Specifications and Definitions for the Exchange of Coded Wire Tag Data for the North American Pacific Coast

Established by the Pacific Salmon Commission's Data Standards Work Group

PSC Format Version 4.1

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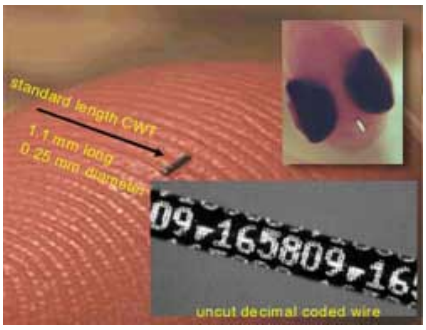

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CHAPTER 1

INTRODUCTION, DEFINITIONS, AND RULES

CWT data must be exchanged in the form of a PSC Format Version 4.1 dataset.

The definition and specification of PSC Format Version 4.1 is described in this set of documents.

A. Points of Data Exchange

Valid points of exchange are:

- Canada site: Mark Recovery Unit, Pacific Biological Station, Fisheries & Oceans Canada
- U.S. site: Pacific States Marine Fisheries Commission's Regional Mark Processing Center (hereafter "Mark Center") http://www.rmpc.org

B. Scheduled Frequency of Data Exchange

Any data should be exchanged as soon as it is considered to be complete. The minimal schedule in which data needs to be exchanged is as follows:

1. From the Mark Center to Canada:
   a. Release and Location datasets will be sent to Canada:
      1) when specifically requested by Canada, or
      2) within two weeks of validation and processing at the Mark Center
   b. Recovery, Catch/Sample, and Catch & Effort datasets will be sent to Canada:
      1) when specifically requested by Canada, or
      2) immediately upon validation and processing at the Mark Center
2. From Reporting Agencies to the Mark Center:
   a. Release:
      1) Preliminary Release (CWT Only): Preliminary data records for the current calendar year (i.e. where first_release_date equals the current calendar year) should be reported no later than **August 15** of the current calendar year. Preliminary release data must include at a minimum all of the following fields: record_code, format_version, submission_date, reporting_agency, release_agency, coordinator, tag_code_or_release_id, tag_type, species, brood_year, rearing_type, first_release_date, last_release_date, and hatchery_location_code. **NOTE**: Only the year portion of the first_release_date and last_release_date field is required. This option used to be called Mid-Year, is rarely used and may be eliminated in future version 5.0.
      2) Final Release: Complete data records for the current calendar year should be reported no later than **January 31** of the following year.

b. Recovery: Preliminary data for the current calendar year should be reported no later than **January 31** of the following year. This applies to Recovery records where field "Run Year" is equal to the current calendar year.

c. Catch/Sample: Preliminary data for the current calendar year should be reported no later than **January 31** of the following year. This applies to Catch/sample records where field "Catch Year" is equal to the current calendar year.

d. Catch & Effort: Preliminary data for the current calendar year should be reported no later than **January 31** of the following year. This applies to Catch & Effort records where field "Catch Year" is equal to the current calendar year.

e. Location: Locations can be sent whenever updates are deemed necessary by the reporting agency as required to validate data files mentioned above.

f. Description: One corresponding Description file must be submitted with any data file mentioned above when submitted to the Mark Center. However, a Description file should not be re-submitted when a data file is re-submitted solely for the purpose of correcting validation errors**.** One and only one description file should be sent in association with a set of one or more data files for a given submission date. In the event that more than one description file for the associated data file(s) is sent, only the latest description file uploaded for the given submission date will be processed for the database and also displayed on the Data Status web page.

C. Required Grouping of Records within Data Type Files

1. From Mark Center to Canada:

a. Release: All releases per file.

b. Recovery: One reporting agency, one run year, and all data to date per file.

c. Catch/Sample: One reporting agency, one catch year, and all data to date per file.

d. Catch & Effort: One reporting agency, one calendar year, and all data to date per file.

e. Location: All locations per file.

2. From Reporting Agencies to the Mark Center:

a. Release: One reporting agency and any number of release records per file.

b. Recovery: One reporting agency, one run year, and all data to date per file.

c. Catch/Sample: One reporting agency, one catch year, and all data to date per file.

d. Catch & Effort: One reporting agency, one calendar year (date_catch_effort_year), and all data to date per file.

e. Location: One reporting agency and all Location Codes to date per file.

f. Description: One reporting agency and only new Descriptions since last submission per file.

For information on how to remove data records and submit full data sets, see Section I below.

D. General Data File Requirements

1. All PSC Format data must be presented in Comma-Separated Value (CSV) files using the ASCII character set;
2. All files must contain only newline-delimited records (i.e. one record per line);
3. The first record in the dataset must contain the corresponding "Data Field Names" as they are defined (with underscores replacing spaces) for the data type in this specification.
4. All fields which contain a data value must not contain any leading or trailing blanks unless specifically allowed in the Description & Validation notes for a particular field;
5. All fields which contain a data value must be surrounded on both ends by double-quotes (") and must be separated by a comma (,);
6. All fields which do not contain a data value (for whatever reason) are considered NULL values and must have NO representation whatsoever in the data file. The fields for which data is absent will simply be represented by two consecutive commas (,,);
7. No double-quotes (") are allowed in the contents (i.e. values) of any data field because the double-quote (") is sequestered for exclusive use as the delimiter character for data exchange;
8. Leading zeros are optional unless they are part of a value in a lookup field. An Example of a required leading zero as part of the value in a lookup field is: value '01' for the Release coordinator field. Decimal and trailing zeros are optional for numeric values in which all the digits after the decimal point would be zeros. For numeric values with a fractional part the decimal should be present. Implied decimals are not allowed;
9. Data field types and ranges:
   - All data specified as "Numeric" must contain only ASCII characters in the range: '0' through '9' or a decimal character '.';
   - All data specified as "Lookup" are considered coded values having a corresponding lookup table, even if they appear numeric;
   - Date values should have neither blank ( ) nor zero (0) characters appended to optional components (i.e. in cases where only partial dates are permitted). For example, the date August, 2001 should be formatted as follows:
   - Correct formatting: "200108"
   - Incorrect formatting: "20010800" or "200108 ";

E. File Naming Convention

1. File names must be limited to 60 characters and not contain any blank spaces.
2. Underscore characters "_" are reserved for separating specific sections of the file name and should not be included anywhere else in the file name string.
3. File name convention consists of the following where:
   - AAAAAAAAAA – Agency acronym up to 10 characters
   - YYYY – "Run Year" for a Recovery file or "Catch Year" for a Catch/Sample file.
   - NONE – Specific place holder within the file name for a Description file.
   - aaaaaaaaaaaaaaaaaaaa – Agency specified text up to 20 alpha-numeric characters without spaces " ", underscores "_" or other special character symbols.

Location: LC041_AAAAAAAAAA_FULLSET_aaaaaaaaaaaaaaaaaaaa.csv
Full Location data set for reporting_agency.

Release: RL041_AAAAAAAAAA_FULLSET_aaaaaaaaaaaaaaaaaaaa.csv
Full Release data set for reporting_agency.

RL041_AAAAAAAAAA_PRELIM_aaaaaaaaaaaaaaaaaaaa.csv
Preliminary Release data set for reporting_agency, may only include preliminary release records.
(Note: This used to be called Mid-Year Release and is rarely used. This option may be dropped in future version 5.0)

RL041_AAAAAAAAAA_PARTIAL_aaaaaaaaaaaaaaaaaaaa.csv
Partial release data set, may include any number of release records for reporting_agency.

Recovery: RC041_AAAAAAAAAA_YYYY_aaaaaaaaaaaaaaaaaaaa.csv
Full Recovery data set for reporting_agency and run_year.

Catch/Sample: CS041_AAAAAAAAAA_YYYY_aaaaaaaaaaaaaaaaaaaa.csv
Full Catch/Sample data set for reporting_agency and catch_year.

Description: DD041_AAAAAAAAAA_NONE_aaaaaaaaaaaaaaaaaaaa.csv
Description data set for associated data files submitted on same submission date.

F. Methods of Data File Exchange

1. Methods of file transfer may be any of the following:
   - Internet File Transfer Protocol (FTP) using the RMPC Internet web-site at the following address: http://www.rmpc.org
   - Internet File Transfer Protocol (FTP) using an *individual login account* on the Mark Center computer; FTP to this address: ftp.rmpc.org
   - CD-ROM disc
2. For file-transfer purposes, files may be compressed using PKZip, or Unix “gzip” file compression software;

G. Explanation of Columns in Data Type Tables

1. PSC Fld # Field number for Format Version 4.1;
2. PSC Common Name Common usage name;
3. Data Field Name Header record field name;
4. Max Cols Maximum field width (i.e. columns or bytes);
5. Reqd Required field. May indicate one of the following:

- Yes: The field must contain data for the record to be considered a valid PSC Format record.
- No: The field is optional. **NOTE: Some fields, however, are conditionally required**;

6. Format /Use This column identifies how the field is to be interpreted and used for database management purposes. It may contain any of the following:
   - 'Lookup' The field contains codes that have a corresponding value in a lookup table.
   - 'Primary Key Lookup' Field used to look up specific and distinct records within a data type.
   - 'Foreign Key Lookup' Field used to associate many records within a data type to specific and distinct records of another data type.
   - 'Numeric' The field can contain only numeric characters and can be treated as a mathematical quantity.
   - 'Alpha-Numeric' The field can contain alpha and/or numeric characters and cannot be used as a mathematical quantity.
   - Data Type or List Possible values the field may contain. The meaning of each value would be described in the "Validation" column.
   - Pattern Template Shows the exact order and required contents of each character in the field;
7. Validation Rules This column will contain some combination of the following:
   - A brief explanation of the meaning of the field along with any pertinent notes to be aware of when determining a value to go in the field.
   - A list of meanings corresponding to the values listed in the Format column described in item 6 above.
   - Conditions under which the field is required, if any.
   - Ranges permitted in numeric data type fields.
   - Special values which have complex patterns or which are dependent on the contents of other fields;

H. Data Type Record Examples (NOTE: All field names are required for header records)

1. Release Data – row and column excerpts:

Header Record	record_code,format_version,submission_date,reporting_agency,release_agency,coordinator,tag_code_or_release_id,tag_type,first_sequential_number,last_sequential_number,related_group_type,related_group_id,species,run,brood_year,first_release_date,last_release_date,release_location_code,hatchery_location_code,stock_location_code,release_stage,rearing_type,study_type,release_strategy,avg_weight,avg_length,study_integrity,cwt_1st_mark,cwt_1st_mark_count,cwt_2nd_mark,cwt_2nd_mark_count,non_cwt_1st_mark,non_cwt_1st_mark_count,non_cwt_2nd_mark,non_cwt_2nd_mark_count,counting_method,tag_loss_rate,tag_loss_days,tag_loss_sample_size,tag_reused,comments
line #1	"N","4.1","20090402","CDFO","CDFO","03","!03NOCO9703",,,,,,"2","3","1997","19980512","19980512","2FS JNSTR2532","2FS JNSTH2532","2FS JNSTS5428","F","H","B",,"2.1",,,,,,,"0000","7316",,,"W",,,,,"FED FRY RELEASE"
line #2	"T","4.1","20090402","CDFO","CDFO","03","185126","0",,,,,"1","3","2002","20030507","20030509","2FS JNSTR0106","2FS JNSTH0106","2FS JNSTS0106","S","H","B",,"3.07","66",,"5000","30976",,,"0000","186439","5000","614","W",".0194","10","1699",,"DELAYED FED FRY REL TO LOWER QUINSAM LAKE."
line #n	,,,,,,,,,,,,,

2. Recovery Data—row and column excerpts:

Header Record	"record_code","format_version","submission_date","reporting_agency","sampling_agency","recovery_id","species","run_year","recovery_date","recovery_date_type","period_type","period","fishery","gear","adclip_selective_fishery","estimation_level","recovery_location_code","sampling_site","recorded_mark","sex","weight","weight_code","weight_type","length","length_code","length_type","detection_method","tag_status","tag_code","tag_type","sequential_number","sequential_column_number","sequential_row_number","catch_sample_id","sample_type","sampled_maturity","sampled_run","sampled_length_range","sampled_sex","sampled_mark","estimated_number"
line #1	"R","4.1","20090402","ODFW","ODFW","L8359","2","2006","20061009","R","6","42","21","13",,"4","5F33209 R3 13","3","5000","F","00.63","1","1","0752","0","1","E","1","631561","13",,,,"2006130097","1","4",,,,,"00002.00"
line #2	"R","4.1","20090402","ODFW","ODFW","G3956","1","2006","20060424","R","6","18","46","14","S","4","5F33307 R1 14","1","5000",,,,,"0780","0","1","V","1","093613","11",,,,"2006140007","1","4","1",,,,"00003.11"
line #n	,,

3. Catch/Sample Data—row and column excerpts:

Header Record	record_code,format_version,submission_date,reporting_agency,sampling_agency,catch_sample_id,species,catch_year,period_type,period,first_period,last_period,fishery,adclip_selective_fishery,estimation_level,catch_location_code,detection_method,sample_type,sampled_maturity,sampled_run,sampled_length_range,sampled_sex,sampled_mark,number_caught,escapement_estimation_method,number_sampled,number_estimated,number_recovered_decoded,number_recovered_no_cwts,number_recovered_lost_cwts,number_recovered_unreadable,number_recovered_unresolved,number_recovered_not_processed,number_recovered_pseudotags,mr_1st_partition_size,mr_1st_sample_size,mr_1st_sample_known_ad_status,mr_1st_sample_obs_adclips,mr_2nd_partition_size,mr_2nd_sample_size,mr_2nd_sample_known_ad_status,mr_2nd_sample_obs_adclips,mark_rate,awareness_factor,sport_mark_incidence_sampl_size,sport_mark_inc_sampl_obs_adclips
line #1	"S","4.1","20090402","ODFW","ODFW","2006140007","1","2006","6","18",,,"46","S","4","5F33307 R 14","V","1","4",,,,,"1196",,"384","3.11","39","4",,"1",,,,"384","384","384","44",,,,,".1145",,,
line #2	"S","4.1","20090402","ODFW","ODFW","2006130097","2","2006","6","42",,,"21",,"4","5F33209 R 13","E","1","4",,,,,"9075",,"4032","2.27","201","13","2",,,,,"216","216","0","161","3816","273","273","208",".721",,,
line #n	,,,

4. Catch & Effort Data—row and column excerpts:

Header Record	record_code,format_version,submission_date,reporting_agency,sampling_agency,catch_sample_id,species,catch_year,period_type,period,first_period,last_period,fishery,adclip_selective_fishery,estimation_level,catch_location_code,detection_method,sample_type,sampled_maturity,sampled_run,sampled_length_range,sampled_sex,sampled_mark,number_caught,escapement_estimation_method,number_sampled,number_estimated,number_recovered_decoded,number_recovered_no_cwts,number_recovered_lost_cwts,number_recovered_unreadable,number_recovered_unresolved,number_recovered_not_processed,number_recovered_pseudotags,mr_1st_partition_size,mr_1st_sample_size,mr_1st_sample_known_ad_status,mr_1st_sample_obs_adclips,mr_2nd_partition_size,mr_2nd_sample_size,mr_2nd_sample_known_ad_status,mr_2nd_sample_obs_adclips,mark_rate,awareness_factor,sport_mark_incidence_sampl_size,sport_mark_inc_sampl_obs_adclips

line #1	"S","4.1","20090402","ODFW","ODFW","2006140007","1","2006","6","18",,,"46","S","4","5F33307 R 14","V","1","4",,,,,"1196",,"384","3.11","39","4",,"1",,,,"384","384","384","44",,,,,".1145",,,
line #2	"S","4.1","20090402","ODFW","ODFW","2006130097","2","2006","6","42",,,"21",,"4","5F33209 R 13","E","1","4",,,,,"9075",,"4032","2.27","201","13","2",,,,,"216","216","0","161","3816","273","273","208",".721",,,
line #n	,,,,,,,,,,,,,,,,,,,,

5. Location Data—row and column excerpts:

Header Record	record_code,format_version,submission_date,reporting_agency,location_code,location_type,name,latitude,longitude,psc_basin,psc_region,epa_reach,description
line #1	"L","4.1","20090402","IDFG","4F-1706020804408.44","1","JOHNSON CREEK TRAP",,,"SALM","SNAK","1706020804408.44","The NPT Johnson Creek trap facility."
line #2	"L","4.1","20090402","IDFG","4F-1706030800100.09","3","CLEARWATER HATCHERY",,,"CLEA","SNAK","1706030800100.09","CLEARWATER HATCHERY"
line #n	,,,,,,,,,,,,

6. Description Data—row excerpt (all columns shown here):

Header Record	"record_code","format_version","submission_date","reporting_agency","submission_status","file_type","file_status","first_year","last_year","description"
line #1	"D","4.1","20090219","CDFO","R",""LC","C",,,"Increasing readability of recovery and catch locations strips for Fraser River sport fishery for modeling purposes. Modifications to Chinook catch for Fraser gillnet/first nations fishery and West Coast Vancouver Island troll fisheries"
line #2	"D","4.1","20090402","CDFW","N","RL","I",,,"CWT 2007 RELEASES OF BY2006 CHINOOK FROM THE YUBA RIVER WERE SUBMITTED"
line #3	"D","4.1","20090402","CDFW","R","RC","C","2007",,"UPDATE TO 2007 RECOVERY YEAR - ADDED INLAND RECOVERIES ASSOCIATED WITH SNAKE RIVER SPAWNING SAMPLES"

I. Methods of Removing Data Records (for one Reporting Agency)

1. Release: To delete release records from the CWT/RMIS database, release data must be processed as a "full set" of releases. To cause this to happen, please do the following:

a. Prepare a COMPLETE Releases data file for your Reporting Agency. I.e. The file must include all legitimate records of releases from your Reporting Agency -- both tagged and untagged (records beginning with the "!" /Bang character) -- and for ALL HISTORY.

b. REMOVE any records that are now deemed not legitimate by your agency and you would like to have deleted from the CWT/RMIS database.

c. Place the following text into the filename: "FULLSET". I.e. the text "..FULLSET.." must appear somewhere in the actual name of the file uploaded to the RMPC. The RMPC Data Administrator will look for the string "FULLSET" in the filename. If seen, the administrator is to process the data file as a full set of release data. In that case, the database load process will compare all new records with all existing records (BOTH tagged and untagged) on file in the database. For any tagged record not included, a check is done to determine if any recoveries exist where Tag Status = '1' for the tagcode. If recoveries exist then the record will not be archived. Any records not included in the new dataset that can be archived will be archived. Thereafter the record(s) will be permanently deleted from the CWT database. If any recoveries with Tag Status '1' exist for a tagcode then it cannot be deleted, regardless of the Reporting Agency.

d. Proceed w/ the FTP upload to the RMPC as with any other file (see Section E above).

Please note that Release records may be sent as a partial dataset (i.e. any number of records from 1 up to all records for given agency, see Section C.2. a above); however, this method allows only replacement of existing release records or addition of new release records, not removal of release records.

2. Recovery: To remove one or more recovery records from the CWT/RMIS database, simply remove the intended records from the recovery data set by Run Year, and re-submit the entire set of Recovery data (all remaining legitimate records) for the given Run Year to the RMPC (see Section C.2.b above).

3. Catch/Sample: To remove one or more catch/sample records from the CWT/RMIS database, simply remove the intended records from the catch/sample data set by Catch Year, and re-submit the entire set of Catch/Sample data (all remaining legitimate records) for the given Catch Year to the RMPC (see Section C.2.c above).

4. Catch & Effort: To remove one or more catch & effort records from the CWT/RMIS database, simply remove the intended records from the catch & effort data set by Calendar Year, and re-submit the entire set of Catch & Effort data (all remaining legitimate records) for the given Calendar Year to the RMPC (see Section C.2.d above).

5. Location: To remove one or more location code records from the CWT/RMIS database, simply remove the intended records from the locations data set (all records) for the Location Reporting Agency, and re-submit the entire set of location codes (all remaining legitimate records) to the RMPC (see Section C.2.e above). The database load process will compare all new records with all existing records on file in the database. For any location code record not included, a check is done to determine if any data exist which reference that location code. If any referenced data exist then the record will not be archived. Any records not included in the new dataset that can be archived will be archived. Thereafter the record(s) will be permanently deleted from the CWT/RMIS database.

6. Description: Description data (metadata) are regarded as a permanent record of data changes and cannot be removed except by special request to the RMPC data administrator.

See also Section C.2.f above.

CHAPTER 2

Release Data

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format /Use	Description & Validation Rules.....
1	**Record Code** record_code	1	Yes	Lookup 'T' 'N'	Code to indicate the CWT data file classification (class) of this individual record. Must match one of the following: =Tagged Release record =Non-Associated Release record See chapter 14 for further discussion of the use of this field.
2	**Format Version** format_version	4	Yes	'4.1'	Format version used to report data **Must have the value: '4.1'**
3	**Submission Date** submission_date	8	Yes	YYYYMMDD	Date of submission for this set of records. Date should be close to actual date when this row is sent to the Mark Center **Must have the same value for all records in this data submission** Should match submission_date in corresponding Description file
4	**Reporting Agency** reporting_agency	10	Yes	Lookup	Abbreviation for reporting agency of this dataset for this data exchange **Must contain an agency code defined in chapter 7** **Must be the same for all records**
5	**Release Agency** release_agency	10	Yes	Lookup	Abbreviations for tagging agencies **Must contain an agency code defined in chapter 7**
6	**Coordinator** coordinator	2	Yes	Lookup '01' '02' '03' '04' '05' '06' '07' '08' '09' '10'	Reporting coordinator for the release group of this individual record **Must match one of the following:** =ADFG (S.E. Alaska) =NMFS – Alaska =CDFO =WDFW =ODFW =NMFS – Columbia River =USFWS =CDFG =BCFW =IDFG

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format /Use	Description & Validation Rules.....
				'11'	=YAKA
				'12'	=ADFG (S. Central AK)
				'13'	=MIC (Metlakatla, AK)
				'14'	=NWIFC
				'15'	=CRITFC
				'16'	=NEZP
				'17'	=QDNR
				'18'	=STIL
				'20'	=CCT
7	**Tag Code or Release ID** tag_code_or_release_id See notes to follow	12	Yes	Primary Lookup AGD1D2D3D4	This identifier represents either: Case 1) If this release contains CWT fish: Enter tag_code_or_release_id as follows: Cols. 1 – 2: Agency; Cols. 3 - 4: Data 1; Cols. 5 - 6: Data 2; Cols. 7 - 12:Data 3 and 4 Color coded tags and rare-earth tags: Report in Alpha only Sequential tags: Report only AG,D1,D2 for Release data; Report D3, D4 only in Recovery data file, fields 'sequential_column_number' and 'sequential_row_number' **Must have record_code = 'T'** **Must have even number of characters** **Must be unique** **Must match one of the following patterns:** All numeric OR all Alpha OR 1 Alpha then all numeric OR all numeric then '*' then 1 numeric OR 1 Alpha then all numeric then '*' then 1 numeric OR all Alpha then '*' then 1 numeric OR '##' then 2 Alpha OR '##' then 2 Alpha then '*' then 1 numeric OR '$$' then 2 Alpha OR '$$' then 2 Alpha then '*' then 1 numeric OR Special cases: 'XX0500' 'HF1505' 'HF1515' See notes to follow Case 2) If this release contains no CWT fish: Enter tag_code_or_release_id as follows: **Column 1 must be '!'** **Columns 2 and 3 must match one of the valid coordinator codes for the Releases coordinator field:** **Must have record_code = 'N'** **Must be unique**

NOTES for tag_code_or_release_id:

1) **Re-use of tag codes is not approved. In those cases when a tag code is re-used, whether by accident or intentionally, any subsequent recoveries may be regarded as unresolved discrepancies (where tag status [Recovery file] is '7') as determined by the reporting agency**.

