

# PIT TAG SPECIFICATION DOCUMENT

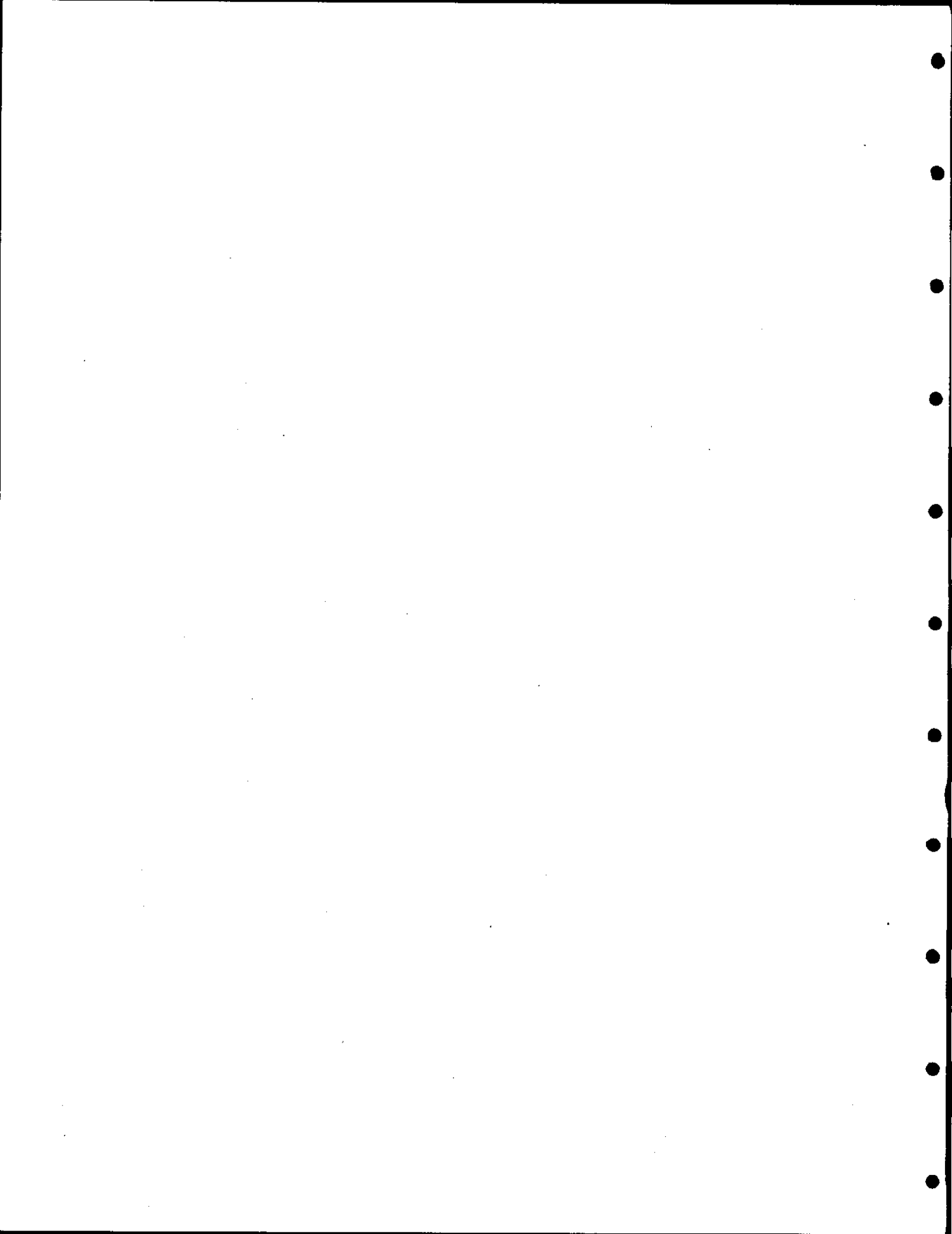
Columbia River Basin

PIT Tag Information System

Data Source Input Specifications

Prepared By  
PIT Tag Work Group

March 1, 1993



## 1993 CHANGES

Below is a list of 1993 changes from the 1992 Specification Document that you should be aware of. Be sure you incorporate these changes into your 1993 PIT tag work. **These changes will go into effect March 1, 1993.** 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 Steering Committee members or the people at the PIT Tag Operations Center (PTOC). For a list of names and telephone numbers refer to section III.K. in the Specification Document.

**PITTAG.EXE PROGRAM:** A new version of PITTAG.EXE is available. This version (Version 6.1) allows the user to perform real-time verification of the data being entered during a tagging session. The program allows for the selection of criteria against which the data is checked as it is being entered. Therefore, any changes that need to be made can be made while the fish is still "in hand". Contact PTOC personnel for a copy of the program and assistance in running it. This version, or an equivalent program that is 100% compatible, is the only version to be used.

