.
- COILID** The unique identification number associated with each coil of the automatic interrogation systems.
- CONTROLLER** The computer hardware in an automatic interrogation system that operates two of the four coils associated with that interrogation system. A unique identification number is associated with each controller.
- CONDITIONAL COMMENT** A comment in the Tag Records section of the Tagging file that corresponds to an individual fish. A list of approved conditional comment appear in section III.E. (Flag Codes). They can be entered from either the key board or the digitizer during the operation of the PITTAG.EXE program. Other conditional comments, important to the individual researcher, can be used but will not be recognized by the PTAGIS data system.
- COORDINATOR ID** A three letter code consisting of the initials of the names of the coordinator. The coordinators are the individuals who are in charge of the research that the PIT tag is being used for. Coordinators are not necessarily the people doing the tagging.
- CREATION DATE** The date the file was created. It will

automatically be entered into the file by the computer and will be the current date on the computer. Therefore, it is important to have the proper date in your computer.

CREATION TIME The time the file was created. It will be added to the file by the computer and should be Pacific Standard Time in military format with a colon between hours and minutes. Therefore it is important that the computer running the PITTAG.EXE program be set to Pacific Standard Time.

FILE TITLE The file ID or name given to the particular file created. Each File Title must be unique from all others in the Columbia River Basin and therefore it is very important to follow the formats described in the PIT tag Specification Document for each individual file type.

FILE TYPE RECORD This record type designates the type of file being created. It is generated by the PITTAG.EXE program for Tagging and Mortality files and by the researcher creating the other types of files. See the Specification Document for the correct format.

FLAG CODE A PIT Tag conditional comment code. These codes are use to provide information about the health and condition of individual fish.

FORKLENGTH The length of the fish from the tip of the snout to the fork of the tail, recorded to the nearest millimeter.

HATCHERY SITE A four character abbreviation to represent the hatchery at which tagging is taking place, if tagging is being done at a hatchery. See section III.F. for the approved list of hatchery abbreviations.

HEADER RECORD The record found at the beginning of the file and describing general information representative of the whole file. Only the Tagging, Release information, and Mortality files have header records.

INTERROGATION FILE A file created at a monitoring (recapture) site by the automatic detection equipment and containing the PIT tag codes, date and time of interrogation, and the coil ID on which the tag was interrogated.

MIGRATION YEAR Last two digits of the earliest calendar year when fish are expected to smolt and outmigrate to the ocean.

MONITORED RELEASE A release situation in which the PIT tagged fish are passively exposed to an interrogation system as they leave a holding area such as a hatchery. In a Monitored Release, all fish are interrogated as they leave a holding area so the individual PITcode of each fish leaving, is

recorded along with the date and time of interrogation.

MONITORED RELEASE FILE A file containing release information from a monitored release.

MORTALITY FILE A file that contains information and PITcodes of fish that died after being PIT tagged. Mortality files are created for fish that die at hatcheries or that are found dead or die somewhere along their migration path, like at one of the dams, or are killed for sampling purposes.

MORTALITY RECORDS That portion of a Mortality file that contains the PIT tag code and any other pertinent information about the individual fish, such as fork length, weight, etc.

NOTE RECORDS A comment section in the Tag Records portion of the Tagging file. Note records can pertain to a group of fish instead of an individual fish. The Variable Release Time notation is the most common type of Note Record.

ORGANIZATION The code for the agency or organization that is creating the file.

PIT TAG PIT = Passive Integrated Transponder. A computer chip attached to a wire antenna and encapsulated in a glass tube. The tag is excited when it is passed through the electromagnetic field of a detector and the information on the computer chip is transmitted to the detector.

PIT TAG TECHNICAL WORK GROUP A sub-committee of the Fish Passage Advisory Committee of the Columbia Basin Fish and Wildlife Authority. The work group is made up of representatives of the agencies and tribes. The work group's function is to provide guidance in the development and operation of PTAGIS and the PIT tag system.

PITCODE A unique ten character alpha-numeric hexadecimal code recorded on the computer chip in the PIT tag.

POSITIONAL COMMENT A comment that has a designated and reserved location in the Tag Records section of the Tagging file and pertains to an individual fish. Such Positional comments are Species, Run, Rearing type, and Release Time Variable. Individual researchers can designate their own positional comments but the PTAGIS data system will not recognize them. Positional comments are entered from the key board or from the digitizer.

POST TAGGING TEMP The temperature (C) of the raceway or live box the fish are held in after tagging but prior to release to a stream. This variable should be left blank if the fish are released directly to the stream after tagging.

PTAGIS The organization which operates and maintains the PIT tag data repository, all detection equipment on the dams, and creates and updates software for the Columbia River Basin-wide PIT tag system. The PTAGIS organization is managed by the Pacific States Marine Fisheries Commission and funded by the Bonneville Power Administration.

RACEWAY/TRANSECT The raceway number or designation, or the transect number or name where the fish being PIT tagged came from.

REARING TYPE A one character code to indicate whether the fish was raised in a hatchery or reared in the wild. If the fish reared in an environment where both wild and hatchery fish existed, then it would be unknown because you are not sure if the fish is wild or hatchery.