2) In cases where a tag code is accidentally re-used, the first occurrence may be appended with a '*1'. The second occurrence **must** have the suffix '*2' appended, and the n-th occurrence thereafter **must** have the suffix '*n' appended. Additionally, the field 'tag_reused' **must** be assigned the value 'Y' for the original tag code and all subsequent instances of the tag code.

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format /Use	Description & Validation Rules.....
	3) See chapter 14 for discussion regarding the use of Blank or Agency-Only wire.				
8	**Tag Type** tag_type	2	No	Lookup '0' '1' '2' '3' '4' '5' '6' '7' '8' '9' '10' '11' '12' '13' '14' '15' '16'	Code to indicate type of tag used for release group; If present, must match one of the following: =Standard binary (1mm) =Half tags (H type) =Half tags (B type) =6 word half-length tags =X-ray binary (tag_code_or_release_id must be 'XX0500') =Standard color =Solid color (##) =Striped color ($$) =Rare Earth =Repeating series =Sequential 6 word binary; =Length & ½ Binary (1.5mm) =Standard Alphanumeric, includes Decimal (1 mm) =Length & ½ Alphanumeric, includes Decimal (1.5 mm) =Sequential Alphanumeric, includes Decimal =Half-length Alphanumeric, includes Decimal (0.5mm) =Pseudo tag, blank wire If tag_type = '10', then first_sequential_number is required and last_sequential_number is required **Required if record_code is 'T'** If tag_type = '0' thru '15' then record_code must be 'T' If tag_type = '16' then record_code must be 'N' See chapter 14 for further discussion of the use of this field.
9	**First Sequential Number** first_sequential_number	5	No	Numeric	Smallest value in sequential number series; Field used for sequential tags only If present, must be numeric in the range '0' through '16383' for tag_type '10' or '0' through '99999' for tag_type '14' **Must be absent unless tag_type is '10', '14'**
10	**Last Sequential Number** last_sequential_number	5	No	Numeric	Largest value in sequential number series; Field used for sequential tags only If present, must be numeric in the range '0' through '16383' for tag_type '10' or '0' through '99999' for tag_type '14' **Must be absent unless tag_type is '10', '14'**
11	**Related Group Type** related_group_type	1	No	Lookup	Code indicating whether this release group is double index tagging or otherwise **Required if related_group_id is present**

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format /Use	Description & Validation Rules.....
					If present, must match one of the following:
				'D'	=Double index tag groups
				'O'	=Other related groups
12	**Related Group ID** related_group_id	15	No	Alpha-Numeric	Specifies linkage among double index tag groups or other related groups **Required if related_group_type is present** If present, first 2 columns must match one of the valid coordinator codes for the Releases coordinator field: AND columns 3 - 6 must contain year of release AND columns 7 – 15 are agency defined alpha-numeric text If present, at least one other record must exist with this same value Within a new dataset, if Related Group type (field 11) is 'D' then, at least 1 record must exist with the "AD Clip" condition where: 1) cwt_1st_mark starts with '5' OR cwt_2nd_mark starts with '5'; AND 2) cwt_1st_mark count + cwt_2nd_mark count > 0 AND at least 1 record must exist with the "no Ad Clip" condition where: 1) cwt_1st_mark starts with '0' OR cwt_2nd_mark starts with '0'; AND 2) cwt_1st_mark count + cwt_2nd_mark count > 0 AND all records involved must have the same Related Group Id (field 12), Species (field 13) and Brood Year (field 15).
13	**Species** species	2	Yes	Lookup	Code indicating species of release group; Must match one of the following:
				'1'	=Chinook
				'2'	=Coho
				'3'	=Steelhead
				'4'	=Sockeye
				'5'	=Chum
				'6'	=Pink
				'7'	=Masu
				'8'	=Cutthroat
				'9'	=Atlantic Salmon
14	**Run** run	2	No	Lookup	Code to indicate run of this release group; If present, must match one of the following:
				'1'	=Spring
				'2'	=Summer
				'3'	=Fall (includes type S Coho)
				'4'	=Winter
				'5'	=Hybrid
				'6'	=Landlocked
				'7'	=Late Fall (includes type N Coho)
				'8'	=Late Fall Upriver Bright Chinook

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format /Use	Description & Validation Rules.....
				'9'	=Late Winter
15	**Brood Year** brood_year	4	Yes	YYYY	Calendar year when majority of parents of these fish spawned; If more than one brood present (i.e. wild tagging), then use dominant brood and report mixed stock tagging in Comments **Must be less than or equal to the current year**
16	**First Release Date** first_release_date	8	No	YYYYMMDD	Date in which releasing began for this release group Must be of the form 'YYYYMMDD' where: MM must be in the range '01' through '12'. May be absent DD must be in the range '01' through the last day of the month referenced by MM. Must be absent if MM is absent. May be absent when MM is present This date must be less than or equal to today First_release_date must be less than or equal to last_release_date **Required if study_integrity is not 'D'** YYYY portion of date is required.
17	**Last Release Date** last_release_date	8	No	YYYYMMDD	Date in which releasing ended for this release group If the release occurs on a single day, report that date for both first and last date fields. Must be of the form 'YYYYMMDD' where: MM must be in the range '01' through '12'. May be absent DD must be in the range '01' through the last day of the month referenced by MM. Must be absent if MM is absent. May be absent when MM is present This date must be less than or equal to today Last_release_date must be greater than or equal to first_release_date **Required if study_integrity is not 'D'** YYYY portion of date is required.
18	**Release Location Code** release_location_code	19	No	Lookup	Hierarchical location code to geographically identify actual release location All location codes are standardized within a given State or Province, and coordinated by the State/Province If present, must exactly match the location_code of location_type '4' in the PSC Location file **Required if study_integrity is not 'D'** **Trailing blanks should not be included**
19	**Hatchery Location Code** hatchery_location_code	19	No	Lookup	Hierarchical location code to geographically identify actual site of hatchery All location codes are standardized within a given State or Province, and coordinated by the State/Province

					If present, must exactly match the location_code of location_type '3' in the PSC Location file **Required if rearing_type is 'H'** **Must be absent if rearing_type is 'W' or 'M'** **Trailing blanks should not be included**
20	**Stock Location Code** stock_location_code	19	No	Lookup	Hierarchical coding scheme to identify the stock's location or stream All location codes are standardized within a given State or Province, and coordinated by the State/Province If present, must exactly match the location_code of location_type '5' in the PSC Location file **Trailing blanks should not be included**
21	**Release Stage** release_stage	1	No	Lookup 'Z' 'E' 'F' 'G' 'V' 'Y' 'P' 'S' 'A' 'M'	Code indicating stage of majority of release group at point of release; If present, must match one of the following: =Zygote (eyed eggs) =Emergent fry =Fed fry =Fingerling =Advanced fingerling =Yearling =Pre-smolt =Smolt =Adult =Multiple release stages If 'M' then comments are required
22	**Rearing Type** rearing_type	1	Yes	Lookup 'H' 'W' 'M' 'U'	Code indicating most prevalent rearing method for this release group; If present, must match one of the following: =Hatchery reared fish (includes **any** portion of fish's life history in hatchery or artificially enhanced environment) =Wild fish =Mixed hatchery & wild (downstream migrant or marine tagging) =Unknown (unavailable from release agency) If 'H' then hatchery_location_code is required If 'W', or 'M' then hatchery_location_code must be absent and release_strategy must be absent
23	**Study Type** study_type	1	No	Lookup 'E' 'P' 'B' 'O' 'K' 'I'	Code indicating type of study reflected by release group; If present, must match one of the following: =Experimental =Production =Both experimental and production =Other =PSC key indicator stocks =Other index streams

24	**Release Strategy** release_strategy	2	No	Lookup 'FR' 'MX' 'VO'	Code indicating strategy used to liberate majority of release group; If present, must match one of the following =Forced release =Mixed release strategies =Volitional release **Must be absent if rearing_type is 'W' or 'M'**
25	**Avg Weight** avg_weight	7	No	Numeric	Average weight of a fish in this release group at point of release Units = grams/fish If present, must be numeric in the range:'.01' through '9999.99' No implied decimal. Decimal optional with up to 2 digits after the decimal point
26	**Avg Length** avg_length	6	No	Numeric	Average length of a fish in this release group at point of release Units = millimeters (fork length) If present, must be numeric in the range: '1' through '999999'
27	**Study Integrity** study_integrity	1	No	Lookup 'N' 'D' 'W'	Code indicating the survival viability of this release group or the integrity of this study If present, must match one of the following: =Normal range expected =Fish destroyed; zero survival assumed =Warning flag for serious problems **If 'W' then comments are required**
28	**CWT 1st Mark** cwt_1st_mark	4	No	Lookup	Mark(s) on CWT fish corresponding to count value in cwt_1st_mark_count If present, must match a mark code from Mark Coding table in chapter 9 **Required if record_code is 'T'** **Must be absent if record_code is 'N'** **Required if corresponding cwt_1st_mark_count is present** **Must be absent if corresponding cwt_1st_mark_count is absent** **Must not begin with '9' if brood_year is greater than 1994** See chapter 13 for further discussion of the use of this field.
29	**CWT 1st Mark Count** cwt_1st_mark_count	8	No	Numeric	Number tagged with CWT corrected for tag loss and mortality Corresponds to mark code value in cwt_1st_mark **Required if corresponding cwt_1st_mark is present and study_integrity is not 'D'** **Must be absent if corresponding cwt_1st_mark is absent** If present, must be numeric in the range: '0' through '99999999' See chapter 13 for further discussion of the use of this field.
30	**CWT 2nd Mark** cwt_2nd_mark	4	No	Lookup	Mark(s) on CWT fish corresponding to count value in cwt_2nd_mark_count If present, must match a mark code from Mark Coding table in chapter 9 **Must be absent if record_code is 'N'**

					Required if corresponding cwt_2nd_mark_count is present **Must be absent if corresponding cwt_2nd_mark_count is absent** **Must not contain the same value as cwt_1st_mark** **Must not begin with '9' if brood_year is greater than 1994** See chapter 13 for further discussion of the use of this field.
31	**CWT 2nd Mark Count** cwt_2nd_mark_count	8	No	Numeric	Number tagged with CWT corrected for tag loss and mortality Corresponds to mark code value in cwt_2nd_mark **Required if corresponding cwt_2nd_mark is present and study_integrity is not 'D'** **Must be absent if corresponding cwt_2nd_mark is absent** If present, must be numeric in the range: '0' through '99999999' **Must be absent if cwt_1st_mark_count is zero or absent** See chapter 13 for further discussion of the use of this field.
32	**Non CWT 1st Mark** non_cwt_1st_mark	4	No	Lookup	Mark(s) on Non-CWT fish corresponding to count value in non_cwt_1st_mark_count If present, must match a mark code from Mark Coding table in chapter 9 **Required if record_code is 'N'** **Required if corresponding non_cwt_1st_mark_count is present** **Must be absent if corresponding non_cwt_1st_mark_count is absent** **Must not begin with '9' if brood_year is greater than 1995** See chapters 13 & 14 for further discussion of the use of this field.
33	**Non CWT 1st Mark Count** non_cwt_1st_mark_count	9	No	Numeric	Number with No CWT Tag Corresponds to mark code value in non_cwt_1st_mark **Required if corresponding non_cwt_1st_mark is present and study_integrity is not 'D'** **Must be absent if corresponding non_cwt_1st_mark is absent** If present, must be numeric in the range: '0' through '999999999' See chapters 13 & 14 for further discussion of the use of this field.
34	**Non CWT 2nd Mark** non_cwt_2nd_mark	4	No	Lookup	Mark(s) on Non-CWT fish corresponding to count value in non_cwt_2nd_mark_count If present, must match a mark code from Mark Coding table in chapter 9 **Required if corresponding non_cwt_2nd_mark_count is present** **Must be absent if corresponding non_cwt_2nd_mark_count is absent** **Must not contain the same value as non_cwt_1st_mark** **Must not begin with '9' if brood_year is greater than 1995** See chapters 13 & 14 for further discussion of the use of this field.
35	**Non CWT 2nd Mark Count** non_cwt_2nd_mark_count	9	No	Numeric	Number with No CWT Tag Corresponds to mark code value in non_cwt_2nd_mark **Required if corresponding non_cwt_2nd_mark is present and study_integrity is not 'D'**

					Must be absent if corresponding non_cwt_2nd_mark is absent **Must be absent if non_cwt_1st_mark_count is absent** If present, must be numeric in the range: '0' through '999999999' See chapters 13 & 14 for further discussion of the use of this field.
36	**Counting Method** counting_method	1	No	Lookup 'B' 'C' 'P' 'W' 'V' 'F'	Method used to determine number of non-CWT fish in the given release group; If present, must match one of the following: =Book estimates =Actual physical counts =Petersen estimates =Weight derived estimates =Volumetric Conversion =Feed Conversion Estimates
37	**Tag Loss Rate** tag_loss_rate	6	No	Numeric	Proportion of fish which shed the CWT from the tag loss sample (expressed as a decimal) If present, must be numeric in the range: '0' through '1' No implied decimal. Decimal optional with up to 4 digits after the decimal point **Must be absent if record_code is 'N' and tag_type is not '16'** May be present if record_code is 'N' and tag_type is '16' See chapter 13 for further discussion of the use of this field.
38	**Tag Loss Days** tag_loss_days	3	No	Numeric	Number of days fish held to measure tag loss; Fish tagged and released the same day are assigned '0' If present, must be numeric in the range: '0' through '999' **Must be absent if record_code is 'N' and tag_type is not '16'** May be present if record_code is 'N' and tag_type is '16'
39	**Tag Loss Sample Size** tag_loss_sample_size	5	No	Numeric	Number of fish sampled to calculate tag loss rate If present, must be numeric in the range: '0' through '99999' **Must be absent if record_code is 'N' and tag_type is not '16'** May be present if record_code is 'N' and tag_type is '16'
40	**Tag Reused** tag_reused	1	No	Boolean	Flag to indicate whether or not this record's tag code has been re-used **Required if record_code is 'T' and this record is either the original of a reused tag code or any instance of a reused tag code** If present, must have the value 'Y' **Must be absent if record_code is 'N'** See notes for Field #7 Tag Code or Release ID.
41	**Comments** comments	80	No	Text	Permits brief summary of pertinent information regarding release group **Required if study_integrity is 'W' or release_stage is 'M'**

CHAPTER 3

Recovery Data

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format /Use	Description & Validation Rules.....
1	**Record Code** record_code	1	Yes	Lookup 'R'	Code to indicate the CWT data file classification (class) of this individual record. Must have the value 'R': =Recovery record
2	**Format Version** format_version	4	Yes	'4.1'	Format version used to report data **Must have the value: '4.1'**
3	**Submission Date** submission_date	8	Yes	YYYYMMDD	Date of submission for this set of records. Date should be close to actual date when this row is sent to the Mark Center **Must have the same value for all records in this data submission** **Must match submission_date in corresponding Description file**
4	**Reporting Agency** reporting_agency	10	Yes	Lookup	Abbreviation for reporting agency of this dataset for this data exchange **Must contain an agency code defined in chapter 7** **Must be the same for all records**
5	**Sampling Agency** sampling_agency	10	No	Lookup	Agency responsible for sampling or collecting and tag recovery; May differ from reporting_agency If present, must contain an agency code defined in chapter 7
6	**Recovery ID** recovery_id	10	Yes	Primary Lookup	Unique ID's assigned to each recovery record by the recovery agency Once reported, must remain the same forever for this snout recovery **Must be unique for a given reporting_agency and run_year** **Must not contain embedded blanks**

7	**Species** species	2	Yes	Lookup '1' '2' '3' '4' '5' '6' '7' '8' '9'	Code indicating species of this recovered fish; Must match one of the following: =Chinook =Coho =Steelhead =Sockeye =Chum =Pink =Masu =Cutthroat =Atlantic Salmon **Must match the value in corresponding Catch/Sample data file, species**
8	**Run Year** run_year	4	Yes	YYYY	Calendar year corresponding to catch of this recovery in the fishery. For escapement which crosses year boundaries, it is the year in which majority of run returns **Must match Catch Year of corresponding Catch/Sample data file.** **For recoveries without an associated Catch/Sample, report same year as those with an associated catch/sample** **Must be the same for all records in this dataset**
9	**Recovery Date** recovery_date	8	Yes	YYYYMMDD	Date closest to that in which the catch occurred in the fishery for this decoded tag **Must be of the form 'YYYYMMDD' where:** **YYYY is Required and must be in range; '1970' through the current year** **MM must be in the range '01' through '12'.** May be absent **DD must be in the range '01' through the last day of the month referenced by MM. Must be absent if MM is absent.** May be absent if MM is present **Must not contain embedded blanks** Example: April 29, 2000 is coded: 20000429
10	**Recovery Date Type** recovery_date_type	1	No	Lookup 'R' 'C'	Code indicating the method used to determine recovery_date; If present, must match one of the following: =Reported date =Calculated date
11	**Period Type** period_type	2	No	Lookup '1' '2' '3' '4' '5' '6'	Code to Indicate the type of time periods in which sampling occurred in the fishery / stratum for this tag recovery; If present, must match one of the following: =Escapement period (across years possible) =Bi-weekly (statistical 2 week) =Semi-monthly (calendar) =Statistical month =Calendar month =Statistical week (beginning Monday)

				'7'	=Week (beginning Sunday)
				'8'	=Seasonal (Use for spring, summer, fall, or winter run periods)
				'10'	=Weekend (Saturday, Sunday & observed holiday(s))
				'11'	=Weekday (Monday – Friday excluding observed holiday(s))
					Required if sample_type is '1', '2', '4', or '6'
					Required if period present;
					period_type and period must match that used in Catch/Sample data file for the given stratum
12	**Period** period	2	No	Lookup	Indicates the complete range of time in which sampling occurred in the fishery / stratum for this tag recovery; Possible Ranges:
				n='01'	=Escapement period (across years possible)
				n='01-26'	=Bi-weekly (statistical 2 week)
				n='01-24'	=Semi-monthly (calendar)
				n='01-12'	=Statistical month
				n='01-12'	=Calendar month
				n='01-54'	=Statistical week (beginning Monday)
				n='01-54'	=Week (beginning Sunday)
				n='01-04'	=Seasonal periods (01=Spring, 02=Summer, 03=Fall, 04=Winter)
				n='01-54'	=Weekend beginning Saturday (or Friday if on observed holiday)
				n='01-54'	=Weekday beginning Monday (or first working day following observed holiday)
					Required to map across to sampling period range in the Catch/Sample data file
					Required if period_type present
					period_type and period must match that used in Catch/Sample data file for the given stratum
13	**Fishery** fishery	3	Yes	Lookup	Code (standardized PSC fishery code) to indicate the fishery in which this recovery occurred **Must match a code in the "Fishery" column from Chapter 8** **Must match the value in corresponding Catch/Sample data file, fishery**
14	**Gear** gear	6	No	Lookup	Code used by Agency "in-house" to identify its individual fishery or gear If present, should match a code in the "Fishery or Gear" column from Chapter 8
15	**Adclip Selective Fishery** adclip_selective_fishery	1	No	Boolean	Flag to indicate whether this recovery came from a fishery where only adipose clipped fish were allowed to be harvested **Required if Run Year (field 8) > 2007** **Must match one of the following:**
				'S'	= Yes /adclip selective fishery
				'M'	= Yes /mixed selective fishery (ad-clipped plus unclipped fish); see note below
				'N'	= Not selective
					Must have the value 'S' or 'M' if fishery is selective for ad-clips

NOTE: for adclip_selective_fishery 'M': refers to ad-clipped and unclipped catch. For example" a bag limit of 1 unclipped but multiple clipped fish.