**TAGGING FILE VERIFICATION PROGRAM:** The PIT tag verification program, PITVAL.EXE (Version 1.1), is available. It is mandatory that all PIT tag files are edited using this verification program. Contact PTOC personnel for a copy of the program and assistance in running it.

**INTERROGATION SITE FIRMWARE:** At Lower Granite, Little Goose, Lower Monumental, and Prosser Dams, modified double-read firmware will be tested by changing two of each four-coil set from the present single-read firmware. On the coils using the modified double-read firmware, misreads should be eliminated. This test will run through all of the 1993 outmigration.

### II.A TAGGING FILE:

A new record type has been added to the tagging file, the PROGRAM VERSION record. This record is computer generated by PITTAG.EXE and appended by PITVAL.EXE. It is located just under the FILE TYPE record. It contains the version name of both programs. It is mandatory that both of these version names be in the tagging file. The only way to append the PROGRAM VERSION record with the PITVAL.EXE version name is to validate the tagging file using PITVAL.EXE, then save the file. Running PITVAL.EXE "off-line" will not add the version name.

### II.F Test Tag Files:

The Test Tag data file has been eliminated. All new test tags must begin with 090. These tags can be obtained from PTOC.

**III. CODE LISTS:**

**III.A. Coordinator ID Codes:**

New additions to the list.

Kent Ball	KB	IDFG
Howard Burge	HLB	USFWS
Doug Cramer	DPC	PGE
Robert Iwamoto	RNI	NMFS
Brian Jonasson	BCJ	ODFW
Robbert Keith	RMK	SHOBAN
Paul Kucera	PAK	NPT
Doug Marsh	DMM	NMFS
Ralph Roseberg	RBR	USFWS
Tim Walters	TRW	ODFW

**III.E Flag Codes:**

Two flag codes have been added to the list.

DT = Duplicate Tag

X = Duplicate tag used to indicate mortality prior to release

Two flag codes used in 1992 have been changed, and all references to the old codes will be changed in PTAGIS to the new codes.

>2 (formerly 2>) = Descaling greater than 20%

<2 (formerly 2<) = Descaling between 11% and 20%

**III.H Organization and Recovery Organization Codes:**

One new organization has been added.

Portland General Electric	PGE
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**III.I Interrogation Site Codes:**

River kilometers and active dates have been added to the table. Several new interrogation sites have been added.

Bonneville Dam	BVJ
John Day Dam	JDJ
Lower Monumental Juvenile	LMJ
Lower Monumental Juvenile sub-sample	LM2
Sullivan Dam	SUJ

**III.J.2 Tag, Release, and Collection Site Codes:**

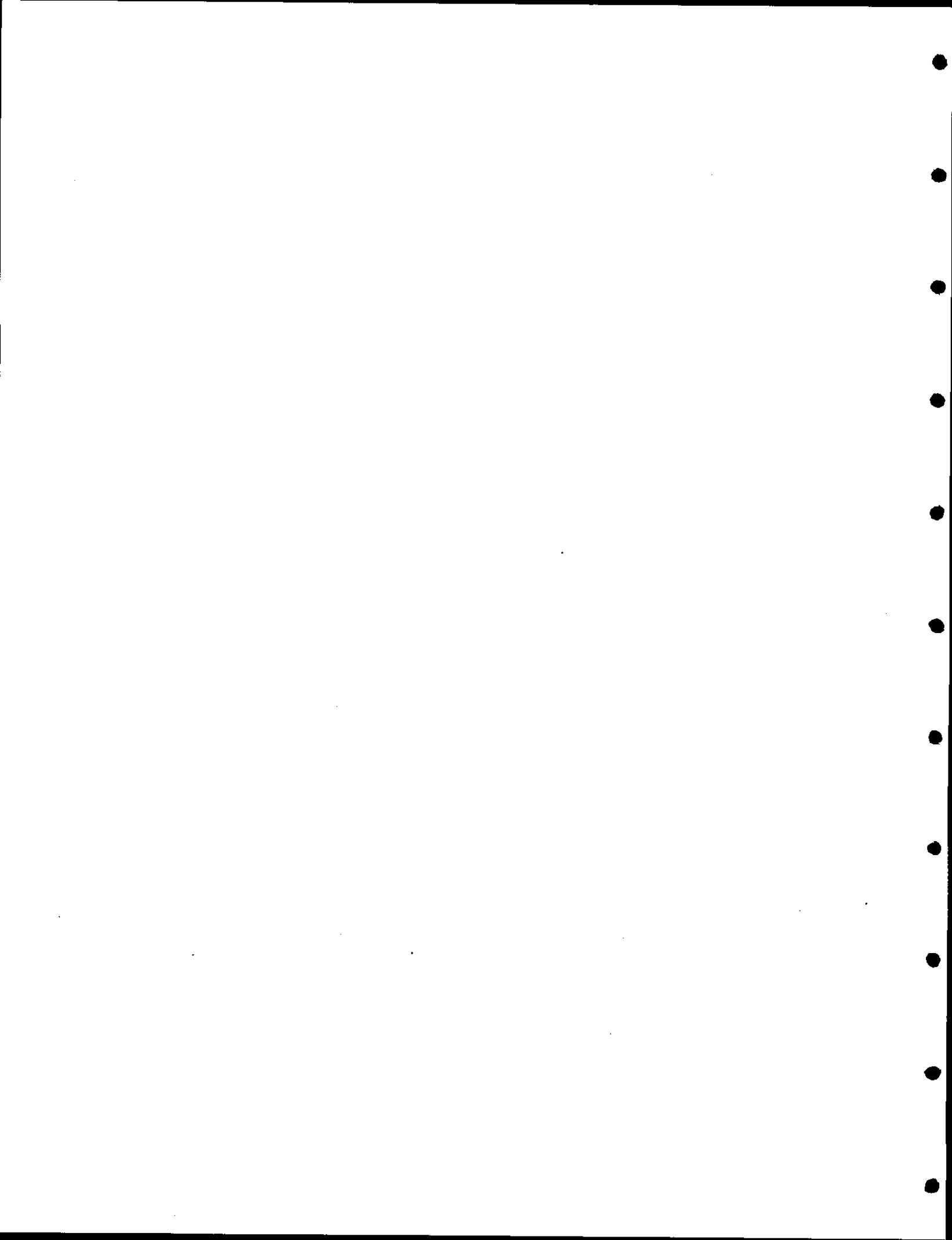
New additions to the list.