RECOVERY ORGANIZATION The organization creating the mortality file.

RELEASE DATE The date fish were released to a stream to rear or outmigrate naturally. This variable is left blank in the header record of the tagging file if the fish are released at a later date. If fish are released at a later date this date is recorded in a Release Information or the Monitored Release file.

RELEASE RIVER KM The location of release, in river kilometers from the mouth of the Columbia River. This is a hierarchical coding scheme from the mouth of the Columbia River to the release site (up to 5th order streams) with each tributary delimited with a period. An example would be a Release KM for Lower Granite Dam is 522.173 which means that it is 522 km from the mouth of the Columbia River to the mouth of the Snake River and 173 km from the mouth of the Snake River to Lower Granite Dam. Section III.J.2 in the PIT Tag Specification Document has a list of the release km for various Release sites. If you have additional release locations please provide PTAGIS with the Name of the location, a six character code and the release KM so the location can be added to the list.

RELEASE INFORMATION FILE A Release Information File consists of information about a Tag file or a group of tag files which was not available at the time of tagging. The Release Information File must be created and sent to PTAGIS prior to any of the fish from the tagging files reaching an interrogation site.

RELEASE SITE The six character code of the site or body of water the fish are released into. See section III.J.2. for the proper code of the release sites.

RELEASE TIME The time (In Pacific Standard Time and Military format with a colon between the hours and minutes HH:MM) the fish were released to a stream after tagging. The release time is recorded in the Release Information or the Monitored Release file if released at a later date or in the Tagging Record section of the Tagging File if the fish are released at the time of tagging. Variable Release Times are used in Tagging File (see Variable Release Times).

RELEASE WATER TEMP The temperature (C) of the stream the fish are released into to rear naturally or migrate downstream. If the fish are released immediately after tagging and recovery this variable should be filled out in the header record of the Tagging file. If the fish are released at a later date, then this temperature is recorded in the Release Information file or Monitored Release file and not in the Tagging file.

RUN A one character code to continue the phylogenetic breakdown, to race, to describe the fish. Run is represented by spring, summer, etc. (Spring chinook, summer steelhead, etc.).

SEQUENCE NUMBER A sequential number from 1 to 9999 that individually identifies each tag record within the TAG RECORDS section of the tagging file; created by the PITTAG.EXE program.

SESSION MESSAGE A textual comment at the beginning of the header record of the Tagging and Mortality files in which the researcher can record important information pertinent to that tagging session.

SPECIES A one character code representing the species of the fish being tagged.

STOCK An additional population describer but in this instance it has no defined codes. Examples would be entries such as Rapid River stock or Wells stock.

TAG RECORD That portion of a Tagging file that contains the PIT tag code, length, weight, and comments associated with each individual tagged fish.

TAG SITE A six character code representing the geographic location of the tagging operation. See section III.J.2. for the correct Tag site code list. If you have additional Tag sites please submit the name, six character code, and river km for the site to PTAGIS so it can be added to the list.

TAGGER The last name and initial of first name of the primary person doing the tag injection for that specific file.

TAGGING FILE A file that contains information from a PIT tagging

session during which PIT tags are implanted in fish. The file consists of five record category types: File type, Header record, Tag record, Notes, and Additional record types. The tagging file is created by the PITTAG.EXE program. The Tagging file can double as a Release file if the fish are released immediately after tagging and the release parameters in the Hearer Record of the Tagging file are filed out.

TAGGING METHOD There are two methods of injecting tags into fish. One uses a hand held tagging needle (HAND) and the other uses a tagging machine that is fastened to a counter and has a clip which holds multiple tags (AUTO).

TAGGING TEMP Temperature (C) of the trough or pan the fish are anesthetized in during the tagging operation.

TEST TAG FILE A file that contains the PITcodes of test tags used to test the interrogation systems. Test tags are removed from the PTAGIS data base prior to access by most users. Anyone using test tags must report the PITcodes of the test tags in a Test Tag File to the PTAGIS data system each spring prior to the operation of the interrogation sites at the dams. If test tags are not reported they are assumed to be real fish in the PTAGIS data system and therefore cause problems.

TEXTUAL COMMENT A comment or message area with no established format and pertaining to an individual fish.

TRANSPORTATION DURATION The amount of time from loading of fish onto the transport vehicle until they are released into the stream.

TRANSPORTATION TYPE The type of transport vehicle mainly pertaining to tank truck, back pack, helicopter, etc.

VARIABLE RELEASE TIME If groups of fish within a Tagging file are being tagged and released to a stream independently of other groups within the same Tagging file then release date and times must be recorded for each group of fish. This is done with the Variable Release Time which is a Positional Comment and ranges from 01 to 99. The Variable Release Time is located in columns 44 and 45 of the Tag Records section of the Tagging file. There must be a corresponding Variable Release Time comment in the Note Records section of the Tagging file to define each Variable Release Time in the Tag Records section.

WEIGHT The weight of the fish recorded to the nearest tenth of a gram.