16	**Estimation Level** estimation_level	1	No	Lookup '2' '3' '4' '5' '6'	Level of resolution at which expansion is made; If present, must match one of the following: =Level 2 (Sector) =Level 3 (Region) =Level 4 (Area) =Level 5 (Location) =Level 6 (Sub-Location) **Must match the value in corresponding Catch/Sample data file estimation_level** **Required if estimated_number is greater than '0'**
17	**Recovery Location Code** recovery_location_code	19	Yes	Lookup	Hierarchical and geographical coding scheme rendering multiple levels of resolution to Recovery Site All location codes are standardized within a given State or Province, and coordinated by the State/Province **Must exactly match the Location Code of Location Type '1' in the PSC Location file** Trailing blanks should not be included
18	**Sampling Site** sampling_site	4	No	Alpha-Numeric	Agency "in-house" codes for Port of landing, hatchery, etc.
19	**Recorded Mark** recorded_mark	4	Yes	Lookup	External mark recorded by sampler (See Note to follow) **Must contain a code defined in chapter 9**

NOTES for recorded_mark:

If **Adipose clip status is Known** then the recorded_mark should be:

0xxx if fish has not been Adipose clipped

5xxx if fish has been Adipose clipped

where xxx represents other marks which may have been checked and recorded

If **Adipose clip status is Unknown** then the recorded_mark should be:

9xxx where xxx represents other marks which may have been checked and recorded

20	**Sex** sex	1	No	Lookup 'F' 'M'	Code to indicate sex of this recovered fish; If present, must match one of the following: =Female =Male

21	**Weight** weight	5	No	Numeric	Weight in Kilograms If present, must be numeric in the range: '.01' through '99.99' No implied decimal. Decimal optional with up to 2 digits after the decimal point **These fields must all have values or must all be absent:** **– weight** **– weight_code** **– weight_type**
22	**Weight Code** weight_code	1	No	Lookup '1' '2' '3'	Code to indicate method of measuring fish for weight; If present, must match one of the following: =Round =Dressed, head on =Dressed, head off **These fields must all have values or must all be absent:** **– weight** **– weight_code** **– weight_type**
23	**Weight Type** weight_type	1	No	Lookup '1' '2'	Code to indicate how weight was determined; If present, must match one of the following: =Actual weight =Calculated weight (Sample size may be unknown) **These fields must all have values or must all be absent:** **– weight** **– weight_code** **– weight_type**
24	**Length** length	4	No	Numeric	Length in millimeters If present, must be numeric in the range: '1' through '9999' **Must not be greater than 1600mm if Species (field 7) is '1' (Chinook)** **Must not be greater than 1300mm if Species (field 7) is not '1'** **These fields must all have values or must all be absent:** **– length** **– length_code** **– length_type**

25	**Length Code** length_code	1	No	Lookup '0' '1' '2' '3' '4' '5' '6' '7'	Code to indicate method of measuring fish for length; If present, must match one of the following: =Fork length (preferred measurement) =Mid-eye to fork =Mid-eye to caudal peduncle =Total length =Head length: Eye to opercula =Head length: Tip of snout to opercula **These fields must all have values or must all be absent:** **– length** **– length_code** **– length_type** =Post-Orbital to Hypural =Post-Orbital to Fork
26	**Length Type** length_type	1	No	Lookup '1' '2'	Code to indicate how length was determined; If present, must match one of the following: =Actual length =Calculated length (Sample size may be unknown) **These fields must all have values or must all be absent:** **– length** **– length_code** **– length_type**
27	**Detection Method** detection_method	1	No	Lookup 'E' 'V'	Code indicating the method used to detect the presence of a tag on the fish; If present, must match one of the following: =Electronic; used only when all fish in the sample pass through electronic detection, regardless of clip status =Visual; used when all fish in the sample are first identified for an adipose fin clip, regardless of the use or timing of electronic detection methods **Required if catch_sample_id is present** If present, must match the value in corresponding Catch/Sample data file, detection_method
28	**Tag Status** tag_status	1	Yes	Lookup '1' '2' '3' '4' '7' '8' '9'	Must match one of the following: =Tag read OK (i.e. tag_code corresponds to a valid CWT release & has no unresolved discrepancies) =No tag =Tag lost before read =Tag not readable =Unresolved discrepancy (see notes to follow) =Head not processed =Pseudo tag, blank wire **If '1' or '9', then tag_code is required**

NOTES for tag_status:

The following instances may warrant a status of "Unresolved discrepancy":

1) If the tag_code has been re-used (contains "*") and may; therefore, have more than one possible release
2) If the tag_code does not match a CWT Release Group in the Release data file
3) Species of recovered fish does not match that in Release data file
4) Age of fish is illogical (where Age is the difference between brood_year and the year of Recovery)
5) tag_code shows up in recovery when Release record has Expected Survival of "D" (Destroyed)

Records classified as "Unresolved discrepancy" are still subject to all other validation requirements

29	**Tag Code** tag_code	12	No	Foreign Lookup AGD1D2D3D4	Identifier coded on a tag to denote a release group **Required if Tag Status is '1' or '9'** For tag_status '1': Required for it to be a valid CWT release For tag_status '9': 1) If completely blank wire was used, report verbatim the text: 'BLANK' in this field; 2) If agency-only coded wire was used, report verbatim the numeric agency wire prefix (i.e. Data 1) followed by the verbatim text: 'BLANK' in this field (e.g. agency 63 wire would be coded '63BLANK') For Sequential Tags Only: 1) Binary - the Sequential Table column and row information stored in Data 3 and Data 4 is not Reported here but rather in sequential_column_number & sequential_row_number; 2) Decimal - the Decimal Sequential information for Decimal Sequential tags is stored in sequential_number
30	**Tag Type** tag_type	2	No	Lookup '0' '1' '2' '3' '4' '5' '6' '7' '8' '9' '10' '11' '12' '13' '14' '15'	Code to indicate type of tag wire found in the recovery snout; If present, must match one of the following: =Standard binary (1mm) =Half tags (H type) =Half tags (B type) =6 word half-length tags =X-ray binary (tag_code must be 'XX0500') =Standard color =Solid color (##) =Striped color ($$) =Rare Earth =Repeating series =Sequential 6 word binary =Length & ½ Binary (1.5mm) =Standard Alphanumeric, includes Decimal (1 mm) =Length & ½ Alphanumeric, includes Decimal (1.5 mm) =Sequential Alphanumeric, includes Decimal =Half-length Alphanumeric, includes Decimal (0.5mm) **Tag code must be a minimum of 10 digits**

				’16’	=Pseudo tag, blank wire **Required if tag_status is ’1’ or ‘9’** **Must be ‘16’ if tag_status is ‘9’**
31	**Sequential Number** sequential_number	5	No	Numeric	Value identifying decimal number for this tag code; Used for decimal tags only If present, then tag_type must be ’10’ or ’14’
32	**Sequential Column Number** sequential_column_number	3	No	Numeric	Value in “Table Column”; Corresponds to column number in Sequential Numbers Table; Used for sequential tags only If present, must be numeric in the range: ’0’ through ’127’ If present, then tag_type must be ’10’
33	**Sequential Row Number** sequential_row_number	3	No	Numeric	Value in “Table Row”; Corresponds to row number in Sequential Numbers Table; Used for sequential tags only If present, must be numeric in the range: ’0’ through ’127’ If present, then tag_type must be ’10’
34	**Catch Sample ID** catch_sample_id	10	No	Foreign Lookup	Agency assigned ID used to associate recovery records in Recovery data file to corresponding catch/sample record in Catch/Sample data file. **Required if sample_type is ‘1’, ’2’, ’4’, or ‘6’** If present, must match the value in corresponding Catch/Sample data file, catch_sample_id **Must not contain embedded blanks**
35	**Sample Type** sample_type	1	Yes	Lookup	**Must match one of the following:**
				’1’	=In-sample recoveries from a sampled fishery with known catch; estimated_number must be absent or greater than ‘0’
				’2’	=Voluntary recoveries from a sampled fishery with known catch; Awareness estimates are available; estimated_number must be absent or greater than ‘0’ (e.g., Puget Sound Sport)
				’3’	=Voluntary recoveries from an unsampled fishery. Awareness approximations may be possible yielding non-zero estimated_number; otherwise estimated_number should be absent. (e.g., Hoh River freshwater sport fishery)
				’4’	=In-sample or voluntary recoveries from a sampled fishery with unknown catch; estimated_number must be absent. (e.g., Stream Survey)
				’5’	=Voluntary or select recoveries from a sampled fishery with known catch and no awareness estimates available; Use of these recoveries leads to double counting; see also Note #3 to follow estimated_number must be equal to ‘0’. (e.g., commercial voluntary recoveries);
				’6’	=Mark Incidence – Indirect Sample: Voluntary recoveries from indirectly sampled sport fishery; estimated_number are calculated from sport_mark_inc_sampl_obs_ads in sport_mark_incidence_sampl_size from the corresponding Catch Sample record
				’7’	=Pass-Through Sample: Recoveries that are selectively removed from certain in-river sampling programs; The migrant fish are subject to subsequent destination sampling number_caught must equal number_sampled. see also Note #3 to follow

Notes for sample_type: (see also notes for Catch/Sample sample_type field #18)

1) Four keys are used to distinguish the type of sample:
   a) Sample: In-sample or Voluntary
   b) Fishery: Sampled or Unsampled
   c) Catch: Known or Unknown
   d) Awareness: Available or Unavailable
2) Awareness estimates (Sample Type Code 2) are based on current year's data, while awareness approximations (Sample Type Code 3) are based on extrapolations of data from other periods or locations.
3) "Pass-through" Sampling (Sample Type Code 7) In certain sampling programs, some fish are released while selected fish are killed and snouts removed. The non-sampled fish are subject to subsequent destination sampling and the lack of reporting would result in underestimation of the tag codes. In this sampling situation, the number of fish pulled out of the pass-through equals the number sampled and generally gives an estimated number of 1.
4) Any associated Catch/Sample and Recovery records must have the same value of sample type.

36	**Sampled Maturity** sampled_maturity	1	No	Lookup '1' '2' '3' '4'	Code to indicate maturity class of sample in which this recovery occurred; If present, must match one of the following; =Immature(0-Ocean Fish) =Jacks (1-Ocean fish) =Adults =Mixed(adult, jack and immatures) **Must match the value in corresponding Catch/Sample data file, sampled_maturity**
37	**Sampled Run** sampled_run	2	No	Lookup '1' '2' '3' '4' '5' '6' '7' '8'	Code to indicate run when sample is stratified by entry run timing (e.g., freshwater sport fisheries where runs can be identified by morphological differences); If present, must match one of the following: =Spring =Summer =Fall (includes type S Coho) =Winter =Hybrid =Landlocked =Late Fall (includes type N Coho) =Late Fall Upriver Bright Chinook **Must match the value in corresponding Catch/Sample data file, sample_run**
38	**Sampled Length Range** sampled_length_range	8	No	Numeric	Length interval range in millimeters (mm); Example: 800 - 900 mm. length interval coded as 08000900 If present, must be numeric in the range: '00000000' through '99999999' The number represented by the first 4 bytes must be less than or equal to the number represented by the last 4 bytes

39	**Sampled Sex** sampled_sex	1	No	Lookup 'F' 'M'	Code to indicate sex of sample in which this recovery occurred; If present, must match one of the following: =Female =Male
40	**Sampled Mark** sampled_mark	4	No	Lookup	External mark used for differential sampling treatment. Used only if sampling treatments of returning fish were different based upon the external mark of the fish If present, must contain a code defined in chapter 9 **Must match the value in corresponding Catch/Sample data file, sampled_mark**
41	**Estimated Number** estimated_number	8	No	Numeric	Estimated number of tagged fish in the catch with the same coded wire tag represented by this tag recovery, as estimated by the reporting agency **Must be absent if this recovery is used to adjust the Estimated Number of other recoveries** If present and greater than zero, then catch_sample_id should be present and, if present, must match an existing catch_sample_id in the Catch/Sample file If present, must be numeric in the range: '0' through '99999.99' No implied decimal. Decimal optional with up to 2 digits after the decimal point

CHAPTER 4

Catch/Sample Data

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format / Use	Description & Validation Rules.....
1	**Record Code** record_code	1	Yes	Lookup 'S'	Code to indicate the CWT data file classification (class) of this individual record. Must have the value 'S': =Catch/Sample record
2	**Format Version** format_version	4	Yes	'4.1'	Format version used to report data **Must have the value: '4.1'**
3	**Submission Date** submission_date	8	Yes	YYYYMMDD	Date of submission for this set of records. Date should be close to actual date when this row is sent to the Mark Center **Must have the same value for all records in this data submission** **Must match submission_date in corresponding Description file**
4	**Reporting Agency** reporting_agency	10	Yes	Lookup	Abbreviation for reporting agency of this dataset for this data exchange **Must contain an agency code defined in chapter 7** **Must be the same for all records** **Must match reporting_agency of corresponding Recovery data file**
5	**Sampling Agency** sampling_agency	10	No	Lookup	Agency responsible for sampling or collecting and tag recovery; May differ from reporting_agency If present, must contain an agency code defined in chapter 7
6	**Catch Sample ID** catch_sample_id	10	Yes	Primary Lookup	Unique IDs assigned to each sample record by the reporting agency **Must be unique for a given reporting_agency and catch_year** **Must not contain embedded blanks**

7	**Species** species	2	Yes	Lookup '1' '2' '3' '4' '5' '6' '7' '8' '9'	Code indicating species of this catch group; Must match one of the following: =Chinook =Coho =Steelhead =Sockeye =Chum =Pink =Masu =Cutthroat =Atlantic Salmon **Must match the value in corresponding Recovery data file, species**
8	**Catch Year** catch_year	4	Yes	YYYY	Corresponds to Run Year in Recovery file. Year when catch was made. For escapement which crosses year boundaries, use year when majority of run returns **Must match run_year of corresponding Recovery data file** **Must be the same for all records in this dataset**
9	**Period Type** period_type	2	Yes	Lookup '1' '2' '3' '4' '5' '6' '7' '8' '10' '11'	Code to Indicate the type of time periods in which sampling occurred in the fishery / stratum; Must match one of the following: =Escapement period (across years possible) =Bi-weekly (statistical 2 week) =Semi-monthly (calendar) =Statistical month =Calendar month =Statistical week (beginning Monday) =Week (beginning Sunday) =Seasonal (Use for spring, summer, fall, or winter run periods) =Weekend (Saturday, Sunday & observed holiday(s)) =Weekday (Monday – Friday excluding observed holiday(s)) **period_type and period must match that used in Recovery data file for the given stratum**
10	**Period** period	2	Yes	Lookup n='01' n='01-26' n='01-24' n='01-12' n='01-12' n='01-54' n='01-54' n='01-04'	Indicates the complete range of time in which sampling occurred in the fishery / stratum; Possible Range: =Escapement period (across years possible) =Bi-weekly (statistical 2 week) =Semi-monthly (calendar) =Statistical month =Calendar month =Statistical week (beginning Monday) =Week (beginning Sunday) =Seasonal periods (01=Spring, 02=Summer, 03=Fall, 04=Winter)

				n='01-54'	=Weekend beginning Saturday (or Friday if on observed holiday)
				n='01-54'	=Weekday beginning Monday (or first working day following observed holiday)
					period_type and period must match that used in Recovery data file for the given stratum
11	**First Period** first_period	2	No	Lookup	Beginning sampling period number for situations where catch data are pooled across time periods Applies to non-standard estimated number calculations only If present, must define a valid period If present, Must be less than or equal to the value in last_period
12	**Last Period** last_period	2	No	Lookup	Ending sampling period number for situations where catch data are pooled across time periods Applies to non-standard estimated number calculations only If present, must define a valid period If present, must be greater than or equal to the value in first_period
13	**Fishery** fishery	3	Yes	Lookup	Code (standardized PSC fishery code) to indicate the fishery in which this catch occurred **Must match a code in the "Fishery" column from Chapter 8** **Must match the value in corresponding Recovery data file fishery**
14	**Adclip Selective Fishery** adclip_selective_fishery	1	No	Boolean	Flag to indicate whether or not this catch and sample were from a fishery where only adipose clipped fish were allowed to be harvested **Required if Catch Year (field 8) > 2007** Must match one of the following:
				'S'	= Yes /adclip selective fishery
				'M'	= Yes /mixed selective fishery (ad-clipped plus unclipped fish); see note below
				'N'	= Not selective
					Must have the value 'S' or 'M' if fishery is selective for ad-clips
Note for adclip_selective_fishery 'M': Refers to ad-clipped and unclipped catch. For example: a bag limit of 1 unclipped but multiple clipped fish.					
15	**Estimation Level** estimation_level	1	No	Lookup	Level of resolution at which estimation is made:
				'2'	=Level 2 (Sector)
				'3'	=Level 3 (Region)
				'4'	=Level 4 (Area)
				'5'	=Level 5 (Location)
				'6'	=Level 6 (Sub-Location)
					Required if number_estimated is greater than '0'. **Must match the value in corresponding Recovery data file estimation_level**

16	**Catch Location Code** catch_ location_code	19	Yes	Lookup	Hierarchical and geographical coding scheme to identify area of catch All location codes are standardized within a given State or Province, and coordinated by the State/Province **Must exactly match the Location Code of Location Type '2' in the PSC Location file** Trailing blanks should not be included
17	**Detection Method** detection_method	1	Yes	Lookup 'E' 'V'	Code indicating the method used to detect the presence of a tag on the fish; Must match one of the following: =Electronic =Visual **Must match the value in corresponding Recovery data file, detection_method**
18	**Sample Type** sample_type	1	Yes	Lookup '1' '2' '4' '6' '7'	**Must match one of the following:** (See notes to follow) =In-sample recoveries from a sampled fishery with known catch; estimated_number is non-zero. Also used to report unsampled catch estimated_number must be absent or greater than '0' =Voluntary recoveries from a sampled fishery with known catch; Awareness estimates are available; estimated_number must be absent or greater than '0' (e.g., Puget Sound Sport) =In-sample or voluntary recoveries from a sampled fishery with unknown catch; estimated_number must be absent. (e.g., Stream Survey with no escapement estimate) =Mark Incidence – Indirect Sample: Voluntary recoveries from indirectly sampled sport fishery; estimated_number are calculated from sport_mark_inc_sampl_obs_ads in sport_mark_incidence_sampl_size from corresponding Recovery record. =Pass-Through Sample: Recoveries that are selectively removed from certain in-river sampling programs; The migrant fish are subject to subsequent destination sampling; number_caught must equal number_sampled **Must match the value in corresponding Recovery data file, sample_type**
See notes for Recovery sample_type field # 35					
19	**Sampled Maturity** sampled_maturity	1	No	Lookup '1' '2' '3' '4'	Code to indicate maturity class of sample; If present, must match one of the following: =Immature (0-Ocean fish) =Jack (1-Ocean fish) =Adult =Mixed (adult, jack, and immature) **Must match the value in corresponding Recovery data file, sampled_maturity**

20	**Sampled Run** sampled_run	2	No	Lookup '1' '2' '3' '4' '5' '6' '7' '8' '9'	Code to indicate run when sample is stratified by entry run timing (e.g., freshwater sport fisheries where runs can be identified by morphological differences); If present, must match one of the following: =Spring =Summer =Fall (includes type S Coho) =Winter =Hybrid =Landlocked =Late Fall (includes type N Coho) =Late Fall Upriver Bright Chinook =Late Winter **Must match the value in corresponding Recovery data file, sampled_run**
21	**Sampled Length Range** sampled_length_range	8	No	Numeric	Length interval range in millimeters (mm); Example: 800 - 900 mm. length interval coded as 08000900 If present, must be numeric in the range: '0' through '99999999' The number represented by the first 4 bytes must be less than or equal to the number represented by the last 4 bytes
22	**Sampled Sex** sampled_sex	1	No	Lookup 'F' 'M'	Code to indicate sex of sample; **Must match one of the following:** =Female =Male
23	**Sampled Mark** sampled_mark	4	No	Lookup	External mark used for differential sampling treatment. Used only if sampling treatments of returning fish were different based upon the external mark of the fish (see note to follow) If present, must contain a code defined in chapter 9 **Must match the value in corresponding Recovery data file, sampled_mark**
NOTE for sampled_mark:	This field can only be used when the fish reported in number_caught were all examined for marks (for example, at a freshwater trap or hatchery rack).				
24	**Number Caught** number_caught	8	No	Numeric	Total catch of species for this area-period-fishery-age class stratum Required if sample_type is '1' and number_sampled is absent **Must be absent if sample_type is '4'** If present, must be numeric in the range: '0' through '99999999'
25	**Escapement Estimation Method** escapement_estimation_method	2	No	Lookup	Identifies the methodology used to estimate the natural spawning escapement (e.g. method used to determine the "number caught" in spawning ground carcass sampling); If present, must contain a code defined in chapter 10 **Must be absent if fishery is not '54' (Spawning Ground) or sample_type is not '1'**

26	**Number Sampled** number_sampled	8	No	Numeric	Number of fish examined for presence of tag wire **Required if sample_type is '1' and number_caught is absent** If present, must be greater than or equal to the sum of: number_recovered_decoded plus number_recovered_no_cwts plus number_recovered_cwts_lost plus number_recovered_unreadable plus number_recovered_unresolved plus number_recovered_not_processed plus number_recovered_pseudotags If present, must be numeric in the range: '0' through '99999999'
27	**Number Estimated** number_estimated	8	No	Numeric	Estimated number of fish in the catch represented by the individual recovery If present, must be numeric in the range: '0' through '99999.99' No implied decimal. Decimal optional with up to 2 digits after the decimal point
28	**Number Recovered Decoded** number_recovered_decoded	5	No	Numeric	Number of observed tags recovered and decoded in the sampling stratum; (i.e., Recovery tag_status is '1') If present, must be numeric in the range: '0' through '99999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled
29	**Number Recovered No CWTs** number_recovered_no_cwts	4	No	Numeric	Number of heads lacking CWT in sampling stratum; (i.e., Recovery tag_status is '2') If present, must be numeric in the range: '0' through '9999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled
30	**Number Recovered Lost CWTs** number_recovered_lost_cwts	3	No	Numeric	Number of lost CWTs in sampling stratum; (i.e., Recovery tag_status is '3') If present, must be numeric in the range: '0' through '999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled
31	**Number Recovered Unreadable** number_recovered_unreadable	3	No	Numeric	Number of unreadable CWTs in sampling stratum; If present ,must be numeric in the range: '0' through '999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled
32	**Number Recovered Unresolved** number_recovered_unresolved	3	No	Numeric	Number of tag recoveries in sampling stratum which could not be assigned to a tag code (i.e., Recovery tag_status is '7') If present, must be numeric in the range: '0' through '999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled

33	**Number Recovered Not Processed** number_recovered_not_processed	5	No	Numeric	Number of lost heads or heads not processed (i.e., no data) in sampling stratum; (i.e., Recovery tag_status is '8') If present, must be numeric in the range: '0' through '99999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled
34	**Number Recovered PseudoTags** number_recovered_pseudotags	3	No	Numeric	Number of fish among number_sampled which contained tag type 16 (Pseudo tag, blank wire) as described under Tag Type in Chapter 2 Releases. If present, must be numeric in the range: '0' through '999' If present and sample_type is not equal to '2', must be less than or equal to number_sampled
35	**MR 1st Partition Size** mr_1st_partition_size	8	Yes	Numeric	Number of fish in first mark rate partition **Must be numeric in the range: '0' through '99999999'** See Chapter 12 for discussion of the use of this field.
36	**MR 1st Sample Size** mr_1st_sample_size	8	Yes	Numeric	Number of fish among mr_1st_partition_size which were visually sampled for adipose clips **Must be numeric in the range: '0' through '99999999'** **Must be less than or equal to mr_1st_partition_size** See Chapter 12 for discussion of the use of this field.
37	**MR 1st Sample Known Ad Status** mr_1st_sample_known_ad_status	8	No	Numeric	Number of fish among mr_1st_sample_size which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip) **Required if mr_1st_sample_size is greater than '0'.** **Must be absent if mr_1st_sample_size is equal to '0' and sample_type is not equal to '2'.** If present, must be numeric in the range: '0' through '99999999' If present and sample_type is not equal to '2', must be less than or equal to mr_1st_sample_size See Chapter 12 for discussion of the use of this field.
38	**MR 1st Sample Obs Adclips** mr_1st_sample_obs_adclips	8	No	Numeric	Number of fish among mr_1st_sample_size which were found to have an adipose clip **Required if mr_1st_sample_size is greater than '0'.** **Must be absent if mr_1st_sample_size is equal to '0' and sample_type is not equal to '2'.** If present, must be numeric in the range: '0' through '99999999' If present and sample_type is not equal to '2', must be less than or equal to mr_1st_sample_size See Chapter 12 for discussion of the use of this field.
39	**MR 2nd Partition Size** mr_2nd_partition_size	8	No	Numeric	Number of fish in second mark rate partition **Required if mr_2nd_sample_size is present** **Must be absent if mr_2nd_sample_size is absent** If present, must be numeric in the range: '0' through '99999999' See Chapter 12 for discussion of the use of this field.