American River	AMERR
Bear Creek	BEARC
Big Canyon Facility	BCANF
Big Flat Creek	BIGFLC
Brushy Fork Creek	BRUSHC

Camas Creek	CAMASC
Colt Creek	COLTC
Crooked Fork Creek	CROOKC
Columbia River	COLR
Eldorado Creek	ELDORC
Imnaha River Weir	IMNAHW
Irrigon H *	IRRI
Johnson Creek	JOHNSC
Lemhi River	LEMHIR
Little Sheep Facility	LSHEEF
Lolo Creek	LOLOC
Loon Creek	LOONC
Rush Creek	RUSHC
Sullivan Dam	SUL
Wallowa Hatchery	WALH
White Sands Creek	WHITSC
Willamette River	WILLR

The following sites were removed:

Beaver Creek (from the Middle Fork of the Salmon R)-  
 (has never been used)  
 Hanford Reach (changed to COLR - Columbia River)



1993  
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 Steering Committee. Reviewing and changing this specification document will occur annually prior to March. Questions concerning this document should be addressed to the PIT Tag Steering Committee members (see section III.K.).

**II. Data Files**

There are five file types that are recognized by the PTAGIS system. These are **Tagging, Release Information, Interrogation, Monitored Release, and Mortality**. 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", or "MORTALITY")

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 (03/05/93 Version 6.10) 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 the PTOC (see section III.K.).

A tagging file consists of six record categories: **File Type, Program Version, 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 TAG and NOTE records are allowed. A HEADER record is distinguished by spaces in columns 1-4 and a colon (:) in column 36. The first 24 HEADER records must match this specification document in format and order. A TAG record is distinguished by at least one right-justified integer (0-9) in columns 1-4. NOTE, HEADER, and SESSION MESSAGE records are distinguished by spaces in columns 1-4.

**Recaptures:** (A recaptured fish is a fish that is handled subsequent to the tagging event). The tagging file can also be used to record recaptures (RE). The flag code (RE) must be added to each recapture record in the Tagging Record. If all records in the file are Recaptures, the file must be submitted to PTAGIS using Upload Recaptures.

1. **File Type Record** (Format description, see section II).
  - a. **FILE TYPE: TAGGING** (Computer generated, mandatory)
2. **Program Version Record** (See Figure 1)
  - a. **PROGRAM VERSION: PITTAG.EXE \_\_\_; PITVAL.EXE \_\_\_** (Computer generated, mandatory)

### 3. Header Records

The HEADER format used during the PIT tagging process will be provided by PTAGIS. The format of the header is standardized and cannot 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 data 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). A line of alternate dashes and spaces will be in the Header record on line 3. If a Session Message is entered, an additional line of alternate dashes and spaces will be on line 5.

- a. **SESSION or PROJECT MESSAGE:** TEXT, 76 characters max., optional, entered when in initialization portion of PITTAG.EXE program.
- b. **FILE TITLE:** xxxYYDDD.zzz Mandatory format, includes a three 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. This is the default Tagging Date.).
- d. **CREATION TIME:** HH:MM (Computer generated, Pacific Standard Time, mandatory. This is the default Tagging Time.).
- 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, one character max. See III.B. for codes. Mandatory.
- g. **RUN:** Primary run in Tagging Record, one character max. See III.C. for codes. Mandatory.
- h. **REARING TYPE:** Primary rearing type in Tagging Record, one character max. See III.D. for codes. Mandatory.
- i. **HATCHERY SITE:** Four characters max. See III.F. for codes. Leave blank if not tagged at hatchery. Optional.
- j. **STOCK:** 15 characters max. Optional.
- k. **BROOD YR:** Last two digits of calendar year when eggs were collected. Optional.
- l. **MIGRATORY YEAR:** Last two digits of earliest calendar year when fish will outmigrate. Mandatory.