40	**MR 2nd Sample Size** mr_2nd_sample_size	8	No	Numeric	Number of fish among mr_2nd_partition_size which were visually sampled for adipose clips **Required if mr_2nd_partition_size is present** **Must be absent if mr_2nd_partition_size is absent** If present, must be numeric in the range: '0' through '99999999' See Chapter 12 for discussion of the use of this field.
41	**MR 2nd Sample Known Ad Status** mr_2nd_sample_known_ad_status	8	No	Numeric	Number of fish among mr_2nd_sample_size which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip) **Required if mr_2nd_sample_size is greater than '0'** **Must be absent if mr_2nd_sample_size is equal to '0' or is absent.** If present, must be numeric in the range: '0' through '99999999' If present, must be less than or equal to mr_2nd_sample_size See Chapter 12 for discussion of the use of this field.
42	**MR 2nd Sample Obs Adclips** mr_2nd_sample_obs_adclips	8	No	Numeric	Number of fish among mr_2nd_sample_size which were found to have an adipose clip **Required if mr_2nd_sample_size is greater than '0'.** **Must be absent if mr_2nd_sample_size is equal to '0' or is absent.** If present, must be numeric in the range: '0' through '99999999' If present, must be less than or equal to mr_2nd_sample_size See Chapter 12 for discussion of the use of this field.
43	**Mark Rate** mark_rate	6	No	Numeric	Proportion of fish in the number_sampled that were adipose fin clip marked (expressed as a decimal percentage) If present, must be numeric in the range: '0' through '1'. No implied decimal. Decimal optional with up to 4 digits after the decimal point

NOTE for mark_rate:
Warning: If detection_method='E' and mr_1st_sample_size not equal to mr_1st partition size or mr_2nd_sample_size not equal to mr_2nd_partition_size, the usefulness of this rate will be dependent upon the subsamples being adequately representative of the partitions. See chapter 12 for further discussion of the use of this field.

44	**Awareness Factor** awareness_factor	5	No	Numeric	Estimation factor used for voluntary recoveries in sport fisheries If present, must be numeric in the range: '0' through '9.999' No implied decimal. Decimal optional with up to 3 digits after the decimal point
45	**Sport Mark Incidence Sampl Size** sport_mark_incidence_sampl_size	5	No	Numeric	Number of fish sampled for marks in sport fishery but heads not taken; Use only if sample_type is '6' **Must be absent if sample_type is not '6'** If present, must be numeric in the range: '0' through '99999'

46	**Sport Mark Inc Sampl Obs Adclips** sport_mark_inc_sampl_obs_adclips	4	No	Numeric	Number of observed ad clips in sport fishery but heads not taken; Use only if sample_type is ’6’ **Must be absent if sample_type is not ‘6’** If present, must be numeric in the range: ’0’ through ’9999’

CHAPTER 5

Location Data

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format / Use	Description & Validation Rules.....
1	**Record Code** record_code	1	Yes	Lookup 'L'	Code to indicate the CWT data file classification (class) of this individual record. Must have the value 'L': =Location record
2	**Format Version** format_version	4	Yes	'4.1'	Format version used to report data **Must have the value: '4.1'**
3	**Submission Date** submission_date	8	Yes	YYYYMMDD	Date of submission for this set of records. Date should be close to actual date when this row is sent to the Mark Center **Must have the same value for all records in this data submission** **Must match the submission_date in corresponding Description file**
4	**Reporting Agency** reporting_agency	10	Yes	Lookup	Abbreviation for reporting agency of this dataset for this data exchange **Must contain an agency code defined in chapter 7** **Must be the same for all records**
5	**Location Code** location_code see notes to follow	19	Yes	Primary Lookup	19 – character code used to identify hatchery, release location, recovery site, catch area, or stock Coding based on hierarchical scheme to give multiple levels of resolution (see notes to follow) All location codes are standardized within a given State or Province, and coordinated by the State/Province **Must be unique within a given location_type** Trailing Blanks should not be included
	a. Level 0 State or Province	(1)			The first character must match one of the following:
				'1'	=Alaska
				'2'	=British Columbia / Yukon
				'3'	=Washington
				'4'	=Idaho
				'5'	=Oregon
				'6'	=California
				'7'	=High Seas – outside all 200 mile Economic Exclusive Zones
				'8'	=Foreign Country – outside State/Province list

	b. Level 1; Water Type	(1)			The second character must match one of the following: 'M' =Marine 'F' =Freshwater
	c. Level 2; Sector	(1)		Alpha-Numeric	The third character (Sector) can be agency defined alpha-numeric text (Special case: use of asterisk; see note 3 to follow)
	d. Level 3; Region	(2)		Alpha-Numeric	Characters 4 and 5 (Region) are agency defined alpha-numeric text
	e. Level 4; Area	(4)		Alpha-Numeric	Characters 6 through 9 (Area) are agency defined alpha-numeric text
	f. Level 5; Location	(7)		Alpha-Numeric	Characters 10 through 16 (Location) are agency defined alpha-numeric text
	g. Level 6; Sub-Location	(3)		Alpha-Numeric	Characters 17 through 19 (Sub-Location) are agency defined alpha-numeric text

Notes for location_code:

1) General usage of location codes - Standardized location codes are maintained for a State or Province by the State/Province fisheries agency. **These codes must be used by all other agencies within that jurisdiction.**
2) Reporting of location codes - When reporting a Location data set, report only those Location Codes for which your reporting agency is responsible. **Do not report codes maintained by another reporting agency.**
3) Usage of asterisk ('*') in character 3 (Sector) of location code
   Use of the asterisk ('*') is restricted to only these situations:
   a) If a code from the external State/Province cannot be provided due to sampling or timing problems;
   b) If the location is in a foreign (i.e. non-North American) country—thus cannot be provided.
   Wherever possible, use those codes already provided by the external State/Province.
   If an asterisk is used, then characters 1 and 2 of Description (field 13) must contain a state, province, high seas (HS), or foreign country (FO) code. See also Description (field 13) below.

6	**Location Type** location_type	1	Yes	Primary Lookup	Type of geographic location referred to by location file reporting agency; Must match one of the following: '1' =Recovery site '2' =Catch area or Effort area (code must match Recovery Site code at Estimation Level) '3' =Release facility (i.e., Hatchery, etc.) '4' =Release Location '5' =Stock
7	**Name** name	25	Yes	Alpha-Numeric	Concise description of the location Must be unique within: 1) State or Province (i.e. level 0) of location_code. 2) location_type

8	**Latitude** latitude	8	No	Numeric	Decimal global latitude of the location_code These fields must both have values or must both be absent: Latitude Longitude If present, must be numeric decimal in the range: '0' through '90' No implied decimal. Decimal optional with up to 4 digits after the decimal point
9	**Longitude** longitude	9	No	Numeric	Decimal global longitude of the location_code Use '-' to identify Western hemisphere. (Ex. '-123.557') These fields must both have values or must both be absent: Latitude Longitude If present, must be numeric decimal in the range: '-179.9999' through '180' No implied decimal. Decimal optional with up to 4 digits after the decimal point
10	**PSC Basin** psc_basin	5	No	Lookup	The geographic basin or district corresponding to at least one sub-division within the given psc_region which encompasses the location given by location_code (see note to follow) If present, must contain a code defined in chapter 11
11	**PSC Region** psc_region	5	No	Lookup	The geographic region or area corresponding to a major river, coastal area, or passage within the State or Province which encompasses the location given by location_code (see note to follow) If present, must contain a code defined in chapter 11

Note for psc_basin and psc_region:

PSC Region Code and PSC Basin Code are currently specified only for Hatcheries, Release Locations, and Stocks (i.e. where location_type is '3', '4', '5'). PSC Region Code and PSC Basin Code are defined in chapter 11.

12	**EPA Reach** epa_reach	18	No	Alpha-Numeric	For USA Territories (see note to follow); **Must not contain embedded blanks**

Note for epa_reach:

EPA Reach pertains to any location_codes of any location_type which can be associated with a freshwater transport or shoreline EPA Reach Number. When provided, epa_reach should be assigned either the complete (17-character) EPA Reach Number or the most specific portion of the EPA Reach Number possible to describe the location. See explanation in chapter 11.

13	**Description** description	100	Yes	Alpha-Numeric	Name of location plus appropriate description as needed If level 2 (column 3) of location_code contains an asterisk ('*'), then this description must begin with one of the following 2-character abbreviations indicating actual origin. In such cases, this State or Province must be different than that coded in level 0 of the Location Code 'AK' = Alaska 'BC' = British Columbia 'CA' = California 'CO' = Colorado 'FO' = Foreign 'HS' = High Seas 'ID' = Idaho 'OR' = Oregon 'WA' = Washington 'MN' = Minnesota 'MT' = Montana 'ND' = North Dakota 'NE' = Nebraska 'WI' = Wisconsin 'WY' = Wyoming

CHAPTER 6

Description Data

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format / Use	Description & Validation Rules.....
1	**Record Code** record_code	1	Yes	Lookup 'D'	Code to indicate the CWT data file classification (class) of this individual record. Must have the value 'D': =Description record
2	**Format Version** format_version	4	Yes	'4.1'	Format version used to report data **Must have the value: '4.1'**
3	**Submission Date** submission_date	8	Yes	YYYYMMDD	Refers to the date the Reporting Agency submitted the corresponding (or attached) data file or set of records indicated in file_type **Must have the same value for all rows corresponding to the same file_type** **Must be greater than submission_date of previously submitted Description file for the given file_type** **Must not be greater than today**
4	**Reporting Agency** reporting_agency	10	Yes	Lookup	Abbreviation for reporting agency of this dataset for this data exchange **Must contain an agency code defined in chapter 7** **Must be the same for all records**
5	**Submission Status** submission_status	1	Yes	Lookup 'N' 'R'	Must match one of the following =New data file =Resubmitted data file
6	**File Type** file_type	2	Yes	Primary Lookup 'RL' 'RC' 'CE' 'CS' 'LC'	Type of data file to which description pertains; Must match one of the following: =Release (tagged and/or untagged) =Recovery =Catch & Effort =Catch/Sample =Location
7	**File Status** file_status	1	Yes	Lookup 'I' 'C'	Must match one of the following =Incomplete data file =Complete data file

PSC Fld #	PSC Common Name and Data Field Name	Max Cols	Reqd	Format / Use	Description & Validation Rules.....
8	**First Year** first_year	4	No	YYYY	If file_type is 'RC', 'CE' or 'CS', then this field can be used to specify the first year in a range of file years so that one description can be repeated for several years **Required if File Type Code is 'RC', 'CE' or 'CS'** YYYY must contain run_year if File Type is 'RC' or catch_year if File Type is 'CS' or catch_effort_year if File Type is 'CE' **Must be absent if file_type is 'LC' or 'RL'**
9	**Last Year** last_year	4	No	YYYY	If file type is 'RC', 'CE' or 'CS', then this field can be used to specify the last year in a range of file years so that one description can be repeated for several years (see note to follow) Used only if: 1) file_type is 'RC', 'CE' or 'CS' AND 2) Multiple and consecutive file years are reported with the same description Use same format as first_year **Must be absent if file_type is 'LC' or 'RL'**

Note for file_end_year:

In order to submit one description pertaining to multiple file years, the file years must be consecutive. If there are any gaps in file years then a new Data Description {set of rows of the given file_type} must be submitted for every non-consecutive file year.

10	**Description** description	2,000	Yes	Alpha-Numeric	Textual description to further explain meaning of data for a file_type and one consecutive span of file years May contain up to 2,000 characters

CHAPTER 7

AGENCY CODING

A. Release Agency

Field: Release Agency
File: Releases
Current as of: April, 2017
Authorized: PSC Working Group on Data Standards

Release Agency must match one of these:

AAC	American Aquaculture Corporation (AK)
AAI	Alaska Aquaculture, Inc
ADFG	Alaska Department of Fish and Game
AEF	Alaska Educational Facility
AFSP	Aboriginal Fishery Strategy Program (BC)
AKI	Armstrong Keta, Inc. (AK)
ANAD	Anadromous Inc. (OR)
ARF	Alaska Research Facility
ASLC	Alaska SeaLife Center
BCFW	British Columbia Fish and Wildlife
BHSR	Burnt Hill Salmon Ranch (now OPSR) (OR)
BURR	Burro Creek Hatchery (AK)
CCF	Clatsop County Fisheries Project (OR)
CCT	Colville Confederated Tribes (WA)
CDFO	Fisheries and Oceans Canada
CDFR	Fisheries and Oceans Canada - Research
CDFW	California Department of Fish and Wildlife
CDWR	Department of Water Resources (WA)
CHEH	Chehalis Tribe (WA)
CIAA	Cook Inlet Aquaculture Association (AK)
COOP	Washington Department of Fish and Wildlife – Cooperative
CRITFC	Columbia River Inter-Tribal Fish Commission
CTWSRO	Confederated Tribes of the Warm Springs Reservation of Oregon (OR)
CVTC	Chickaloon Village Traditional Council (AK)
DIPAC	Douglas Island Pink and Chum, Inc. (AK)
DCPUD	Douglas County PUD (WA)
DOMS	Domsea Farms, Inc. (OR-WA)

EBMUD	East Bay Municipal Utilities District (CA)
EDUC	Educational Facility (excluding UW) (WA)
ELWHA	Lower Elwha Klallam Tribe (WA)
ESRP	Eel River Salmon Restoration Project (CA)
H&H	Harris & Hugie Company (OR)
HECK	C.W. Heckard Company (OR)
HFAC	Humbolt Fish Action Council (CA)
HOH	Hoh Indian Tribe (WA)
HSU	Humboldt State University (CA)
HVT	Hoopa Valley Tribe (CA)
IDFG	Idaho Department of Fish and Game
KAKE	Kake Non-Profit Fisheries Corp. (AK)
KARUK	Karuk Tribe (CA)
KETA	Keta Company (OR)
KRAA	Kodiak Regional Aquaculture Association (AK)
KRHI	Klawock River Hatchery, Inc. (AK)
KTHC	Ketchikan Tribal Hatchery Corporation (AK)
LUMMI	Lummi Nation (WA)
MAKAH	Makah Tribe (WA)
MIC	Metlakatla Indian Community (AK)
MIT	Muckleshoot Indian Tribe (WA)
MSG	Mattole Salmon Group (CA)
NBS	National Biological Survey
NERK	Nerka Incorporated (AK)
NFA	Nome Fishermen’s Association (AK)
NISQ	Nisqually Indian Tribe (WA)
NLNS	Nehalem Land & Salmon (OR)
NMFS	National Marine Fisheries Service (AK)
NOOK	Nooksack Indian Tribe (WA)
NPT	Nez Perce Tribe (ID)
NSEDC	Norton Sound Economic Development Corp (AK)
NSRAA	Northern Southeast Regional Aquaculture Association. (AK)
NVWM	Native Village of Winter Mountain (AK)
OAF	Oregon Aquafoods, Inc.
ODFW	Oregon Department of Fish and Wildlife
OPSR	Oregon-Pacific Salmon Ranch (formerly BHSR)
OSU	Oregon State University
PGHC	Port Graham Hatchery Corporation (AK)
PGST	Port Gamble S'Klallam Tribe (WA)
PLCO	Pacific Lumber Company (CA)

PNPTC	Point No Point Treaty Council (WA)
POWHA	Prince of Wales Hatchery Association (AK)
PSE	Puget Sound Energy (WA)
PUYA	Puyallup Tribe of Indians (WA)
PWSAC	Prince William Sound Aquaculture Corporation (AK)
QDNR	Quinault Division of Natural Resources (WA)
QUIL	Quileute Nation (WA)
RFEG	Regional Fisheries Enhancement Groups (WA)
RMPC	Regional Mark Processing Center(PSMC HQ, OR)
ROWH	Rowdy Cr. Hatchery (CA)
SAUK	Sauk-Suiattle Indian Tribe (WA)
SHOL	Shoalwater Tribe (WA)
SIUF	Siuslaw Fisheries (OR)
SJC	Sheldon Jackson College (AK)
SJRG	San Joaquin River Group (CA)
SKOK	Skokomish Indian Tribe (WA)
SOF	Silverking Oceanic Farms (CA)
SQAX	Squaxin Island Tribe (WA)
SRKC	Smith River Kiwanis Club
SRSC	Skagit River System Cooperative (WA)
SSRAA	Southern Southeast Regional Aquaculture Association (AK)
SSSC	Sitka Sound Science Center (AK)
STIL	Stillaguamish Tribe of Indians (WA)
STK	Sun'aq Tribe of Kodiak (AK)
STOI	Spokane Tribe of Indians (WA)
SUQ	Suquamish Tribe (WA)
SYCL	South Yuba River Citizens League (CA)
THFDC	Central Council Tlingit-Haida Indian Tribes of Alaska (AK)
TP	Tacoma Power (WA)
TULA	Tulalip Tribes (WA)
TYEE	Tyee Foundation (CA)
UA	University of Alaska
UI	University of Idaho
UPSK	Upper Skagit Tribe (WA)
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
UW	University of Washington School of Aquatic and Fishery Science (WA)
VFDA	Valdez Fisheries Development Association (AK)
WDFW	Washington Department of Fish and Wildlife

YAKA	Yakama Nation (WA)

B. Reporting Agency

Field:	Reporting Agency
Files:	Releases, Recoveries & Catch/Sample
Current as of:	April, 2017
Authorized:	PSC Working Group on Data Standards

Reporting Agency must match one of these:

ADFG	Alaska Department of Fish and Game
CCT	Colville Confederated Tribes (WA)
CDFO	Fisheries and Oceans Canada
CDFW	California Department of Fish and Wildlife
CDFWKT	California Department of Fish and Wildlife Klamath/Trinity
CRITFC	Columbia River Inter-Tribal Fish Commission
IDFG	Idaho Department of Fish and Game
NMFS	National Marine Fisheries Service (AK)
NMFSNWR	National Marine Fisheries Service NW Region (OR, WA)
NPT	Nez Perce Tribe (ID)
NWIFC	Northwest Indian Fisheries Commission
ODFW	Oregon Department of Fish and Wildlife
QDNR	Quinault Division of Natural Resources (WA)
QUIL	Quileute Nation (WA)
RMPC	Regional Mark Processing Center (PSMFC HQ, OR)
STIL	Stillaguamish Tribe of Indians (WA)
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
YAKA	Yakama Nation (WA)
YTFP	Yurok Tribe Fisheries Program (CA)

C. Sampling Agency

Field:	Sampling Agency
Files:	Recoveries & Catch/Sample
Current as of:	April, 2017
Authorized:	PSC Working Group on Data Standards

Sampling Agency must match one of these:

ADFG	Alaska Department of Fish and Game
CCT	Colville Confederated Tribes (WA)
CDFO	Fisheries and Oceans Canada
CDFW	California Department of Fish and Wildlife
CDWR	California Department of Water Resources
CTUIR	Confederated Tribes of the Umatilla Indian Res (OR)
EBMUD	East Bay Municipal Utilities District (CA)
ELWA	Lower Elwha Klallam Tribe (WA)
HOH	Hoh Indian Tribe (WA)
HVT	Hoopa Valley Tribe (CA)
IDFG	Idaho Department of Fish and Game
LUMMI	Lummi Nation (WA)
MAKAH	Makah Tribe (WA)
MIT	Muckleshoot Indian Tribe (WA)
NISQ	Nisqually Tribe (WA)
NMFS	National Marine Fisheries Service (AK)
NMFSNWFSC	NMFS Northwest Fisheries Science Center (WA)
NMFSNWR	National Marine Fisheries Service NW Region (OR, WA)
NPT	Nez Perce Tribe (ID)
NVWM	Native Village of Winter Mountain (AK)
NWIFC	Northwest Indian Fisheries Commission
ODFW	Oregon Department of Fish and Wildlife
PGST	Port Gamble S'Klallam Tribe (WA)
PNPTC	Point No Point Treaty Council (WA)
PUYA	Puyallup Tribe of Indians (WA)
QDNR	Quinault Division of Natural Resources (WA)
QUIL	Quileute Nation (WA)
SBT	Shoshone Bannock Tribes (ID)

SKOK	Skokomish Indian Tribe (WA)
SRSC	Skagit River System Cooperative (WA)
STIL	Stillaguamish Tribe of Indians (WA)
SUQ	Suquamish Tribe (WA)
TP	Tacoma Power (WA)
TULA	Tulalip Tribes (WA)
USFWS	U.S. Fish and Wildlife Service
UW	University of Washington School of Aquatic and Fishery Science (WA)
WDFW	Washington Department of Fish and Wildlife
YAKA	Yakama Nation (WA)
YTFP	Yurok Tribe Fisheries Program (CA)

CHAPTER 8

FISHERY CODING

A. Overview

Fishery Groups	Gear
10-19	Troll
20-29	Net and Seine
30-39	Aboriginal
40-49	Sport
50-59	Escapement
60-69	Test Fisheries
70-79	Juvenile Sampling
80-89	High Seas
90-99	Miscellaneous

B. Detailed Coding

'10' Series: Troll

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
10	Ocean Troll (Non-treaty)	ADFG	10_5	Mark Selective Troll
			11_5	Traditional Troll
		CDFO	30	Troll General
			31	Troll – Freezer Boat
			32	Troll – Day Boat
			33	Troll – Ice Boat
		CDFW	00	Commercial Trol
		ODFW	10	Ocean Troll
		WDFW	41	Troll (Non-treaty)
11	Ocean Troll - Day Boat	ADFG	13_5	Spring Troll Fishery
		CDFO	32	Troll - Day Boat
		WDFW	41	Troll (Non-treaty)

12	Ocean Troll - Trip	WDFW	41	Troll (Non-treaty)
13	Ocean Troll - Freezer Boat	CDFO	31	Troll – Freezer Boat
14	Ocean Troll - Ice Boat	CDFO	33	Troll – Ice Boat
15	Treaty Troll	WDFW	10	Hook & Line
			40	Treaty Troll
16	Terminal Troll	ADFG	12_5	Terminal Area Troll
		NMFS (AK)	73	Terminal Troll
17	Non-treaty / Treaty Troll	WDFW	40	Treaty Troll
			41	Troll (Non-treaty)
18	Aboriginal Troll	ADFG	17_5	M.I.C. Troll
		CDFO	07	Rod & Reel
			30	Troll – General
			31	Troll – Freezer Boat
			32	Troll – Day Boat
			33	Troll – Ice Boat
19	Other			

’20’ Series: Net and Seine

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
20	Ocean Gillnet (Non-treaty)	ADFG	11_3	Traditional Drift Gillnet
		CDFO	10	Gillnet
			13	Drift Net
			15	Mixed Net
21	Columbia River Gillnet	ODFW	13	Columbia River Gillnet
		WDFW	11	Dip Bag Net
			14	Non-treaty Drift Gillnet
			16	Set Gillnet
			17	Treaty Drift Gillnet
			49	Mixed Gillnet

22	Coastal Gillnet	ADFG	12_3	Terminal Area Drift Gillnet
		USFWS	16	Coastal Net
		QDNR	16	Coastal Net
		WDFW	14	Non-treaty Drift Gillnet
			16	Set Gillnet
			17	Treaty Drift Gillnet
			49	Mixed Gillnet
23	Mixed Net and Seine	ADFG	11_2	Traditional Beach Seine
		CDFO	10	Gillnet
			11	Set Net
			12	Dip Net
			13	Drift Net
			15	Mixed Net
			20	Seine
			70	Beach Seine
		ODFW	38	Columbia Commercial Beach Seine
		WDFW	10	Hook & Line
			11	Dip Bag Net
			12	Beach Seine
			14	Non-treaty Drift Gillnet
			15	Round Haul Net
			16	Set Gillnet
			17	Treaty Drift Gillnet
			19	Non-treaty Purse Seine
			20	Reef Net
			29	Treaty Purse Seine
			49	Mixed Gillnet
			51	Treaty Trap
			52	Mixed Net
24	Freshwater Net	ADFG	11_8	Traditional Fish Wheel
		CCT	10	Hook & Line
		CCT	11	Dip Bag Net
		CCT	12	Beach Seine
		CCT	19	Non-treaty Purse Seine
		CCT	24	Freshwater Net (Mixed)
		CDFO	10	Gillnet
		CDFO	11	Set Net
		NWIFC	16	Set Gillnet

		QUIL	16	Set Gillnet
		QUIL	24	Freshwater Net (mixed)
		STIL	24	Freshwater Net (mixed)
		WDFW	10	Hook & Line
			11	Dip Bag Net
			12	Beach Seine
			14	Non-treaty Drift Gillnet
			16	Set Gillnet
			17	Treaty Drift Gillnet
			19	Non-treaty Purse Seine
			29	Treaty Purse Seine
			52	Mixed Net
		YTFP	YS	Yurok Set Net
25	Commercial Seine	ADFG	11_1	Traditional Purse Seine
		CDFO	20	Seine
		NMFS	11_1	Traditional Purse Seine
		ODFW	71	Columbia R Beach Seine
			72	Columbia R Purse Seine
26	Terminal Seine	ADFG	12_1	Terminal Area Purse Seine
		NMFS (AK)	77	Terminal Seine
27	Freshwater Seine	ODFW	36	River Seine (non-Columbia)
28	Other Net	ADFG	11_4	Traditional Set Gillnet
29	Other Seine	ODFW	29	Willamette Falls Fishway Jack Sampling

’30’ Series: Aboriginal

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
30	Aboriginal Seine	ADFG	17_1	M.I.C. Purse Seine
		CDFO	20	Seine
31	Aboriginal Gillnet	ADFG	17_3	M.I.C. Drift Gillnet
		CDFO	10	Gillnet
32	Aboriginal Mixed Net	CDFO	00	Unspecified Net

			10	Gillnet
			11	Set Net
			12	Dip Net
			13	Drift Net
			15	Mixed Net
			20	Seine
			70	Beach Seine
33	Aboriginal Subsistence Net	YTFP	YD	Yurok Drift Gillnet
			YP	Yurok Dip Net
			YS	Yurok Set Net
34	Aboriginal Angler	YTFP	YA	Yurok Angler
39	Other Aboriginal	CDFO	00	Unspecified Gear
			07	Rod and Reel
			10	Gillnet
			11	Set Net
			12	Dip Net
			13	Drift Net
			30	Troll
			33	Troll – Ice Boat
			70	Beach Seine
			85	Spear
		YTFP	YA	Yurok Angler
		YTFP	YD	Yurok Drift Gillnet
		YTFP	YO	Yurok Other/Unknown
		YTFP	YP	Yurok Dip Net
		YTFP	YS	Yurok Set Net

’40’ Series: Sport

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
40	Ocean Sport	ADFG	S1_N	Marine Sport (DE,DT,MB,MR,MS)
		CDFO	07	Rod and Reel
		CDFW	03	Sport
		NMFS	S1_N	Marine Sport
		ODFW	11	Ocean Sport
		WDFW	95	Marine Sport
41	Sport (Charter)	CDFW	01	Sport - Charter

		WDFW	95	Marine Sport
42	Sport (Private)	CDFW	02	Sport - Skiff
		WDFW	95	Marine Sport
43	Sport (Jetty)	WDFW	95	Marine Sport
44	Columbia River Sport	ODFW	12	Columbia River Sport
45	Estuary Sport	ODFW	32	Estuary Sport
		WDFW	95	Marine Sport
46	Freshwater Sport	ADFG	S2_N	Freshwater Sport (FF)
		CDFO	07	Rod and Reel
			47	Freshwater Sport
		ODFW	14	Spring Sport
			26	Deschutes River Sport
			27	Freshwater Sport
			40	Mid-Columbia River Sport
			41	Salmon River Sport
			44	Multnomah Channel Sport
			47	Elk River Sport
			48	Chetco River Sport
			49	Siuslaw River Sport
		USFWS	51	Creel Survey
		WDFW	96	Freshwater Sport
47	Freshwater Sport Snag	WDFW	97	Freshwater Sport Snagging
48	Terminal Sport	ADFG	S3_N	Terminal Sport (TF)
		NMFS (AK)	76	Terminal Sport
49	Other	ADFG	P_N	Personal Use
		CDFO	07	Rod & Reel

'50' Series: Escapement

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
50	Hatchery	ADFG	H_N	Hatchery Returns
			R_N	Rack Returns
		CCT	50	Hatchery Rack
		CDFO	40	Hatchery Rack
		CDFW	50	Hatchery
		NMFS	50	Hatchery Returns
		NPT	50	Escapement
		NWIFC	50	Escapemen
		ODFW	21	ODFW Hatcheries
			22	Other Oregon Hatcheries
			23	Oregon Private hatcheries
		USFWS	50	Hatchery Returns
		WDFW	01	Hatchery
			04	Fish Trap
51	Fish Screens	CDFW	51	Fish Screen
52	Fish Trap (Freshwater)	CCT	52	Fish Trap
		CDFO	42	Trap
		CDFW	52	Fish Trap
		NWIFC	52	Fish Trap
		NMFS	52	Fish Trap
		ODFW	24	Fish Trap
		WDFW	03	Spawning Ground
			04	Fish Trap
53	Wild Broodstock Collection (formerly Gaff)	CDFO	43	Wild Broodstock Collection
		NWIFC	53	Brood Stocking
		QUIL	53	Brood Stocking
		STIL	53	Brood Stocking
		WDFW	02	Wild Broodstock Collection
54	Spawning Ground	ADFG	E_N	Escapement Survey
		CCT	54	Spawning Ground
		CDFO	41	Spawning Ground
		CDFW	54	Spawning Ground

		NMFS	54	Spawning Ground
		NPT	54	Spawning Ground
		NWIFC	54	Spawning Ground
		ODFW	18	Spawning Ground Survey
		QUIL	54	Spawning Ground
		STIL	54	Spawning Ground
		USFWS	54	Spawning Ground
		WDFW	02	Wild Broodstock Collection
			03	Spawning Ground
			04	Fish Trap
55	Treaty Ceremonial	ODFW	16	Ceremonial
		STIL	55	Treaty Drift Gillnet
56	Treaty Subsistence	ADFG	U_N	Subsistence
		ODFW	20	Subsistence
		WDFW	17	Treaty Drift Gillnet
57	Mixed Wild Broodstock and Hatchery Returns	CCT	12	Beach Seine
		CCT	19	Non-Treaty Purse Seine
		CCT	24	Freshwater Net (mixed)
		CCT	50	Hatchery Rack
		CCT	52	Fish Trap
		WDFW	02	Wild Broodstock Collection
59	Other	ODFW	39	Salmon River Combined Escapement

’60’ Series: Test Fisheries

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
60	Test Fishery Troll			
61	Test Fishery Net	CDFO	10	Gillnet
		ODFW	15	Columbia River Test
		WDFW	14	Non-treaty Drift Gillnet
		WDFW	16	Set Gillnet
62	Test Fishery Seine	WDFW	19	Non-treaty Purse Seine

			29	Treaty Purse Seine
63	Test Fishery Trap	WDFW	98	Pound Net Trap
64	Test Fishery Unknown Multiple Gear	ADFG	41_N	Test Fish Run Strength
			42_N	Test Fish Special Study
			43_N	Test Fish Long Term Assessment
		CDFO	10	Gillnet
		ODFW	45	Test Fishery Unknown
65	Dead Fish Survey	CDFO	00	Not Specified
		ODFW	46	Dead Fish Survey (Lower Willamette Spawn)
			65	Dead Fish Survey
69	Other	ODFW	37	Test Fishery Recreational Bay

’70’ Series: Juvenile Sampling

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
70	Juvenile Sampling - Troll (Marine)	NMFS (AK)	05	Juvenile Sampling - Troll
71	Juvenile Sampling - Gillnet (Marine)	NMFS (AK)	04	Juvenile Sampling - Gillnet
72	Juvenile Sampling - Seine (Marine)	NMFS (AK)	12	Juvenile Sampling – Seine
		NMFS (AK)	13	Juvenile Sampling Beach Seine
		NMFS (CR)	0	Out-migrant Sampling - Ocean
		ODFW	19	OSU Experimental Ocean Purse Seine
		WDFW	12	Juvenile Sampling - Seine
73	Juvenile Sampling - Seine (Freshwater)	NMFS (CR)	C	Out-migrant Sampling - Columbia River
			S	Out-migrant Sampling - Snake river
		ODFW	28	Juvenile Sampling – Freshwater
		USFWS	12	Juvenile Sampling - Seine
74	Juvenile Sampling –Trawl (Marine)	NMFS (AK)	74	Juvenile Sampling - Trawl
		USFWS	75	Juvenile Sampling - Trawl

75	Juvenile Sampling - Trawl (Freshwater)	USFWS	75	Juvenile Sampling - Trawl
79	Other	ADFG	J_N	Juvenile
		WDFW	32	Otter Trawl

’80’ Series: High Seas

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
80	Hake Trawl Fishery, At Sea component (CA/OR/WA)	NMFS (AK)	802	At Sea Midwater Trawl Bycatch
		ODFW	34	NMFS High Seas Trawl Bycatch
800	Hake Trawl Fishery, Shoreside component (OR/WA)	NMFS (AK)	800	Shoreside Midwater Trawl Bycatch
802	Limited-Entry Rockfish Trawl (CA/OR/WA)	NMFS (AK)	802	At-Sea Midwater Trawl Bycatch
803	Limited-Entry Non-Hake Groundfish Trawl (CA/OR/WA)	NMFS (AK)	803	At-Sea Bottom Trawl Bycatch
804	Limited-Entry Sablefish Fixed Gear (CA/OR/WA)	NMFS (AK)	804	Sablefish Fixed Gear Bycatch
805	State-Permitted Nearshore Groundfish Fishery (CA/OR)	NMFS (AK)	805	Nearshore Groundfish Fixed Gear Bycatch
			806	Nearshore Groundfish Trawl Bycatch
81	Groundfish Observer (Gulf of Alaska)	NMFS (AK)	801	Trawl Bycatch
			813	Salmon Excluder Device Trawl Bycatch
			814	Food Donation Trawl Bycatch
812	Rockfish Fishery (Gulf of Alaska)	NMFS (AK)	801	Trawl Bycatch
82	Groundfish Observer (Bering Sea/Aleutians)	NMFS (AK)	801	At-Sea Trawl Bycatch
			813	Salmon Excluder Device Trawl Bycatch
			814	Food Donation Trawl Bycatch
83	Foreign Research Vessels	NMFS (AK)	831	Research Gillnet
			832	Research Longline
			833	Research Trawl
			834	Research Squid Driftnet

			835	Research Squid Gillnet
84	Foreign Mothership Vessels	NMFS (AK)	841	Salmon Gillnet
			842	Research Gillnet
85	Ocean Trawl By-Catch	ODFW	30	Ocean Trawl Bycatch
			33	Pacific High Seas
			34	Pacific Hake Bycatch
		WDFW	32	Ocean Trawl
87	Squid Gillnet By-Catch	NMFS (AK)	87	Squid Gillnet Bycatch
88	Juvenile Sampling	NMFS (AK)	74	Juvenile Sampling - Trawl
89	Other	NMFS (AK)	820	At Sea Midwater Groundfish Trawl Bycatch (rsrch)

’90’ Series: Miscellaneous

Fishery	Fishery Name	Agency	Fishery or Gear	Fishery or Gear Name
90	Multiple Gear	ADFG	1_1	Multiple Fisheries Seine
			11_N	Traditional Multiple/Unknown Gear
			12_N	Terminal Area Multiple/Unknown Gear
			1_3	Multiple Fisheries Gillnet
			1_5	Multiple Fisheries Troll
			17_N	Aboriginal Multiple/Unknown Gear
			1_N	Multiple Fisheries
			3_N	Miscellaneous Multiple Fisheries
			4_N	Test Fishery
		CDFO	00	Not Specified
			10	Gillnet
			15	Mixed Net
			30	Troll
			33	Troll – Ice Boat
91	PNP Cost Recovery	ADFG	2_N	Hatchery Miscellaneous
			21_N	PNP Hatchery Cost Recovery
			22_N	PNP Hatchery Carcasses

			23_N	State Hatchery Cost Recovery
			24_N	State Hatchery Carcasses
			27_N	PNP Hatchery Donated
			28_N	State Hatchery Donated
		NMFS	21_N	Hatchery Miscellaneous
92	Columbia River Shad	ODFW	17	Columbia River Shad
93	Set-Line (Sturgeon)	ODFW	31	Columbia River Set Line (Sturgeon)
94	Fish Trap (Marine)	ADFG	11_0	Traditional Trap
			17_0	M.I.C. Trap
95	Confiscated	ADFG	18_1	Confiscated Purse Seine
			18_3	Confiscated Drift Gillnet
			18_4	Confiscated Set Gillnet
			18_5	Confiscated Troll
			18_8	Confiscated Fish Wheel
99	Other	ADFG	31_N	Derby Sale
			33_N	Discarded Catch
			34_N	Oil Spill Victim
			35_N	Education Permit
			36_N	NMFS Foodbank
			37_N	Donated Catch
			O_N	Other
		CDFO	07	Sport

CHAPTER 9

MARK CODING

Mark Codes for Special Cases

0000	No Adclip + No other external marks
0009	No Adclip + Unknown or unspecified other marks
5000	Adclip + No other external marks
5009	Adclip + Unknown or unspecified other marks
9000	Adipose Clip Unknown + No other external marks
9001	Adipose Clip Unknown + Left Ventral
9009	Adipose Clip Unknown + Totally Unknown other external marks
9205	Adipose Clip Unknown + Elastomer Injection Left Eye Red
9nnn	Adipose Clip Unknown but other external marks present (nnn – appropriate 3 digit code indicating other marks)

Non-Adipose Mark Code	Mark Description	Adipose Mark Code	Mark Description
0001	No Adclip + Left Ventral	5001	Adclip + Left Ventral
0002	No Adclip + Right Ventral	5002	Adclip + Right Ventral
		5009	Adclip + Unknown or Unspecified Mark
0050	No Adclip + Left Ventral Right Ventral	5050	Adclip + Left Ventral Right Ventral
0051	No Adclip + Left Ventral Left Pectoral	5051	Adclip + Left Ventral Left Pectoral
0052	No Adclip + Left Ventral Right Pectoral	5052	Adclip + Left Ventral Right Pectoral
0053	No Adclip + Left Ventral Left Maxillary	5053	Adclip + Left Ventral Left Maxillary
0054	No Adclip + Left Ventral Right Ventral Left Maxillary	5054	Adclip + Left Ventral Right Ventral Left Maxillary
0055	No Adclip + Left Ventral Right Ventral Right Maxillary	5055	Adclip + Left Ventral Right Ventral Right Maxillary
0056	No Adclip + Left Ventral Right Maxillary	5056	Adclip + Left Ventral Right Maxillary
0057	No Adclip + Left Ventral Dorsal	5057	Adclip + Left Ventral Dorsal
0058	No Adclip + Left Ventral Anal	5058	Adclip + Left Ventral Anal
0059	No Adclip + Left Ventral Caudal	5059	Adclip + Left Ventral Caudal
0060	No Adclip + Left Ventral Freeze Brand	5060	Adclip + Left Ventral Freeze Brand
0061	No Adclip + Left Ventral + Elastomer Injection Left Eye	5061	Adclip + Left Ventral + Elastomer Injection Left Eye
0070	No Adclip + Right Ventral Left Pectoral	5070	Adclip + Right Ventral Left Pectoral

0071	No Adclip + Right Ventral Right Pectoral	5071	Adclip + Right Ventral Right Pectoral
0072	No Adclip + Right Ventral Left Maxillary	5072	Adclip + Right Ventral Left Maxillary
0073	No Adclip + Right Ventral Right Maxillary	5073	Adclip + Right Ventral Right Maxillary
0074	No Adclip + Right Ventral Dorsal	5074	Adclip + Right Ventral Dorsal
0075	No Adclip + Right Ventral Anal	5075	Adclip + Right Ventral Anal
0076	No Adclip + Right Ventral Caudal	5076	Adclip + Right Ventral Caudal
0077	No Adclip + Right Ventral Freeze Brand	5077	Adclip + Right Ventral Freeze Brand
0090	No Adclip + Left Pectoral	5090	Adclip + Left Pectoral
0091	No Adclip + Left Pectoral Left Maxillary	5091	Adclip + Left Pectoral Left Maxillary
0092	No Adclip + Left Pectoral Right Maxillary	5092	Adclip + Left Pectoral Right Maxillary
0093	No Adclip + Left Pectoral Right Maxillary Anal	5093	Adclip + Left Pectoral Right Maxillary Anal
0094	No Adclip + Left Pectoral Dorsal	5094	Adclip + Left Pectoral Dorsal
0095	No Adclip + Left Pectoral Anal	5095	Adclip + Left Pectoral Anal
0100	No Adclip + Right Pectoral	5100	Adclip + Right Pectoral
0101	No Adclip + Right Pectoral Left Maxillary	5101	Adclip + Right Pectoral Left Maxillary
0102	No Adclip + Right Pectoral Right Maxillary	5102	Adclip + Right Pectoral Right Maxillary
0103	No Adclip + Right Pectoral Right Maxillary Anal	5103	Adclip + Right Pectoral Right Maxillary Anal
0104	No Adclip + Right Pectoral Dorsal	5104	Adclip + Right Pectoral Dorsal
0105	No Adclip + Right Pectoral Anal	5105	Adclip + Right Pectoral Anal
0110	No Adclip + Left Maxillary	5110	Adclip + Left Maxillary
0111	No Adclip + Left Maxillary Right Maxillary	5111	Adclip + Left Maxillary Right Maxillary
0112	No Adclip + Left Maxillary Dorsal	5112	Adclip + Left Maxillary Dorsal
0113	No Adclip + Left Maxillary Anal	5113	Adclip + Left Maxillary Anal
0120	No Adclip + Right Maxillary	5120	Adclip + Right Maxillary
0121	No Adclip + Right Maxillary Dorsal	5121	Adclip + Right Maxillary Dorsal
0122	No Adclip + Right Maxillary Anal	5122	Adclip + Right Maxillary Anal
0130	No Adclip + Dorsal	5130	Adclip + Dorsal
0132	No Adclip + Dorsal + Elastomer Injection Right Eye Green	5132	Adclip + Dorsal + Elastomer Injection Right Eye Green
0140	No Adclip + Anal	5140	Adclip + Anal
0150	No Adclip + Caudal	5150	Adclip + Caudal
0151	No Adclip + Caudal + Elastomer Injection Left Eye Red	5151	Adclip + Caudal + Elastomer Injection Left Eye Red
0152	No Adclip + Caudal + Elastomer Injection Right Eye Red	5152	Adclip + Caudal + Elastomer Injection Right Eye Red
0190	No Adclip + Jet	5190	Adclip + Jet
0200	No Adclip + Visual Implant Alpha-numeric	5200	Adclip + Visual Implant Alpha-numeric
0201	No Adclip + Visual Implant Elastomer Injection	5201	Adclip + Visual Implant Elastomer Injection
0202	No Adclip + Visual Implant Fluorescent Filament	5202	Adclip + Visual Implant Fluorescent Filament
0203	No Adclip + Elastomer Injection Left Eye Blue	5203	Adclip + Elastomer Injection Left Eye Blue
0204	No Adclip + Elastomer Injection Right Eye Blue	5204	Adclip + Elastomer Injection Right Eye Blue
0205	No Adclip + Elastomer Injection Left Eye Red	5205	Adclip + Elastomer Injection Left Eye Red
0206	No Adclip + Elastomer Injection Right Eye Red	5206	Adclip + Elastomer Injection Right Eye Red

0207	No Adclip + Elastomer Injection Left Eye Green	5207	Adclip + Elastomer Injection Left Eye Green
0208	No Adclip + Elastomer Injection Right Eye Green	5208	Adclip + Elastomer Injection Right Eye Green
0209	No Adclip + Elastomer Injection Left Eye Orange	5209	Adclip + Elastomer Injection Left Eye Orange
0210	No Adclip + Elastomer Injection Right Eye Orange	5210	Adclip + Elastomer Injection Right Eye Orange
0211	No Adclip + Jet Left Ventral	5211	Adclip + Jet Left Ventral
0212	No Adclip + Jet Left Pectoral	5212	Adclip + Jet Left Pectoral
0213	No Adclip + Jet Anal	5213	Adclip + Jet Anal
0214	No Adclip + Elastomer Injection Left Eye Yellow	5214	Adclip + Elastomer Injection Left Eye Yellow
0215	No Adclip + Elastomer Injection Right Eye Yellow	5215	Adclip + Elastomer Injection Right Eye Yellow
0216	No Adclip + Elastomer Injection Left Jaw Green	5216	Adclip + Elastomer Injection Left Jaw Green
0218	No Adclip + Elastomer Injection Left Eye Pink	5218	Adclip + Elastomer Injection Left Eye Pink
0219	No Adclip + Elastomer Injection Right Eye Pink	5219	Adclip + Elastomer Injection Right Eye Pink
0300	No Adclip + Freeze Brand	5300	Adclip + Freeze Brand
0350	No Adclip + PIT Tag	5350	Adclip + PIT Tag
		5351	Adclip + Left Ventral + PIT Tag
0400	No Adclip + Floy Tag	5400	Adclip + Floy Tag
0450	Dye	5450	Adclip + Dye
0451	Dye + Otolith		
0500	No Adclip + Otolith	5500	Adclip + Otolith
0501	No Adclip + Otolith + Left Ventral	5501	Adclip + Otolith + Left Ventral
0502	No Adclip + Otolith + Right Ventral	5502	Adclip + Otolith + Right Ventral
0520	No Adclip + Otolith + Right Maxillary	5520	Adclip + Otolith + Right Maxillary
0600	No Adclip + Wire Tag in Area Other Than Snout	5600	Adclip + Wire Tag in Area Other Than Snout

CHAPTER 10

CODING FOR ESCAPEMENT ESTIMATE METHOD

A. Overview

Codes	Method
10-19	Passage Counts
20-29	Live Counts
30-39	Carcass Counts
40-49	Live and Dead Counts Combined
50-59	Redd Counts
60-69	Mark-Recapture Counts
70-79	Electronic Counts
90-99	Miscellaneous

B. Detailed Coding

'10' Series: Passage Counts

Code	Method
10	Total direct count of run passed through weir/trap/ladder
11	Partial direct count of run with extrapolation for unsampled periods
12	Partial direct count of run with no extrapolation for unsampled periods
13	Total count past dam with passage adjustments (e.g. boat locks, fall-backs)
14	Extrapolation from differences in counts between dams (minus other escapement and harvest)

'20' Series: Live Counts (fish on spawning grounds)

Code	Method
20	Counts with extrapolation for entire period (e.g. 'area under the curve' derived from fish days/stream life)
21	Peak count
22	Index area peak count with expansion factors from a baseline year study
23	Index area peak count with expansion factors from another index stream or baseline year

'30' Series: Carcass Counts

Code	Method
30	Cumulative count
31	Peak count
32	Index area peak count with expansion factors from a baseline year study
33	Index area peak count with expansion factors from another index stream

'40' Series: Live and Dead Counts

Code	Method
40	Cumulative count (cumulative carcasses plus live fish from last survey)
41	Peak count
42	Index area peak count with expansion factors from a baseline year study
43	Index area peak count with expansion factors from another index stream