- m. **TAG SITE:** Six characters max. See III.J.2. for correct code. Mandatory.
- n. **RACEWAY/TRANSECT:** Six characters max. Optional.
- o. **CAPTURE METHOD:** Six characters max. See III.G. for codes. Optional.
- p. **TAGGING TEMP:** nn.n, temp. (C°) in tagging troughs. Mandatory.
- q. **POST TAGGING TEMP:** nn.n, temp. (C°) of water in post-tagging holding facilities (e.g.-- an outdoor raceway). 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, HAND or NONE. Mandatory.
- t. **ORGANIZATION:** Six characters max. See III.H. Mandatory.
- u. **COORDINATOR ID:** See III.A. for codes. Mandatory.
- v. **RELEASE DATE:** MM/DD/YY HH:MM. Optional, required only if fish is released directly to stream and the Tagging File will act as a Release Information File. The time is in Pacific Standard Time (not needed if using Variable Release Times, see below).
- w. **RELEASE SITE:** Six characters max. See III.J.2. for correct codes. Optional, required only if Tagging File will double as a Release File.
- x. **RELEASE RIVER KM:** See III.J.2. for codes. Optional, required only if Tagging File doubles as a Release File.

#### 4. Tag Records

- a. **SEQUENCE NUMBER:** Columns 1-4, numeric. Mandatory.
- <sup>1</sup> 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.

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<sup>1</sup> 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.

f. **COMMENTS:** Three 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:** Column 41, numeric, required if different than **Species** in HEADER Record, see III.B. for codes.
- (b). **RUN:** Column 42, numeric, required if different than **Run** in HEADER Record, see III.C. for codes.
- (c). **REARING TYPE:** Column 43, alpha-numeric, required if different than **Rearing Type** in HEADER Record, see III.D. for codes.
- (d). **VARIABLE RELEASE TIME = 01...99:** 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 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 pipe symbol "|" 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 pipe symbol "|". If no Conditional Comments are present, Textual Comments are preceded by two pipe symbols "||" and consist of information specific to the individual fish. Space is allocated for up to 50 characters in this field.

#### 5. **Note Records**

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 or subsequent 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 columns nine and ten, a slash "/" in column 11, the two digit day "DD" in columns 12 and 13, a slash "/" in column 14, the two digit year "YY" in columns 15 and 16, a space in column 17, the two digit military-style hour of release, in Pacific Standard time, in column 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.

#### 6. Additional Record Types

Additional Record Types include Time Stamp (pre-formatted), blank lines, and Closing records. All Additional Record types start in column five. The Closing records are the same format as HEADER records and are created by the PITTAG.EXE program.

- a. **CLOSED DATE**, ":" at column 36, MM/DD/YY starting at column 38.
- b. **CLOSED TIME**, ":" at column 36, HH:MM starting at column 38.

## B. Release Information File

A **Release Information file** consists of information about a Tagging file, or a group of Tagging 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** records. 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 any 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, six characters max., see section III.J.2. Mandatory.
- e. **RELEASE RIVER KM:** See section III.J.2. Mandatory.
- f. **TRANSPORT DURATION:** HH:MM Time elapsed while fish are being transported. Optional.
- g. **TRANSPORT TYPE:** Ten characters. Optional.
- h. **RELEASE WATER TEMP:** nn.n, (C°) Mandatory.
- i. **ASSOCIATED MARK:** (TEXT) Optional. 76 characters max.

### 3. Tag File List

**TAG FILE NAME:** Name of tag file associated with release tags (12 characters max.). Follows the naming convention in section II.A.2.b. One or more tag file records are allowed. For example;

TAG FILE NAME	: CSM88189.FC1
TAG FILE NAME	: CSM88188.BS1
TAG FILE NAME	: CSM88189.BS2

### 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 a new system is installed. At least 10 test tags should be passed through the system daily, if possible, to ensure the system is functioning. Test tags are a special PIT tag whose tag code begins with 090 instead of 7F7. Use only these tags for test tags. Interrogation files consist of four 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. Mandatory. File Titles are 12 characters (format includes a three character site code and the julian date. The extension is reserved for partitions -- e.g. PRJ89114.A).
  - b. **FILE CREATED:** date and time (e.g. 24 April 1989 at 16:45). Mandatory.
  - c. **FILE CLOSED:** date and time (e.g. 25 April 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 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 the 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 max. See section III.J.2. for correct code list. 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.