'50' Series: Redd Counts

Code	Method
50	Cumulative redd count for entire area
51	Index area cumulative counts with supplemental area counts
52	Index area cumulative counts with supplemental areas and expansions for unsurveyed areas
53	Counts of visible redds with extrapolation for entire period (e.g. 'area under the curve' derived from total redd days/visible redd life)
54	Counts of visible redds/date with expansion factors from a baseline year study

'60' Series: Mark/Recapture Estimates

Code	Method
60	Lower river marking with upstream recapture
61	Carcass mark/recapture

'70' Series: Electronic Counts

Code	Method
70	Conductivity sensing counter
71	Sonar counter

72	Radar counter
73	Hydroacoustic estimate

'90' Series: Miscellaneous

Code	Method
90	Estimate based on past hatchery/natural escapement rations
91	Estimate based on hatchery/natural ratio from harvest or test fishery
92	Estimate based on estimated harvest rate in a terminal fishery
99	Other (method not described by codes)

CHAPTER 11

GEOGRAPHIC CODING

A. Overview

Domains for Region Code and Basin Code

1	Alaska	AK	within the state of Alaska and jurisdictional waters
2	Yukon River	YR	within the drainage of the Yukon River consisting of the jurisdictions: • Yukon Territory • State of Alaska
3	British Columbia	BC	within the province of British Columbia and jurisdictional waters
4	Washington	WA	within the state of Washington and jurisdictional waters
5	Columbia River	CR	all Columbia River drainages consisting of the jurisdictions: • province of British Columbia (upper tribs and headwaters) • state of Washington (mainstem, tribs, and estuary) • state of Idaho (upper Snake R and tribs) • state of Oregon (mainstem, tribs, and estuary)
6	Oregon	OR	within the state of Oregon and jurisdictional waters
7	California	CA	within the state of California and jurisdictional waters
8	Transboundary Rivers	TR	river systems that cross international boundary between the U.S.A. (Alaska) and Canada

B. Domain/ Region/ Basin Coding

Domain AK: Alaska

Region Code	Region Name	Basin Code	Basin Name
SEAK	Southeastern Alaska	SEAK	Alaska, Southeast (excluding transboundary rivers)
		SENE	Alaska, Southeast; Northeastern quadrant
		SENW	Alaska, Southeast; Northwestern quadrant
		SESE	Alaska, Southeast; Southeastern quadrant
		SESW	Alaska, Southeast; Southwestern quadrant
		SEYA	Alaska, Southeast; Cross Sound to Cape Suckling
		SEAKG	SEAK general basin: unmapped locations (general, combined, or unknown)
NOAK	Northern Alaska	ARC	Arctic Ocean; including rivers and shoreline
		KOTZ	Kotzebue Sound
		KUSK	Kuskokwim River
		NORT	Norton Sound
		NOAKG	NOAK general basin: unmapped locations (general, combined, or unknown)
CEAK	Central Alaska	BRIS	Bristol Bay
		COPR	Copper River
		LCI	Lower Cook Inlet; S of Anchor Bay/Lat 59.779; S shore Kenai Peninsula to Cape Fairfield
		PWS	Prince William Sound
		UCI	Upper Cook Inlet; areas North of Anchor Bay/ Lat 59.779
		CEAKG	CEAK general basin: unmapped locations (general, combined, or unknown)
WEAK	Western Alaska	ALEU	Aleutian Islands; Alaska Peninsula to Kilokak Rocks on South shore
		BERI	Bering Sea
		KODI	Kodiak Island; Alaska Peninsula / Sheilkof strait from Kilokak Rocks to Cook Inlet
		WEAKG	WEAK general basin: unmapped locations (general, combined, or unknown)
AKGN	AK general region	AKGNG	AKGN general basin: unmapped locations (general, combined, or unknown)

Domain YR: Yukon River

Region Code	Region Name	Basin Code	Basin Name
LOYR	Lower Yukon River (mouth to international boundary)	LOYRG	Lower Yukon River; general
UPYR	Upper Yukon River (above the international boundary)	UPYRG	Upper Yukon River; general
YRGN	Yukon General Region	YRGNG	YRGN general basin: unmapped locations (general, combined, or unknown)

Domain TR: Transboundary Rivers

Region Code	Region Name	Basin Code	Basin Name
ALSR	Alsek River	ALSRG	Alsek River; general
CHIL	Chilkat River	CHILG	Chilkat River; general
STUN	Stikine River - Unuk River	STUNG	Stikine River - Unuk River; general
TAWH	Taku River – Whiting River	TAWHG	Taku River – Whiting River; general
TRGN	Transboundary Rivers, general	TRGNG	TRGN general basin: unmapped locations (general, combined, or unknown)

Domain BC: British Columbia

Region Code	Region Name	Basin Code	Basin Name
FRTH	Fraser River – Thompson River	LWFR	Lower Fraser River (below Hope + tributaries)
		UPFR	Upper Fraser River (above Hope + tribs; excluding Thompson R)
		TOMM	Thompson River Mainstem
		TOMF	Thompson River (North & South forks)
		FRTHG	FRTH general basin: unmapped locations (general, combined, or unknown)
NASK	Nass River – Skeena River	SKNA	Skeena River
		NASS	Nass River
		NASKG	NASK general basin: unmapped locations (general, combined, or unknown)
GST	Georgia Strait	GSVI	Georgia Strait – Vancouver Island
		GSMN	Georgia Strait – Mainland North
		GSMS	Georgia Strait – Mainland South
		GSTG	GST general basin: unmapped locations (general, combined, or unknown)
WCVI	Western Vancouver Island	SWVI	SW Vancouver Island
		NWVI	NW Vancouver Island

Region Code	Region Name	Basin Code	Basin Name
		WCVIG	WCVI general basin: unmapped locations (general, combined, or unknown)
JNST	Johnstone Strait	JNSTG	JNST general basin: unmapped locations (general, combined, or unknown)
COBC	Coastal British Columbia	RIVR	Rivers & Smith Inlets
		CCST	Coastal British Columbia; Central
		NCST	Coastal British Columbia; North
		COBCG	COBC general basin: unmapped locations (general, combined, or unknown)
QCI	Queen Charlotte Islands	QCIG	QCIG general basin: unmapped locations (general, combined, or unknown)
TRAN	Transboundary Rivers in Canada	ALSE	Alsek River / BC, Yukon
		CHIL	Chilkat River / BC
		STIK	Stikine River / BC
		TAKU	Taku River / BC
		UNUK	Unuk River / BC
		WHIT	Whiting River / BC
		TRANG	TRAN general basin: unmapped locations (general, combined, or unknown)
BCGN	British Columbia General Region	BCGNG	BCGN general basin: unmapped locations (general, combined, or unknown)

Domain WA: Washington

Region Code	Region Name	Basin Code	Basin Name
GRAY	Grays Harbor	GHLC	Grays Harbor, Lower Chehalis River
		UPCH	Upper Chehalis River
		GRAYG	GRAY general basin: unmapped locations (general, combined, or unknown)
HOOD	Hood Canal	LUDA	Port Ludlow; Dabob Bay; shoreline: Snake Rock – mouth Dosewallips River
		SKDO	Skokomish River, Dosewallips River, Great Bend
		WKIT	Western Kitsap Peninsula
		HOODG	HOOD general basin: unmapped locations (general, combined, or unknown)
JUAN	Strait of Juan De Fuca	ELDU	Elwha River, Dungeness River, Discovery Bay; shoreline: Elwha River delta – Mats Bay
		LYHO	Neah Bay, Hoko River, Lyre River, Coville Creek; shoreline: Flattery Creek – Elwha River
		JUANG	JUAN general basin: unmapped locations (general, combined, or unknown)

Region Code	Region Name	Basin Code	Basin Name
MPS	Mid Puget Sound	DUWA	Duwamish River, Green River; shoreline: West Point / Seattle - Adelaide
		EKPN	Eastern Kitsap Peninsula, North of Narrows; Bainbridge Is, Blake Is, Vashon Is
		LAKW	Lake Washington – greater area; shoreline: Elliot Point – West Point / Seattle
		PUYA	Puyallup River; shoreline: Adelaide – Point Defiance
		MPSG	MPS general basin: unmapped locations (general, combined, or unknown)
NOWA	Northern Washington	NOOK	Nooksack River; Point Roberts; Drayton Harbor; Birch Bay; California Bay
		BESA	Bellingham Bay; Samish River; Padilla Bay; Lummi, Guemes, Cypress, Sinclair Islands
		SJUA	San Juan Islands
		NOWAG	NOWA general basin: unmapped locations (general, combined, or unknown)
NWC	Northern Washington Coast	QEQU	Queets River; Quinault River; shoreline: Kalalock Creek – Oyhut State Park
		QUHO	Sooes River; Quillayute River; Hoh River; shoreline: Flattery Creek – Kalalock Creek
		NWCG	NWC general basin: unmapped locations (general, combined, or unknown)
SKAG	Skagit River	LOSK	Lower Skagit River below Mill Creek; Skagit Bay
		UPSK	Upper Skagit River above Mill Creek
		SKAGG	SKAG general basin: unmapped locations (general, combined, or unknown)
SPS	Southern Puget Sound	CHAM	Chambers Creek; Ketron Island; shoreline: Point Defiance – breakwater at Old Fort Lake
		DES	Deschutes River; Woodland Creek; Budd Inlet; shoreline: Nisqually Head – McLane Creek
		EKPS	Eastern Kitsap Peninsula, south of the Narrows; Squaxin, Anderson, McNeil, Fox Islands
		KENN	Kennedy Creek; Goldsborough Creek; Skookum Creek; Perry Creek
		NISQ	Nisqually River
		SPSG	SPS general basin: unmapped locations (general, combined, or unknown)
NPS	Northern Puget Sound	STIL	Stillaguamish River
		SNOH	Snohomish River; Tulalip Bay; shoreline: McKees Beach – Elliot Point
		WICI	Whidbey Island; Camano Islands
		NPSG	NPS general basin: unmapped locations (general, combined, or unknown)
WILP	Willapa Bay	NASE	Naselle River; Palix River; Bear River
		NOSM	North River; Smith Creek
		WILR	Willapa River
		WILPG	WILP general basin: unmapped locations (general, combined, or unknown)
WAGN	Washington General Region	CWG	Coastal Washington basin: unmapped locations (general, combined, or unknown)
		PSG	Puget Sound basin: unmapped locations (general, combined, or unknown)
		WAGNG	WAGN general basin: unmapped locations (general, combined, or unknown)

Domain CR: Columbia River

Region Code	Region Name	Basin Code	Basin Name
LOCR	Lower Columbia River (mouth to Bonneville Dam)	GREL	Grays River; Elokomin River; Baker Bay; estuary / WA
		COWL	Cowlitz River / WA
		LEWI	Lewis River; Kalama River / WA
		SAWA	Salmon River; Washougal River; Lake River; Hamilton Creek / WA
		WILL	Willamette River; Multnomah Channel; Milton Creek / OR
		YOCL	Youngs Bay; Clatskanie River; Multnomah Channel to estuary / OR
		SAND	Sandy River; Tanner Creek; Sandy River to Bonneville Dam / OR
		LOCRG	LOCR general basin: unmapped locations (general, combined, or unknown)
CECR	Central Columbia River (Bonneville Dam to McNary Dam)	WIND	Wind River; White Salmon River; Major Creek / WA
		KLIC	Klickitat River; includes below John Day Dam / WA
		ROCK	Rock Creek; Glade Creek, Alder Creek; includes below McNary Dam / WA
		HOO	Hood River; Fifteenmile Creek; Eagle Creek / OR
		DESC	Deschutes River; includes below John Day Dam / OR
		JOHN	John Day River; includes above John Day Dam; Willow Creek / OR
		UMAT	Umatilla River; includes above confluence Glade Creek/WA to below McNary Dam / OR
		CECRG	CECR general basin: unmapped locations (general, combined, or unknown)
UPCR	Upper Columbia R (above McNary Dam; excludes Snake River)	MNPR	McNary Dam to Priest Rapids Dam; Walla Walla River / OR, WA
		YAKI	Yakima River / WA
		PRGC	Priest Rapids Dam to Grand Coulee; Lower Crab Creek; Banks Lake / WA
		WECH	Wenatchee River; Lake Chelan / WA
		MEOK	Methow River; Okanogan River / WA
		HEAD	Headwaters above Grand Coulee / WA, BC, ID
		UPCRG	UPCR general basin: unmapped locations (general, combined, or unknown)
SNAK	Snake River	LOSN	Lower Snake River / WA, ID; below conf. Clearwater River; Palouse River; Tucannon River
		CLEA	Clearwater River (only) / ID
		GRIA	Grande Ronde River; Imnaha River; Asotin Creek / OR, WA
		SALM	Salmon River (only) / ID
		UPSN	Headwaters above the Clearwater River; excluding the Salmon R / ID
		SNAKG	SNAK general basin: unmapped locations (general, combined, or unknown)
CRGN	Columbia River General Region	CRGNG	CRGN general basin: unmapped locations (general, combined, or unknown)

Domain OR: Oregon

Region Code	Region Name	Basin Code	Basin Name
NOOR	Northern Oregon Coast	NEHA	Nehalem River; Necanicum River; including shoreline
		TILN	Tillamook Bay; Nestucca R; including shoreline
		SIYA	Salmon River; Siletz River; Yaquina River; including shoreline
		ALSE	Alsea River; Beaver Creek; Yachats River; including shoreline to Cape Perpetua
		SIUS	Siuslaw River; Siltcoos River; Tahkenitch Creek; including shoreline to Cape Perpetua
		NOORG	NOOR general basin: unmapped locations (general, combined, or unknown)
SOOR	Southern Oregon Coast	UMPQ	Umpqua River
		COOS	Coos River; Coos Bay; includes shoreline from South Jetty Umpqua River to Fivemile Point
		COQU	Coquille River; includes shoreline from Fivemile Point to Coquille River
		SIXE	Sixes River; Elk R; Floras Creek; including shoreline
		ROGU	Rogue River
		CHET	Pistol River; Chetco River; Winchuck River
		SOORG	SOOR general basin: unmapped locations (general, combined, or unknown)
ORGN	Oregon General Region	ORGNG	ORGN general basin: unmapped locations (general, combined, or unknown)

Domain CA: California

Region Code	Region Name	Basin Code	Basin Name
NOCA	Northern California Coast	MAEL	Mad River, Eel River, Mattole River; incl. shoreline: from Klamath River estuary to Whale Gulch
		SMIT	Smith River; Incl shoreline: Camel Rock, OR to Klamath River estuary
		NOCAG	NOCA general basin: unmapped locations (general, combined, or unknown)
CECA	Central California Coast	NORU	Noyo River, Russian River; Drakes Bay; incl shoreline: from Whale gulch to Pt. Bonita
		SFBA	San Pablo Bay, San Francisco Bay; incl shoreline: from Golden Gate to Butano Creek
		SAMO	Salinas River, Monterey Bay; incl shoreline: Pescadero Pt. to Oso Flaco Creek
		CECAG	CECA general basin: unmapped locations (general, combined, or unknown)
SOCA	Southern California Coast	SOCAG	SOCA general basin: unmapped locations (general, combined, or unknown)
KLTR	Klamath River – Trinity River	KLAM	Klamath River

Region Code	Region Name	Basin Code	Basin Name
		TRIN	Trinity River
		KLTRG	KLTR general basin: unmapped locations (general, combined, or unknown)
SAFA	Sacramento River	SACR	Sacramento River
		FEA	Feather River
		AMER	American River
		SAFAG	SACR general basin: unmapped locations (general, combined, or unknown)
SJOA	San Joaquin River	SJR	San Joaquin River
		MERC	Merced River
		TUST	Tuolomne River; Stanislaus River
		MOKE	Mokelumne River
		SJOAG	SJOA general basin: unmapped locations (general, combined, or unknown)
CAGN	California General Region	CAGNG	CAGN general basin: unmapped locations (general, combined, or unknown)

Domain IN: Other / International

Region Code	Region Name	Basin Code	Basin Name
JAPN	Japan	HOKK	Hokkaido Island, Japan
		JAPNG	JAPN general basin: unmapped locations (general, combined, or unknown)
CISR	Commonwealth of Independent States / Russia	SAHK	Sahkalin, Russia
		CISRG	CISR general basin: unmapped locations (general, combined, or unknown)
INGN	Other / International General Region	INGNG	INGN general basin: unmapped locations (general, combined, or unknown)

C. EPA Reach Coding (USA Only)

The EPA Reach Number refers to the U.S. Environmental Protection Agency's "reach file," a national data base of surface water features. The full EPA Reach Number is 17 characters in length. It is based on the U.S. Geological Survey's (USGS) nationwide system of 8 digit Hydrologic-Unit Codes (HUC)s and can be used to identify stream reaches. These reaches can identify locations down to the level of stream intervals and coastal shoreline intervals. EPA Reach is provided to facilitate the mapping of Location Codes pertaining to freshwater and shoreline locations. Mapping of most marine locations may not be possible at this time.

To assist with mapping these locations, the following items are available on request from the Mark Center:

Document:	EPA Reach File Manual
Maps:	USGS Hydrologic Unit Maps (by State)
Maps:	EPA River Reach File Hydrologic Segment Plots (by State)

The parts (components) of the EPA Reach Number that are permissible in the EPA Reach field are as follows (**See Figures 1 & 2 below**):

1. Full EPA Reach Number (17 - char)
   If possible, place the entire EPA Reach Number into the EPA Reach field. This will be possible only for certain types of locations that refer to point locations such as hatchery / facilities, or known release locations. Specific values can be obtained by referring to the maps: EPA River Reach File Hydrologic Segment Plots (by State).
2. Hydrologic Unit Code (HUC) portion only (8 - char)
   In many cases it will not be possible to map a CWT Location Code to a 17-character EPA Reach Number. This situation arises when the Location Code refers to an entire river, bay, lake, or other general area. For example, the release location Newaukum R [3F21802 230882 R] encompasses many stream reaches within the EPA Reach-coded HUC: [17100103]. In these cases, the solution is to use only part of the EPA Reach Number in the Reach field—the 8 character HUC. HUC values may be obtained by referring to either of these maps: USGS Hydrologic Unit Maps (by State); EPA River Reach File Hydrologic Segment Plots (by State).
3. Accounting Unit Code portion only (6 - char)
   If the Location Code encompasses more than one HUC, then use the Accounting Unit Code portion of the HUC. Accounting Unit Code values may be obtained by referring to either of these maps: USGS Hydrologic Unit Maps (by State); EPA River Reach File Hydrologic Segment Plots (by State).
4. Sub-region Unit Code portion only (4 - char)
   If the Location Code encompasses more than one Accounting Unit Code, then use the Sub-region Unit Code portion of the Accounting Unit Code. All permissible values are listed here. (for assistance, refer to the either of these maps: USGS Hydrologic Unit Maps (by State); EPA River Reach File Hydrologic Segment Plots (by State).) EPA Reach must contain one of these:

1701	Kootenai / Pend Oreille / Spokane sub-region
1702	Upper Columbia sub-region
1703	Yakima sub-region
1704	Upper Snake sub-region
1705	Middle Snake sub-region
1706	Lower Snake sub-region
1707	Middle Columbia sub-region
1708	Lower Columbia sub-region

1709	Willamette sub-region
1710	Oregon-Washington Coastal sub-region
1711	Puget sub-region
1712	Oregon-Closed Basins sub-region
1801	Klamath-North California Coast sub-region
1802	Sacramento sub-region
1901	Alaska-Southeast sub-region
1902	Alaska-Central sub-region
1903	Alaska-Kuskokwim sub-region
1904	Alaska-Yukon sub-region
1905	Alaska-Northwestern sub-region
1906	Alaska-Arctic sub-region

5. Region Unit Code portion only (2 - char)
   If the Location Code encompasses more than one Sub-region Unit Code, then use the Region Unit Code portion of the Sub-region Unit Code. All permissible values are listed here. (for assistance, refer to the either of these maps: USGS Hydrologic Unit Maps (by State); EPA River Reach File Hydrologic Segment Plots (by State).) EPA Reach must contain one of these:

17	Pacific Northwest region
18	California region
19	Alaska region

Figure 1: Illustration of EPA Reach Number for mapping of CWT Location Codes into EPA Reach