### 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 Steering Committee 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
BDA	Bill Arnsberg	NPT	1992-PRESENT
KB	Kent Ball	IDFG	1992-PRESENT
LRB	Larry Basham	FPC	1988-PRESENT
TCB	Ted Bjornn	ICFWRU	1991-PRESENT
EWB	Ed Buettner	IDFG	1988-PRESENT
HLB	Howard Burge	USFWS	1992-PRESENT
DAC	Dave Cannamela	IDFG	1990-PRESENT
TGC	Tim Cochnauer	IDFG	1989
WPC	William Conner	NPT	1990-1991
WPC	William Conner	USEWS	1991-PRESENT
DPC	Doug Cramer	PGE	1992-PRESENT
TAF	Tom Flagg	NMFS	1989-PRESENT
RNI	Robert Iwamoto	NMFS	1993-PRESENT
BCJ	Brian Jonasson	ODFW	1992-PRESENT
RMK	Robbert Keith	SHOBAN	1993-PRESENT
RBK	Russ Kiefer	IDFG	1988-PRESENT
PAK	Paul Kucera	NPT	1992-PRESENT
EJL	Eric Leitzinger	IDFG	1991-PRESENT
DMM	Doug Marsh	NMFS	1993-PRESENT
CSM	Scott McCutcheon	NMFS	1985-1990
WDM	William D. Muir	NMFS	1990-PRESENT
DAN	Duane A. Neitzel	PNL	1991-PRESENT
EFP	Earl Prentice	NMFS	1989
TER	Tom Ruehle	NMFS	1990-PRESENT
RBR	Ralph Roseberg	USFWS	1993-PRESENT
LCS	Lowell Stuehrenburg	NMFS	1987-1989
TRW	Tim Walters	ODFW	1993-PRESENT

#### 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.)

0 = Possible 0 aged chinook  
1< = Descaled less than 10%  
1> = Descaled greater than 10%  
<2 = Descaled between 11% and 20%  
>2 = Descaled greater than 20%  
1P = Descaled - patchy  
1S = Descaled - scattered  
AD = Adipose fin clip  
AF = Adipose fin damage  
AN = Anal fin damage  
B = Bleeding after tagged  
BL = Bloated  
BR = Brood stock  
BS = Body scars  
CA = Caudal fin damage  
CW = Coded wire tagged  
CY = Cyst  
D0...D9 = Sturgeon reproductive stages  
D = Dropped  
DB = Double tagged  
DF = Dorsal fin damage  
DI = Deep insertion  
DK = Dark  
DO = Dis-orbited eye  
DT = Duplicate tag  
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
- LF = Large fish flume from separator at a collection facility
- LP = Left pectoral fin ray sample
- LT = Light body color
- LV = Left ventral fin clip
- ↳ 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
- RP = Right pectoral fin ray sample
- RV = Right ventral fin clip
- SC = Scoliosis
- SF = Small fish flume from separator at a collection facility
- ↳ SM = Subsequent mortality (found dead or died at interrogation site)
- SU = Surgery
- SV = Silvery body color
- TM = Tagged in muscle
- UL = Ulcer
- WD = Possible whirling disease (dolphin head and/or black tail)
- ↳ X = Duplicate tag used to indicate mortality prior to release

**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 KLIKITAT 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 ROCKY 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  
DIVSYS = Slide-gate or other diversion system  
GWDIP = Gatewell Dip net  
GWFYKE = Gatewell Fyke net  
PSEINE = Purse Seine  
SCOTRP = Scoop Trap  
SCREWT = Screw Trap  
SHOCK = Electro-Shock  
WTRAP = Weir Trap

### H. Organization and Recovery Organization Codes:

BIOMRK = Biomark  
FPC = Fish Passage Center  
ICFWRU = Idaho Cooperative Fish and Wildlife Research Unit  
IDFG = Idaho Dept. of Fish and Game  
NMFS = National Marine Fisheries Service  
NPT = Nez Perce Tribe  
ODFW = Oregon Dept. of Fish and Wildlife  
PGE = Portland General Electric  
PNL = Pacific Northwest Laboratory  
PSMFC = Pacific States Marine Fishery Commission  
SHOBAN = Shoshone-Bannock Indian Nation  
USFWS = U.S. Fish and Wildlife Service  
WDF = Washington Dept. of Fish  
WDW = Washington Dept. of Wildlife  
YINN = Yakima Indian Nation