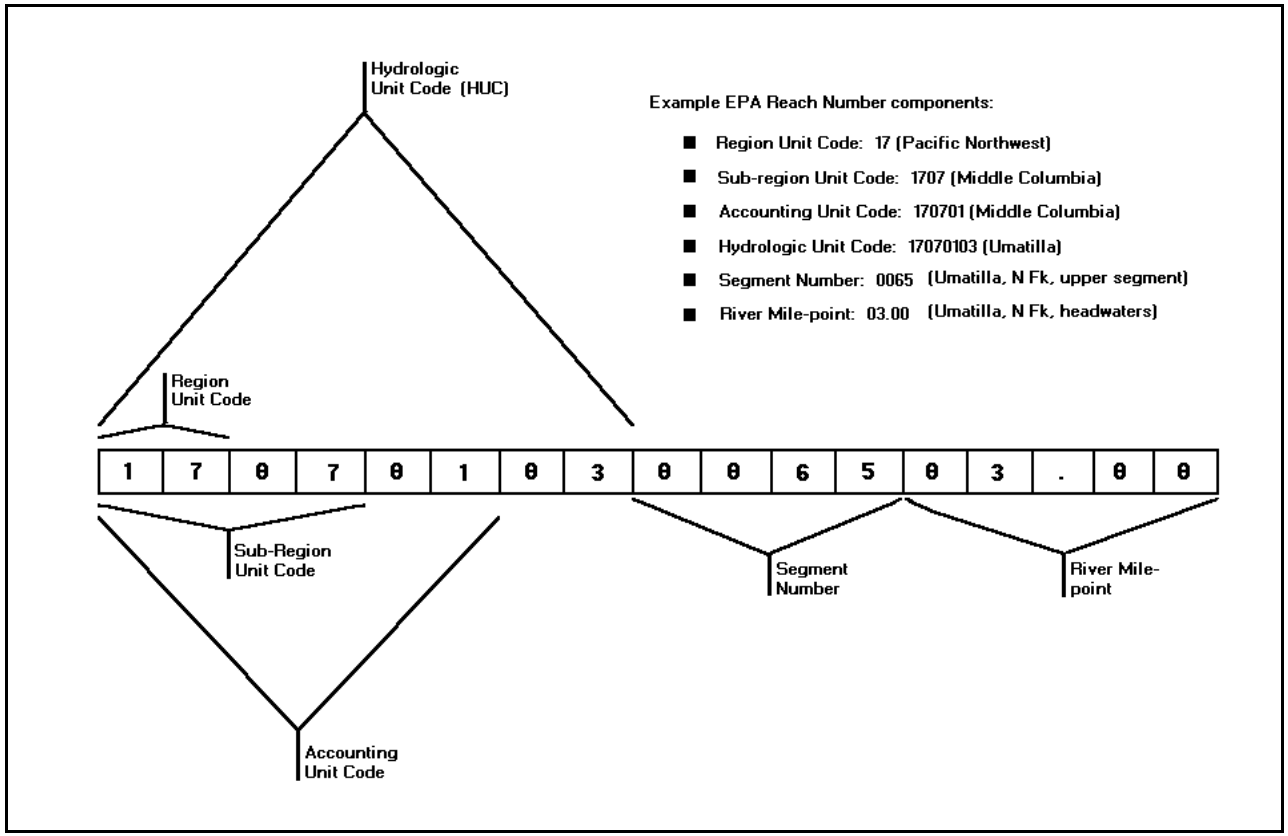
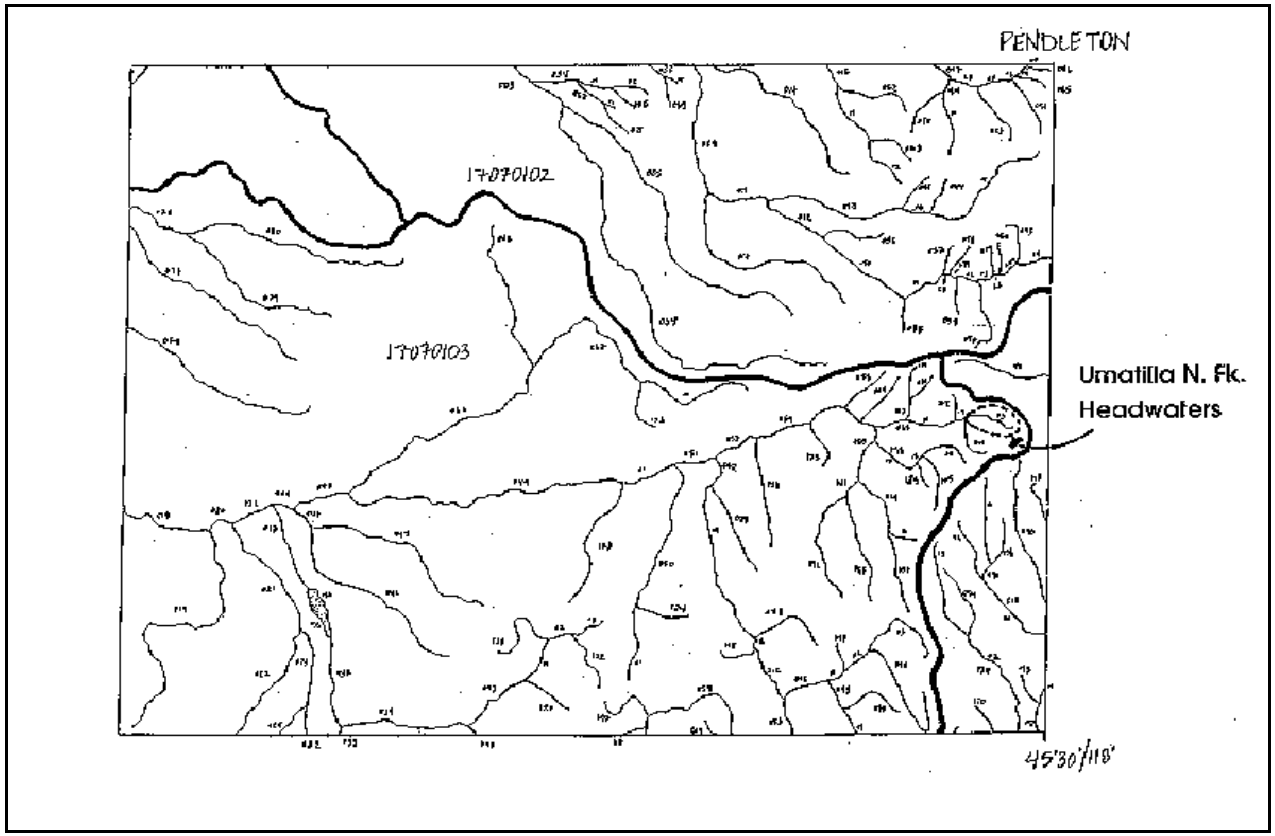


Figure 2: Map of EPA Reach Numbers corresponding to illustration in Figure 1 (i.e. Umatilla, N Fk, Headwaters Reach)



CHAPTER 12

MARK (Adclip) SAMPLING

A. Mark (Adclip) Sampling - General

The method to mark sample to calculate an unbiased mark (adclip) rate will depend upon whether the tag detection method is visual or electronic.

a. When the tag detection method is **visual**, all fish in the sample are examined for an adipose clip. All adipose-clipped fish are presumed to have a cwt and are included in the recovery file. Mark sampling occurs as part of the process of cwt sampling. (See Figure 1 below).

b. When the tag detection method is **electronic**, all fish in the sample are electronically wanded or tubed. All positive-signal ('beep') fish are presumed to have a cwt and are included in the recovery file. Mark sampling can occur as follows:

1) Mark sampling can be **dependent** on the electronic signal. The sample is divided into a 'signal' partition and a 'no-signal' partition. All fish in each partition, all fish in one partition and a random sub-sample of all fish in the other partition, or a random sub-sample of all fish in each partition must be examined for an adipose clip. (see Figure 2 below). Typically, the 'Signal' partition is not sub-sampled since all fish will be processed as cwt recoveries.

   An unbiased mark rate can only be calculated if both partitions are examined for adclips. For example, if the 'signal' partition is examined for adclips but the 'no-signal' partition is not examined for adclips, a mark rate for the SAMPLE cannot be calculated, even though it is possible to calculate a mark rate for the 'signal' partition.

2) Mark sampling can be **independent** of the electronic signal. All fish in the sample or a random sub-sample of all fish in the sample must be examined for an adipose clip (see Figure 3 below).

If a sample is examined for adclips apart from electronic detection or as fish are wanded, the mark sampling is **independent** of the electronic detection. If fish are separated into two partitions as a result of the electronic wand or tube signal, and each partition is examined for adclips, the mark sampling is **dependent** on the electronic signal.

Whether or not mark sampling is dependent or independent of the electronic detection, as in Figures 2 and 3, any subsampling of fish in each partition or in the sample will affect the usefulness of the mark rate and should be examined to ensure the subsampling adequately represents the fish in the partition or sample. The mark rate calculation assumes that the subsampling is random and adequately representative of all fish. For example, if all fish in the 'signal' partition are examined for adclips, but only 2 out of 500 fish in the 'no-signal' partition are examined, it is possible to calculate a mark rate for the SAMPLE using the formula but its usefulness should be questioned since 2 fish out of 500 does not adequately represent the 'no-signal' fish in the sample.

Figure 1: Illustration of Mark Sampling when Tag Detection Method is **Visual**

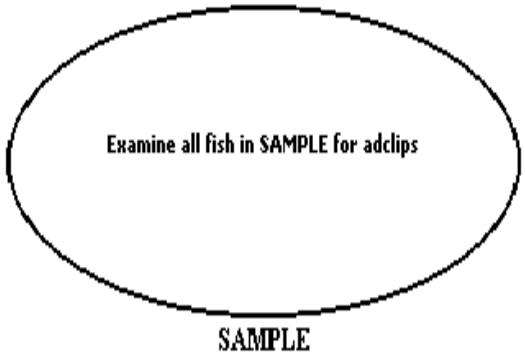


Figure 2: Illustration of Mark Sampling **Dependent** on Electronic Signal, when Tag Detection Method is **Electronic**

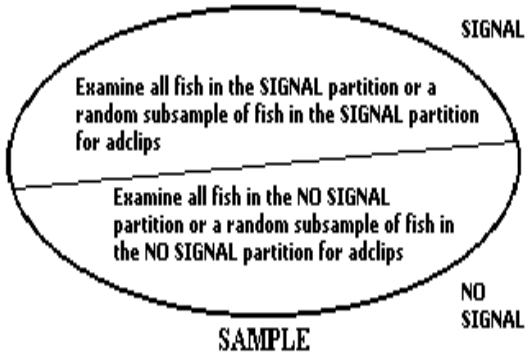
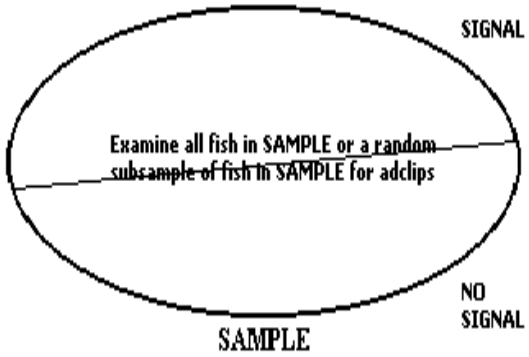


Figure 3: Illustration of Mark Sampling **Independent** of Electronic Signal, when Tag Detection Method is **Electronic**



B. Mark (Adclip) Sampling - PSC Catch/Sample Fields used for Data Exchange

The usage of the PSC Catch Sample fields depends upon the tag detection method and whether mark sampling was dependent upon electronic partitioning or is independent of the electronic signal.

c. When the tag detection method is **visual**, only the 1st set of 'mr_' fields (mr_1st_xxx) should be used. The 2nd set of mr_ fields (mr_2nd_xxx) must be absent. (See Figure 4 below).

d. When the tag detection method is **electronic**, the usage of the 1st set of 'mr_' fields (mr_1st_xxx) and the 2nd set of mr_ fields (mr_2nd_xxx) depends upon whether mark sampling is dependent or independent of the electronic signal.

1) When the tag detection method is **electronic** and mark sampling is **dependent** on the electronic partitioning, both sets of mr_ fields should be used. The first set (mr_1st_xxx) represents the 'Signal' partition. The second set (mr_2nd_xxx) represents the 'No Signal' partition. (See Figure 5,6 and 7 below).

2) When the tag detection method is **electronic** and mark sampling is **independent** of the electronic signal, only the 1st set of mr_ fields (mr_1st_xxx) should be used. The 2nd set of mr_ fields (mr_2nd_xxx) must be absent. (see Figure 8 and 9 below).

Figure 4: Illustration of PSC data fields used when tag detection method is **visual**

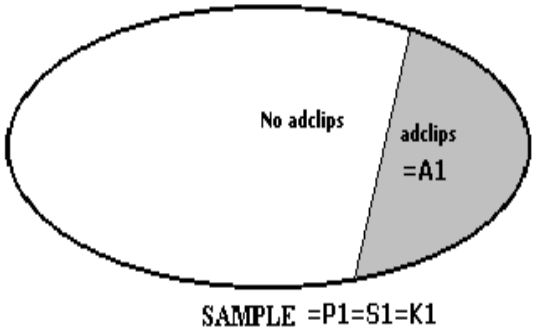
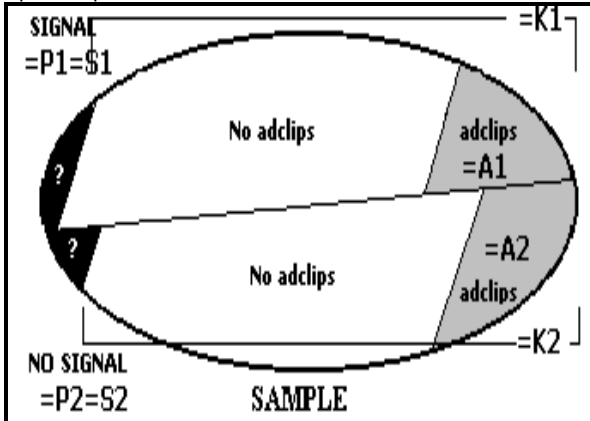
	All fish in the sample are treated as one partition so P1 = number of fish in the sample Sample is not subsampled so S1=number of fish in the sample Since all fish in Sample were visually sampled, all fish in Sample have 'determinable and therefore known' adclip status so K1=number of fish in the sample All recoveries have adclips so A1 = number of fish in the sample with an adclip = total fish in corresponding recovery file
mr_1st_partition_size (P1)	P1 = num_sampled
mr_1st_sample_size (S1)	S1 = num_sampled
mr_1st_sample_known_ad_status (K1)	K1 = num_sampled
mr_1st_sample_obs_adclips (A1)	A1 = number_recovered_decoded + number_recovered_no_cwts + number_recovered_lost_cwts + number_recovered_unreadable + number_recovered_unresolved + number_recovered_not_processed + number_recovered_pseudotags
mark_rate (MR)	MR = A1/K1

Figure 5: Illustration of PSC data fields used when tag detection method is **electronic**, mark sampling is **dependent** on electronic signal, and all fish in each partition are examined for adipose clips.



- P1 = number of fish in the SIGNAL partition of the sample = number of fish in the sample with a 'positive' signal = total fish in corresponding recovery file
- SIGNAL partition is not subsampled so S1 = number of fish in the SIGNAL partition
- P2 = number of fish in the NO SIGNAL partition of the sample = number of fish in the sample with a 'negative' signal = number of fish in the sample - (minus) total fish in corresponding recovery file
- NO SIGNAL partition is not subsampled so S2 = number of fish in the NO SIGNAL partition

mr_1st_partition_size (P1)	P1 = number_recovered_decoded + number_recovered_no_cwts + number_recovered_lost_cwts + number_recovered_unreadable + number_recovered_unresolved + number_recovered_not_processed + number_recovered_pseudotags
mr_1st_sample_size (S1)	S1 = P1
mr_1st_sample_known_ad_status (K1)	K1 = Number of fish in P1 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_1st_sample_obs_adclips (A1)	A1 = Number of fish in P1 which were found to have an adipose clip
mr_2nd_partition_size (P2)	P2 = number_sampled - P1
mr_2nd _sample_size (S2)	S2 = P2
mr_2nd _sample_known_ad_status (K2)	K2 = Number of fish in P2 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_2nd _sample_obs_adclips (A2)	A2 = Number of fish in P2 which were found to have an adipose clip
mark_rate (MR)	MR = [estimated marks in P1 + estimated marks in P2] / (total fish in P1 and P2) = [(P1 * A1/K1) + (P2 * A2/K2)] / (P1 + P2) If K1 or K2 is '0' absent, then mark_rate cannot be calculated and must remain blank.

Figure 6: Illustration of PSC data fields used when tag detection method is **electronic**, mark sampling is **dependent** on electronic signal, all fish in the 'Signal' partition are sampled for adipose clips, and a random sub-sample of all fish in the 'No Signal' partition is examined for adipose clips.

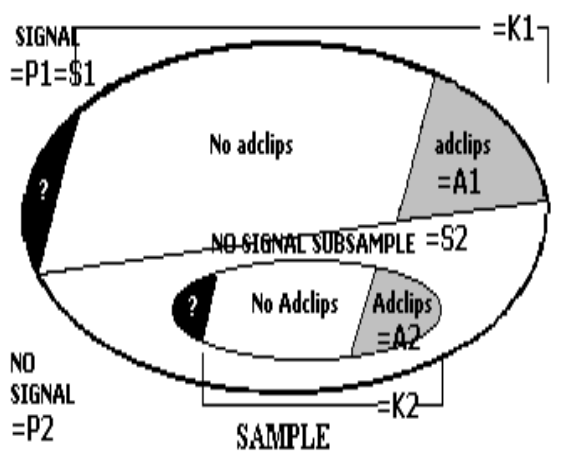
	- P1 = number of fish in the SIGNAL partition of the sample = number of fish in the sample with a 'positive' signal = total fish in corresponding recovery file - SIGNAL partition is not subsampled so S1 = number of fish in the SIGNAL partition - P2 = number of fish in the NO SIGNAL partition of the sample = number of fish in the sample with a 'negative' signal = number of fish in the sample - (minus) total fish in corresponding recovery file - NO SIGNAL partition is subsampled
mr_1st_partition_size (P1)	P1 = number_recovered_decoded + number_recovered_no_cwts + number_recovered_lost_cwts + number_recovered_unreadable + number_recovered_unresolved + number_recovered_not_processed + number_recovered_pseudotags
mr_1st_sample_size (S1)	S1 = P1
mr_1st_sample_known_ad_status (K1)	K1 = Number of fish in P1 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_1st_sample_obs_adclips (A1)	A1 = Number of fish in P1 which were found to have an adipose clip
mr_2nd_partition_size (P2)	P2 = number_sampled - P1
mr_2nd _sample_size (S2)	S2 = Number of fish in P2 which were visually sampled for adipose clips
mr_2nd _sample_known_ad_status (K2)	K2 = Number of fish in S2 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_2nd _sample_obs_adclips (A2)	A2 = Number of fish in S2 which were found to have an adipose clip
mark_rate (MR)	MR = [estimated marks in P1 + estimated marks in P2] / (total fish in P1 and P2) = [(P1 * A1/K1) + (P2 * A2/K2)] / (P1 + P2) If K1 or K2 is '0' or absent, then mark_rate cannot be calculated and must remain blank. The usefulness of mark_rate is dependent upon S2 adequately representing P2

Figure 7: Illustration of PSC data fields used when tag detection method is **electronic**, Mark Sampling is **dependent** on electronic signal, and a random sub-sample of all fish in each partition is examined for adipose clips.

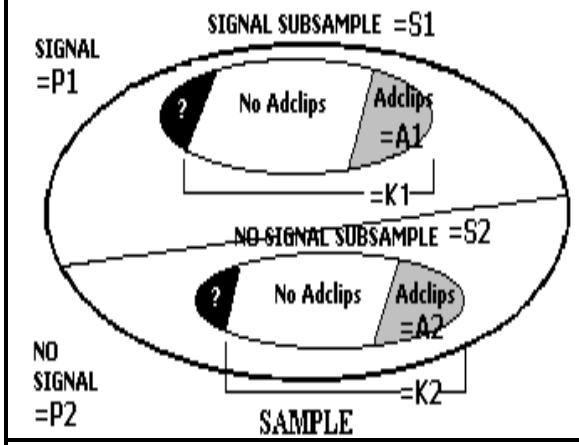
	- P1 = number of fish in the SIGNAL partition of the sample = number of fish in the sample with an adclip = total fish in corresponding recovery file - SIGNAL partition is subsampled - P2 = number of fish in the NO SIGNAL partition of the sample = number of fish in the sample with a 'negative' signal = number of fish in the sample - (minus) total fish in corresponding recovery file - NO SIGNAL partition is subsampled
mr_1st_partition_size (P1)	P1 = number_recovered_decoded + number_recovered_no_cwts + number_recovered_lost_cwts + number_recovered_unreadable + number_recovered_unresolved + number_recovered_not_processed + number_recovered_pseudotags
mr_1st_sample_size (S1)	S1 = Number of fish in P1 which were visually sampled for adipose clips
mr_1st_sample_known_ad_status (K1)	K1 = Number of fish in S1 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_1st_sample_obs_adclips (A1)	A1 = Number of fish in S1 which were found to have an adipose clip
mr_2nd_partition_size (P2)	P2 = number_sampled - P1
mr_2nd _sample_size (S2)	S2 = Number of fish in P2 which were visually sampled for adipose clips
mr_2nd _sample_known_ad_status (K2)	K2 = Number of fish in S2 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_2nd _sample_obs_adclips (A2)	A2 = Number of fish in S2 which were visually sampled for adipose clips which were found to have an adipose clip
mark_rate (MR)	MR = [estimated marks in P1 + estimated marks in P2] / (total fish in P1 and P2) = [(P1 * A1/K1) + (P2 * A2/K2)] / (P1 + P2) Only when both K1 and K2 are '0' or absent, then mark_rate cannot be calculated and must remain blank. The usefulness of mark_rate is dependent upon S1 adequately representing P1, and S2 adequately representing P2

Figure 8: Illustration of PSC data fields used when tag detection method is **electronic**, mark sampling is **independent** of electronic signal, and all fish in Sample are examined for adipose clips.

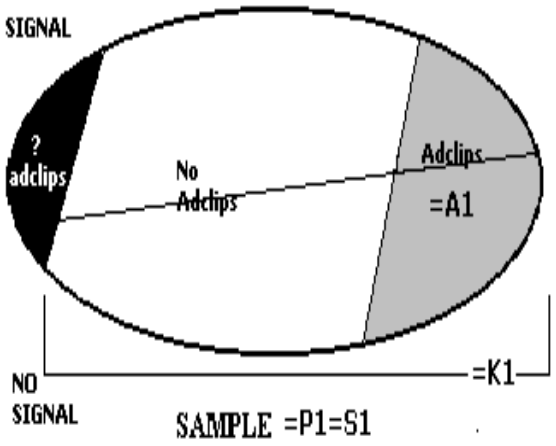
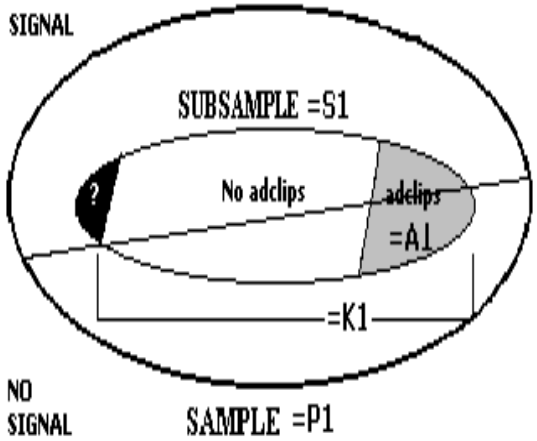
	- All fish in the sample are treated as one partition so P1 = number of fish in the sample - Sample is not subsampled so S1=number of fish in the sample
mr_1st_partition_size (P1)	P1 = number_sampled
mr_1st_sample_size (S1)	S1 = number_sampled
mr_1st_sample_known_ad_status (K1)	K1 = Number of fish in P1 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_1st_sample_obs_adclips (A1)	A1 = Number of fish in P1 which were found to have an adipose clip
mark_rate (MR)	MR = A1/K1

Figure 9: Illustration of PSC data fields used when tag detection method is **electronic**, mark sampling is **independent** of electronic signal, and a subsample of fish in Sample is examined for adipose clips.

	- All fish in the sample are treated as one partition so P1 = number of fish in the sample - Sample is subsampled
mr_1st_partition_size (P1)	P1 = number_sampled
mr_1st_sample_size (S1)	S1 = number of fish in P1 which were visually sampled for adipose clips
mr_1st_sample_known_ad_status (K1)	K1 = Number of fish in S1 which were found to have an adipose clip or no adipose clip (does not include fish which were found to have an 'undeterminable and therefore unknown' adipose clip)
mr_1st_sample_obs_adclips (A1)	A1 = Number of fish in S1 which were found to have an adipose clip
mark_rate (MR)	MR = A1/K1 The usefulness of mark_rate is dependent upon S1 adequately representing P1.

CHAPTER 13

Release Count and Mark Code Fields

A. Version 4.1 Release Count and Mark Code Fields

The intention of the version 4.1 count and mark code fields is to provide a physical view of release counts and marks. Changes to the method of reporting release counts and marks were necessary due to the desequestering of the adipose clip to indicate a coded-wire tagged fish. The changes enable the user to calculate the number of adipose clipped fish in a release group, whether or not they are coded-wire tagged. The changes also permit the reporting of up to two different marks for CWT or Non-CWT (fish that do not contain a CWT) fish in a release.