**I. Interrogation Sites Codes:**

	Code	River Kilometer	Active Period
McNary Juvenile	= MCJ	470	4/8/88-PRESENT
"	= MCN		4/21/87-6/22/87
McNary Juvenile sub-sample	= MC2	470	4/10/91-PRESENT
Little Goose Juvenile	= GOJ	522.113	4/7/87-PRESENT
Little Goose Juvenile sub-sample	= GO2	522.113	4/7/91-PRESENT
Lower Granite Juvenile	= GRJ	522.173	3/25/88-PRESENT
"	= LGR		3/29/87-6/20/87
Lower Granite Adult	= GRA	522.173	4/22/88-PRESENT
Prosser Juvenile	= PRJ	539.76	4/25/89-PRESENT
Prosser Juvenile sub-sample (B)	= PR2	539.76	3/5/91-PRESENT
Snake River Trap Juvenile	= SNJ	522.225	3/23/89-PRESENT
Clearwater River Trap Juvenile	= CLJ	522.224.10	3/30/89-PRESENT
Yakima River Trap (1) Juvenile	= Y1J	539.14	5/4/90-6/10/90
Sunnyside Juvenile	= SSJ	539.167	4/11/91-6/4/91
Wapato Juvenile	= WPJ	539.172	5/8/91-6/4/91
Challis North	= CHN	522.525	9/11/91-PRESENT
Challis South	= CHS	522.523	9/9/91-PRESENT
Bonneville Dam	= BVJ	234	5/1/92-PRESENT
John Day Dam	= JDJ	347	5/14/92-PRESENT
Rosa Dam	= ROZ	539.206	3/26/92-3/29/92
Lower Monumental Juvenile	= LMJ	522.67	4/10/93-PRESENT
Lower Monumental Juvenile Subsample	= LM2	522.67	4/10/93-PRESENT

**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. GIS Hydrounits - An eight digit number assigned to areas of land based on drainages. The GIS Hydrounits for the recognized site codes are listed below. However, there are several rivers (Columbia, Snake, Middle Fork of the Salmon) that flow through more than one drainage. The hydrounit codes listed below for these rivers only contain the digits that are common to all drainages along that river. For example, for the tag site COLR (Columbia River), only the first three digits, 170, are common to all the areas drained by the Columbia river. To determine the complete GIS Hydrounit code for the site you are tagging at, you need to know the precise point along the river where you are tagging, and then locate that point on a GIS map. Your state or federal representative on the PIT Tag Steering Committee should be able to aid in this.
3. 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
AMERR	AMERICAN R	522.224.120.101	967	17060305
BEARC	BEAR C	522.224.157.81	984	17060301
BEARVC	BEAR VALLEY C	522.303.319.170	1314	17060205
BEAVER	BEAVER C	522.303.642	1467	17060201
BIGC	BIG C	522.303.319.29	1173	17060206
BCANF	BIG CANYON FAC.	522.271.131.18.1	943	17060105
BIGFLC	BIG FLAT C	522.224.157.113.26	1042	17060303
BSHEEP	BIG SHEEP C	522.308.32	862	17060102
BO1	BONNEVILLE D PH1	234	234	17080001
BO2	BONNEVILLE D PH2	234	234	17080001
BOUNDC	BOUNDARY C	522.303.319.154	1298	17060206
BRUSHC	BRUSHY FORK C	522.224.157.113.6	1022	17060303
CAMASC	CAMAS C	522.303.319.57	1201	17060206
CAPEHC	CAPEHORN C	522.303.319.180	1324	17060205
CATHEC	CATHERINE C	522.271.232	1025	17060104
CHAMBC	CHAMBERLAIN C	522.303.282	1107	17060207
CHAMPC	CHAMPION C	522.303.631	1456	17060201
CHAMWF	CHAMBERLAIN C, W FK	522.303.282.24	1131	17060207
CHANDL	CHANDLER CANAL	539.76	615	17030003
CLELMD	CLE ELUM D	539.299.13	851	17030001
CLELMR	CLE ELUM R	539.299	838	17030001
CLEARC	CLEAR C	522.224.124	870	17060304
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
COLTC	COLT C	522.224.157.113.20	1036	17060303

Codes	Tag, Release, or Collection Site	River Kilometer	Total Rkm	GIS Hydrounits
COLR	COLUMBIA R			170
CROOKR	CROOKED R	522.224.120.94	960	17060305
CROTRP	CROOKED RIVER T	522.224.120.94.1	961	17060305
CROOKC	CROOKED FORK C	522.224.157.113	1016	17060303
DAGGEC	DAGGER C	522.303.319.155	1299	17060206
DEKKEC	DECKER C	522.303.624	1449	17060201
DWOR	DWORSHAK H	522.224.65	811	17060306
ELDORC	ELDORADO C	522.224.87.41.16	890	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	1706010
HAGE	HAGERMAN H *			
HAZARC	HAZARD C	522.303.140.31	996	17060209
HCD	HELLS CANYON D	522.397	919	17050201
HERDC	HERD C	522.303.552.14	1391	17060202
HUCKLC	HUCKLEBERRY C	522.303.626	1451	17060201
IHR	ICE HARBOR D	522.16	538	17060110
ICICLC	ICICLE C	754.41	795	17020011
IMNAHR	IMNAHA R	522.308	830	17060102
IMNAHW	IMNAHA R WEIR	522.308.74	904	17060102
IRRI	IRRIGON H *			
JDA	JOHN DAY D	347	347	17070101
JOHNSC	JOHNSON C	522.303.215.60.24	1124	17060208
KNOXB	KNOX BRIDGE	522.303.215.112	1152	17060208
KOOS	KOOSKIA H	522.224.120.1	867	17060305
LEAV	LEAVENWORTH H	754.41.5	800	17020011
LEMHIR	LEMHI R	522.303.259	1084	17060204
LEMHIW	LEMHI WEIR	522.303.259.31	1115	17060204
LGS	LITTLE GOOSE D	522.113	635	17060107
LSALR	LITTLE SALMON R	522.303.140	965	17060210
LSHEEF	LITTLE SHEEP FAC.	522.308.32.5.8	875	17060102
LOLOC	LOLO C	522.224.87	833	17060306
LOOKGC	LOOKINGGLASS C	522.271.137	930	17060104
LOOH	LOOKINGGLASS H	522.271.137.3	933	17060104
LOONC	LOON C	522.303.319.73	1217	17060205
LOSTIR	LOSTINE R	522.271.131.42	966	17060106
LGR	LOWER GRANITE D	522.173	695	17060107
LMN	LOWER MONUMENTAL D	522.67	589	17070110
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	McNARY D	470	470	17070101
MINAMR	MINAM R	522.271.131.16	940	17060105
MONT	MONTLAKE H *			
NATCHR	NATCHES R	539.187	726	17030002
NISP	NIAGARA SPRINGS H *			
PAHP	PAHSIMEROI POND	522.303.489.6	1320	17060202
PAHSIR	PAHSIMEROI R	522.303.489	1314	17060202
POLEC	POLE C	522.303.642	1467	17060201
POWP	POWELL REARING POND	522.224.157.113	1016	17060302
PRD	PRIEST RAPIDS D	639	639	17020016
PROSRD	PROSSER D	539.76	615	17030003
PROTRP	PROSSER T	539.76.2	617	17030003

Codes	Tag, Release, or Collection Site	River Kilometer	Total Rkm	GIS Hydrounits
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
REDP	RED R REARING POND	522.224.120.101.27	994	17060305
REDFLC	REDFISH LAKE C	522.303.615	1440	17060201
RELIEF	RELIEF C	522.224.120.94.11	971	17060305
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
RUSHC	RUSH C	522.303.319.29.14	1187	17060206
SALR	SALMON R	522.303	825	170602
SALREF	SALMON R, E FK	522.303.552	1377	17060201
SALRMF	SALMON R, M FK	522.303.319	1144	1706020
SALRNF	SALMON R, N FK	522.303.381	1206	17060203
SALRSF	SALMON R, S FK	522.303.215	1040	17060208
SALTRP	SALMON T	522.303.85	910	17060209
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	170
STANLE	STANLEY (GAGE2945)	522.303.609	1434	17060201
SUL	SULLIVAN D	163.43	206	17090012
SULFUC	SULPHUR C	522.303.319.150	1294	17060206
SSD	SUNNYSIDE D	539.167	706	17030003
SSIDEC	SUNNYSIDE CANAL	539.167	706	17030003
SSIDES	SUNNYSIDE SCREEN	539.167.1	707	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
WALH	WALLOWA H	522.271.131.63.1	988	17060105
WALLOR	WALLOWA R	522.271.131	924	17060106
WAN	WANAPUM D	669	669	17020016
WAPATC	WAPATO CANAL	539.172	711	17030003
WAPATD	WAPATO D	539.172	711	17030003
WAPATS	WAPATO SCREEN	539.172.1	712	17030003
WENATR	WENATCHEE R	754	754	17020011
WENR	WENAHA R	522.271.73	866	17060106
WENRNF	WENAHA R, N FK	522.271.73.35	901	17060106
WENRSF	WENAHA R, S FK	522.271.73.35	901	17060106
WHITSC	WHITE SAND C	522.224.157.113	1016	17060303
WILLR	WILLAMETTE R	163	163	17090012
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	1703000

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



K. PIT Tag Steering Committee Members, 1993.

Name	Organization	Street	City	State	ZIP	Phone
Lee Blankenship	WDF	115 General Admin. Bldg.	Olympia	WA	98504	(206)586-1995
Ed Buettner	IDFG	1540 Warner Ave.	Lewiston	ID	83501	(208)743-6502
Billy Conner	USFWS	PO Box 251	Ahsahka	ID	83520	(208)476-7242
Carter Stein	PSMFC	2501 S.W. First Ave., Suite 200	Portland	OR	97201	(206)326-7025
Brian Jonasson	ODFW	1410 L Ave 211 Inlow Hall EOSC	La Grande	OR	97850	(503)962-3884
Doug Marsh	NMFS-CZES	2725 Montlake Boulevard E.	Seattle	WA	98112	(206)553-0887
Dave Marvin	FPC/CRITFC	501 S.W. First Ave., Suite 230	Portland	OR	97232-2295	(503)230-4289
Charles Morrill	WDW	600 N. Capital Way	Olympia	WA	98504-1091	(206)753-3009

L. PIT Tag System Codes are assigned by the agency maintaining the monitoring equipment. During 1993, 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 3/01/93)

MONITOR SITE	LOCATION	COIL NUMBERS	RESPONSIBLE ORGANIZATION
LOWER GRANITE ADULT	EAST	00-02-04-06	PSMFC
	WEST	08-0A-0C-0E	PSMFC
LOWER GRANITE JUV.	A MAIN	18-1A-1C-1E	PSMFC
	B MAIN	10-12-14-16	PSMFC
	GATE CONTROL A	28-2A	PSMFC
	GATE CONTROL B	2C-2E	PSMFC
	FISH DIVERSION A	30-32-34	PSMFC
	FISH DIVERSION B	36-38-3A	PSMFC
	A SUB.	20-22-24-26	PSMFC
LITTLE GOOSE JUV.	A MAIN	90-92-94-96	PSMFC
	B MAIN	98-9A-9C-9E	PSMFC
	A GATE CONTROL/SEPARATOR	40-42/44-46	PSMFC
	B GATE CONTROL/SEPARATOR	48-4A/4C-4E	PSMFC
	A FISH DIVERSION	A0-A2-A4-A6	PSMFC
	B FISH DIVERSION	A8-AA-AC-AE	PSMFC
	RIVER RELEASE	54-56-58-5A	PSMFC
	SAMPLE ROOM	50-52	PSMFC
LOWER MONUMENTAL JUV.	(codes to be assigned 4/93)		
McNARY JUV.	A MAIN	68-6A-6C-6E	PSMFC
	B MAIN	60-62-64-66	PSMFC
	A SUB.	70-72-74-76	PSMFC
	SAMPLE ROOM	80-82	PSMFC
SNAKE JUV. TRAP	MAIN	D4-D6	IDFG
CLEARWATER JUV. TRAP	MAIN	D0-D2	IDFG
PROSSER	MAIN	C8-CA-CC-CE	PSMFC
	SAMPLE ROOM	C4-C6	PSMFC
YAKIMA JUV. TRAP 1	MAIN	B8-BA	NMFS
SUNNYSIDE	MAIN	S0-S2	PNL
WAPATO	MAIN	W0-W2	PNL
CHALLIS	NORTH	F1-F3	IDFG
	SOUTH	F5-F7	IDFG
SALMON JUV. TRAP	MAIN	D8	IDFG

Figure 1. Tagging file Example.

```

FILE TYPE                : TAGGING
PROGRAM VERSION          : PITTAG.EXE 6.1;PITVAL.EXE 1.1
-----
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             : 07.5
POST TAGGING TEMP       :
RELEASE WATER TEMP      : 07.5
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=02/19/91 12:00
V02=02/19/91 13:15

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

```

Figure 2. Release information file example.

```
FILE TYPE           : RELEASE INFORMATION
FILE TITLE          : REL91CMS.MCN
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. All times must be recorded in Pacific Standard Time even if the location of the Interrogation or Monitored Release is in Mountain Standard/Daylight or Pacific Daylight time.

```
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
FILE CLOSED           : 25 April 1989 AT 00:00
```

Figure 4. Mortality file example.

```

FILE TYPE                : MORTALITY
PROGRAM VERSION          : PITTAG.EXE 6.1
-----
1993 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 SEPARATOR
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

```

## 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 representing 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.

**COIL ID** 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 coils associated with an 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 comments appears 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. The creation date is the default tagging date.

**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. The creation time is the default tagging 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 (see Section III.E.). These codes are used 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 PIT codes 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 STEERING COMMITTEE (PTSC)** A sub-committee of the Fish Passage Advisory Committee of the Columbia Basin Fish and Wildlife Authority. The committee is made up of representatives of the agencies and tribes. The committee'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 PIT Tag Information System (PTAGIS) is the central repository of all the information generated by the PIT tag system of the Columbia River basin. The PTAGIS is managed by the Pacific States Marine Fisheries Commission and funded by the Bonneville Power Administration.

**PTOC** The PIT Tag Operations Center (PTOC), which operates and maintains the PTAGIS, all detection equipment on the dams, and creates and updates software for the Columbia River Basin-wide PIT tag system. Administrative management is through the Pacific States Marine Fisheries Commission.

**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 (see Section III.D.) 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.

**RECAPTURE** A recaptured fish is a fish that is handled subsequent to the tagging event. A recaptured fish is designated with the flag code RE.

**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 any 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 (see Section III.C.) 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 (see Section III.B.) 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 Header Record of the Tagging file are filled 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 platform 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.

**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.