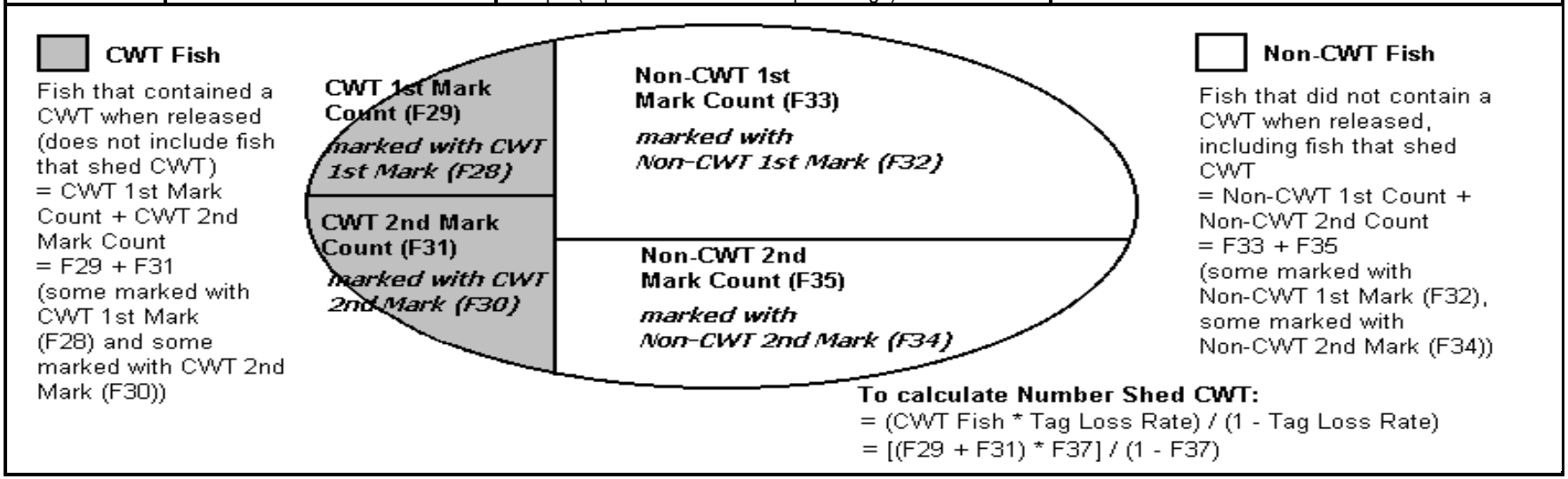
Each Reporting Agency may have a different usage for each release count and mark code field. The agency may determine the particular order of usage of count and mark code fields; therefore no information is implied by the ordering of values in count and mark code fields.

Under version 4.1 specifications, the following fields are used to report release counts and mark codes (Figure 1):

Figure 1: Illustration of Version 4.1 Mark & Count Fields

Field No.	PSC Common Name	Description	
		CWT Release Group	Unassociated Release Group
F28	CWT 1st Mark	Mark(s) on CWT fish corresponding to count value in CWT 1st Mark Count (F29)	not applicable
F29	CWT 1st Mark Count	Number of CWT fish corrected for tag loss and mortality with CWT 1st Mark (F28)	not applicable
F30	CWT 2nd Mark	Mark(s) on CWT fish corresponding to count value in CWT 2nd Mark Count (F31) (only used if CWT tagged fish have 2 different mark codes)	not applicable
F31	CWT 2nd Mark Count	Number of CWT fish corrected for tag loss and mortality with CWT 2nd Mark (F30) (only used if CWT tagged fish have 2 different mark codes)	not applicable
F32	Non-CWT 1st Mark	Mark(s) on non-CWT fish corresponding to count value in Non CWT 1st Mark Count (F33)	Mark(s) on fish corresponding to count value in Non CWT 1st Mark Count (F33)
F33	Non-CWT 1st Mark Count	Number of fish with No CWT with Non-CWT 1st Mark (F32)	Number of fish with Non-CWT 1st Mark (F32)

F34	Non-CWT 2nd Mark	Mark(s) on non-CWT fish corresponding to count value in Non CWT 2nd Mark Count (F35) (only used if fish with No CWT have 2 different mark codes)	Mark(s) on fish corresponding to count value in Non CWT 2nd Mark Count (F35) (only used if fish with No CWT have 2 different mark codes)
F35	Non-CWT 2nd Mark Count	Number of fish with No CWT with Non-CWT 2nd Mark (F34) (only used if fish with No CWT have 2 different mark codes)	Number of fish with Non-CWT 2nd Mark (F34) (only used if fish with No CWT have 2 different mark codes)
F37	Tag Loss Rate	Proportion of fish which shed the CWT from the tag loss sample (expressed as a decimal percentage)	not applicable



The use of the release mark and count fields depends upon whether the release group is reported as a **CWT release group** (Record_Code [Field 1] = 'T' -- release group contains any number of coded wire tagged fish) or a **Unassociated (to CWTs) release group** (Record_Code [Field 11] = 'N' -- release group contains no coded wire tagged fish).

a. For **CWT Release Records**, CWT 1st Mark (F28), CWT 2nd Mark (F30), Non-CWT 1st Mark (F32), and Non-CWT 2nd Mark (F34) are used to report marks. CWT 1st Mark Count (F29), CWT 2nd Mark Count (F31), Non-CWT 1st Mark Count (F33) and Non-CWT 2nd Mark Count (F35) are used to report counts. Tag Loss Rate (F37) is used to report the rate of CWT loss.

If cwt fish all have the same mark, only CWT 1st Mark (F28) and CWT 1st Mark Count (F29) are used. If cwt fish have 2 different marks, CWT 1st Mark (F28), CWT 1st Mark Count (F29), CWT 2nd Mark (F30), and CWT 2nd Mark Count (F31) are used. **No specific information** is implied by using the 1st or 2nd set of CWT mark/count fields, when both sets of fields are used.

If fish that did not contain a CWT when released (including fish that were tagged and shed cwt) all have the same mark, only Non-CWT 1st Mark (F32) and non-CWT 1st Mark Count (F33) are used.

If fish that did not contain a CWT when released have 2 different marks, Non-CWT 1st Mark (F32), Non-CWT 1st Mark Count (F33), Non-CWT 2nd Mark (F34) and Non-CWT 2nd Mark Count (F35) are used. **No specific information** is implied by using the 1st or 2nd set of Non-CWT mark/count fields when both sets of fields are used. (i.e. The number of fish that were tagged and shed CWT may be reported in the 1st set of Non-CWT mark/count fields or the 2nd set of Non-CWT mark/count fields.)

The **number of fish released with a CWT** is the sum of CWT 1st Mark Count (F29) + CWT 2nd Mark Count (F31).
The **number of fish released without a CWT** is the sum of Non-CWT 1st Mark Count (F33) + Non-CWT 2nd Mark Count (F35).
The **number of fish released with an adipose clip** is the sum of the Mark Counts where the related mark begins with a '5'.
The **number of fish released without an adipose clip** is the sum of the Mark Counts where the related Mark begins with a '0'.
The **number of CWT fish released with an adipose clip** is the sum of the CWT Mark Counts where the related CWT Mark begins with a '5'.
The **number of CWT fish released without an adipose clip** is the sum of the CWT Mark Counts where the related CWT Mark begins with a '0'.
The **number of Non-CWT fish released with an adipose clip** is the sum of the Non-CWT Mark Counts where the related CWT Mark begins with a '5'.
The **number of Non-CWT fish released without an adipose clip** is the sum of the Non-CWT Mark Counts where the related CWT Mark begins with a '0'.
The **total number of fish released** can be calculated by summing the Mark Counts (1st Mark Count (F29) + CWT 2nd Mark Count (F31) + Non-CWT 1st Mark Count (F33) + Non-CWT 2nd Mark Count (F35)).

The **number of fish that were tagged and shed CWT** must be calculated from the Tag Loss Rate (F37) and the **number of fish released with a CWT** (CWT 1st Mark Count (F29) + CWT 2nd Mark Count (F31)). The formula is:
= Tag Loss Rate (F37) * (CWT 1st Mark Count (F29) + CWT 2nd Mark Count (F31) / (1 - Tag Loss Rate (F37))

b. For **Unassociated Release Records**, Non-CWT 1st Mark (F32) and Non-CWT 2nd Mark (F34) are used to report the marks. Non-CWT 1st Mark Count and Non-CWT 2nd Mark Count are used to report the counts. Other fields (CWT 1st Mark (F28), CWT 1st Mark Count (F29), CWT 2nd Mark (F30), CWT 2nd Mark Count (F31), Tag Loss Rate (F37)) are required to be blank for unassociated releases.

If all fish have the same mark, only Non-CWT 1st Mark (F32) and Non-CWT 1st Mark Count (F33) are used. If fish have 2 different marks, Non-CWT 1st Mark (F32), Non-CWT 1st Mark Count (F33), Non-CWT 2nd Mark (F34) and Non-CWT 2nd Mark Count (F35) are used. **No specific information** is implied by using the 1st or 2nd set of Non-CWT mark/count fields when both sets of fields are used.

The **number of fish released with an adipose clip** is the sum of the Mark Counts where the related Mark begins with a '5'.
The **number of fish released without an adipose clip** is the sum of the Mark Counts where the related Mark begins with a '0'.
The **total number of fish released** can be calculated by summing the Mark Counts.

B. Version 4.1 Mark and Count Fields - Examples

Table 1: Examples of Version 4.1 Release Mark & Count Fields

#	Example	CWT 1st Mark (F28)	CWT 1st Mark Count (F29)	CWT 2nd Mark (F30)	CWT 2nd Mark Count (F31)	Non-CWT 1st Mark (F32)	Non-CWT 1st Mark Count (F33)	Non-CWT 2nd Mark (F34)	Non-CWT 2nd Mark Count (F35)	Tag Loss Rate (F37)	Calculated Number Shed CWT = (F29 + F30) * F37 / (1 - F37)
1	Typical (pre mass-marking) CWT Release where CWT fish have ADclip, Shed CWT fish have ADclip, and Associated fish are not marked. e.g., 1,000 CWT fish with ADclip, 90,000 associated (Non-CWT) fish with no mark, and 25 Shed CWT (Non-CWT) fish with ADclip.	5000	1,000			0000	90,000	5000	25	0.0244	= 1000 * 0.0244 / (1-.0244) = 25
2	Typical (pre mass-marking) CWT Release as above but 50 of the 1000 CWT fish have bad Adclips.	5000	950	0000	50	0000	90,000	5000	25	0.0244	= (950+50) * 0.0244 / (1-.0244) = 25

3	Double Index Tagging / Mass Marking where all fish have Adclip. e.g., 1,000 CWT fish with ADclip, 90,025 Non-CWT fish with ADclip (25 shed CWT fish + 90,000 associated fish).	5000	1,000			5000	90,025			0.0244	= 1000 * 0.0244 / (1-.0244) = 25
4	Double Index Tagging where no fish have ADclip: e.g., 1,000 CWT fish with no mark, 90,025 Non-CWT fish with no mark (25 shed CWT fish + 90,000 associated fish).	0000	1,000			0000	90,025			0.0244	= 1000 * 0.0244 / (1-.0244) = 25
5	Unassociated Release where all fish have one mark code. e.g., 90,000 LV.	not applicable	not applicable	not applicable	not applicable	0001	90,000			not applicable	not applicable
6	Unassociated Release where fish have two mark codes. e.g., 60,000 LV, 30,000 no mark.	not applicable	not applicable	not applicable	not applicable	0001	60,000	0000	30,000	not applicable	not applicable

CHAPTER 14

Pseudo Tags (Blank or Agency-Only Wire)

Blank wire tags and agency-only wire tags are not coded wire tags (CWTs). They physically look like CWTs, are injected in the same manner as CWTs and have similar magnetic properties enabling them to trigger automatic diversion gates and electronic CWT detectors; However, blank wire and agency-only wire tags do not possess a specific etched binary or decimal code and, upon recovery, cannot be resolved to a specific tag code. Throughout this document, the term "pseudo tag" is used for blank wire tags and agency-only wire tags.

Pseudo tags placed in the head or snout region must be reported due to the desequestering of the adipose clip and the advent of electronic tag detection. Body-placed pseudo tags have not been reported before version 4.1 but may now be reported.

A. How to report Pseudo Tag Releases

All release groups possessing pseudo tags must be tagged entirely with the same type of wire. Mixing of blank wire and agency-only wire, pseudo tags and CWTs, or pseudo tags and non-tagged fish in the same release group is not permitted.

A release group containing pseudo tags is reported as a **non-associated release record** (Figure 1). It is not a CWT release group. All CWT release fields (CWT 1st Mark Count, CWT 1st Mark, CWT 2nd Mark Count, CWT 2nd Mark, Tag Loss Rate, Tag Loss Days, Tag Loss Sample Size, Tag Reused) must be blank.

Figure 1: Version 4.1 Release Fields Used to Report Pseudo Tags

Field No.	PSC Format Name	Description	Required Value
F1	Record Code	Code to indicate the CWT data file classification (class) of the individual record.	'N' - non-associated release record
F7	Tag Code or Release ID	Unique Release ID to identify the release group.	Column 1 must be '!' Columns 2 and 3 must match one of the valid coordinator codes for the Releases Coordinator field
F8	Tag Type	Code to indicate type of tag used for release group	'16' - Pseudo tag, blank wire
F32	Non-CWT 1st Mark	Mark(s) on fish corresponding to count value in Non CWT 1st Mark Count (F33)	
F33	Non-CWT 1st Mark Count	Number of fish with Non-CWT 1st Mark (F32)	
F34	Non-CWT 2nd Mark	Mark(s) on fish corresponding to count value in Non CWT 2nd Mark Count (F35)	(only used if fish have 2 different mark codes)
F35	Non-CWT 2nd Mark Count	Number of fish with Non-CWT 2nd Mark (F34)	(only used if fish have two different mark codes)

Table 1: Examples of Version 4.1 Release Fields Used to Report Pseudo Tags

Example	Record Code (F1)	Tag Code or Release ID (F7)	Tag Type (F8)	Non-CWT 1st Mark (F32)	Non-CWT 1st Mark Count (F33)	Non-CWT 2nd Mark (F34)	Non-CWT 2nd Mark Count (F35)
All fish in release group are tagged with blank wire and have one mark. e.g., 9000 fish tagged with blank wire and LV marked.	N	!ccxxxxxxxxx, where 'cc' is a valid coordinator code and 'xxxxxxxxx' is unique, e.g., !040001, for WDFW blank wire release	16	0001	9,000		
All fish in release group are tagged with agency-only wire and have one mark. e.g., 9000 fish tagged with agency-only wire and LV marked.	N	!ccxxxxxxxxx, e.g., !040002, for WDFW blank wire release	16	0001	9,000		
All fish in release group are tagged with blank wire. Fish have two mark codes. e.g., All fish tagged with blank wire: 6000 LV, 3000 no mark.	N	!ccxxxxxxxxx, e.g., !040003, for WDFW agency-only wire	16	5001	6,000	0000	3,000
All fish in release group are tagged with agency-only wire. Fish have two mark codes. e.g., All fish tagged with blank wire: 6000 LV, 3000 no mark.	N	!ccxxxxxxxxx, e.g., !040004, for WDFW agency-only wire	16	5001	6,000	0000	3,000
Fish in release group are tagged with agency-only wire and blank wire.	This cannot be reported in one release record -- The release group must be separated into two non-associated release records. The relationship can be reported using the Related Group Type (F11) and Related Group ID (F12) fields.						
Fish in release group are tagged with pseudo tags and CWTs	This cannot be reported in one release record -- The release group must be separated into a CWT release record and a non-associated release record. The relationship can be reported using the Related Group Type (F11) and Related Group ID (F12) fields.						
Some fish in release group are tagged with pseudo tags. Other fish are not tagged.	This cannot be reported in one release record -- The release group must be separated into two non-associated release records. The relationship can be reported using the Related Group Type (F11) and Related Group ID (F12) fields.						

B. How to Report Pseudo Tag Recoveries

Pseudo tag recoveries are reported using three **Recovery** fields (Figure 2).

Figure 2: Version 4.1 Recovery Fields Used to Report Pseudo Tags

Field No.	PSC Format Name	Description	Required Value
F28	Tag Status	Code to indicate status of the tag recovery	'9' - Pseudo tag, blank wire
F29	Tag Code	Identifier coded on a tag to denote a release group	'BLANK' - for blank wire tag 'D1BLANK', where 'D1' is the numeric agency wire prefix (i.e. Data 1) - for agency-only wire tag
F30	Tag Type	Code to indicate type of tag wire found in the recovery snout	'16' - Pseudo tag, blank wire

Table 2: Examples of Version 4.1 Recovery Fields Used to Report Pseudo Tags

Example	Tag Status (F28)	Tag Code (F29)	Tag Type (F30)
Blank wire recovery	9	BLANK	16
Agency only wire recovery	9	D1BLANK, where 'D1' is the numeric agency wire prefix (i.e. Data 1) e.g., 63BLANK, for WDFW agency-only wire	16

Pseudo tag recoveries in sampled fisheries are reported using only one **Catch Sample** field (Figure 3).

Figure 3: Version 4.1 Catch Sample Fields Used to Report Pseudo Tags

Field No.	PSC Format Name	Description
F34	Number Recovered Pseudo Tags	Number of pseudo tag recoveries in sampling stratum (# of recoveries in sample with tag_status = '9')

ADDENDUM A

CHANGE LOG

Note: Referenced page numbers are valid only for the version with the corresponding date of the changes or additions listed below because page numbers change among updated versions.

10-16-09 Updated names and descriptions of the Regions and Basins in the California Domain, Chapter 13 – Geographic Coding, pages 74 and 75.

1-4-10 Added ***Required if study_integrity is not 'D'*** to Release Data field #18, Chapter 2 – Release Data, page 11.
Added new ODFW gear codes: Fishery 29, Gear 29; Fishery 46, Gears 44, 48, 49; Fishery 59, Gear 39; Fishery 64, Gear 45; Fishery 69, Gear 37, Chapter 9 – Fishery Coding, pages 52, 53 and 55.

3-1-10 Added clarification language to section B.2.f, "Description", Chapter 1 – Introduction, Definitions and Rules, page 2.
Added new section H. "Methods of Removing Records of Data (for one Reporting Agency)", Chapter 1– Introduction, Definitions and Rules, page 7.
Added sampling agencies AFSC, NWFSC and NWR, Chapter 8, pages 48 and 49.
Added new CDFO Gear codes: Fishery 31, Gears 10, 13, 15; added new NMFS Fishery and Gear codes: Fishery 800, Gear 800, Chapter 9 – Fishery Gear Coding, pages 53 and 57.

3-1-11 Added section D.10. Chapter 1 – Introduction, Definitions and Rules, page 3.
Added new Coordinator Code '16' Chapter 2 – Release Data, page 9.
Added clarification language to Field 41, Estimated Number, Chapter 3 – Recovery Data, page 25.
Added new mark codes, Chapter 11 – Mark coding, page 63.
Edited geographic codings for Alaska, Yukon and Transboundary domains, Chapter 13 – Geographic Coding, pages 70 and 71.

3-1-12 Added new Coordinator values '17' and '18' to Data field #6, Chapter 2 – Release Data, page 9.
Renamed Release Agency Code EBMD to EBMUD, Chapter 8–Agency Coding, page 45
Added Sampling Agency EBMUD; SBT, YCWA, Chapter 8–Agency Coding, page 49
Added new WDFW Gear code: Fishery 24 Gear 29; added new CDFO Gear codes: Fishery 32, Gears 00, 11, 70, Fishery 39, Gears 00, 07, 85; changed Gear definition: Fishery codes 40 & 46, Gear 07; added NMFS Gear code: Fishery 40, Gear S1_N, Chapter 9 – Fishery Gear Coding, pages 53, 54 and 55.

7-1-13 Deleted Agency Code "SSLC – Seward Sealife Center, Chapter 8 – Agency Coding, page 47.
Added new Reporting Agency and Sampling Agency: NMFSNWR – National Marine Fisheries Service NW Region (OR, WA), Chapter 8 – Agency Coding, pages 48 & 49.
Added new Gear Codes: Fishery Code 18, CDFO Gears 30, 31, 32, 33; Fishery 20, CDFO Gear 13; Fishery 24, WDFW Gears 10 and 19; Fishery 39, CDFO Gears 10 and 11; Fishery 53, STIL Gear 53; Fishery 54, STIL Gear 54; Fishery 55, STIL Gear 55; Fishery 90, CDFO Gears 15, 30, 33, Chapter 9 – Fishery Coding.

7-1-14 Added new Releasing Agency Code "SSSC Sitka Sound Science Center (AK)" Chapter 8-Agency Coding, page 47.
Added new Reporting Agency Code COLC Colville Tribe (WA) Chapter 8-Agency Coding, page 48.
Deleted Sampling Agency Code "MIC Metlakatla Indian Community", Chapter 8-Agency Coding, page 49.
Added new Sampling Agency Code "HVT Hoopa Valley Tribe (CA), Chapter 8-Agency Coding, page 49.
Added new Fishery Code 812 Rockfish Fishery (Gulf of Alaska), Chapter 9-Fishery Coding, page 51.

Added new Gear Codes: Fishery 20, Gear Code 15; Fishery 23, Gear Code 38; Fishery 24, Gear Codes 14, 24; Fishery 50, Gear Code H_N; Fishery 54, Gear Code 54; Fishery 81, Gear Code 813 and Fishery 812, Gear Code 801, Fishery 90 Gear Code 3_N, Chapter 9-Fishery Coding, page 51.
Changed 'CDFG' to 'CDFW' and 'California Department of Fish and Game' was changed to 'California Department of Fish and Wildlife' throughout the document.

2-1-17 Added new Gear Codes: Fishery 24, Gear Code 24; Fishery 25, Gear Code 71, 72; Fishery 82, Gear Code 813; Fishery 802, Gear Code 802; new Gear Codes for COLV, Fishery 24, Gear Codes 10, 11, 12, 19, 24; Fishery 50, Gear Code 50; Fishery 52, Gear Code 52; Fishery 54, Gear Code 54; Fishery 57, Gear Codes 19, 24, 50, 50. Added new Release Agency Code: SAUK and new Sampling Agency Code CTUIR. Edited explanation of "mark-rate (MR)" for clarity, last line in Figure 5, Chapter 14.

4-1-17 Edited Release, Reporting, and Sampling agency acronyms and names to conform with agency usage. Chapter 8.

5-1-17 Edited Reporting Tag Type, Chapter 3, Field 30; added File Naming Convention, Chapter 1, Section D; updated rearing type description, Chapter 2, Field 22; added additional length methods, Chapter 3, Field 25; renamed "incomplete mid-year" releases to "preliminary", Chapter 1.B.2.a.1; modified code '7' description and added code '8', Chapter 6, Field 5.a. Changes made by the DSWG, see Version 4.1 Revisions document October 20-21, 2015 Seattle WA.

3-1-19 Added new Agency Codes: AEF, ARF, DCPUD, NVWM, STK, TP. Added new Gear Codes: Fishery 24, Gear Code 10; Fishery Code 39, Gear Code 12; Fishery 63, Gear Code 98; Fishery 64, Gear Code 10. Updated Agency acronyms in Chapter 8 – Fishery Coding. Deleted previous Chapter 5 – Catch & Effort Data and previous Chapter 10 – Catch Effort Gear Codes because the Catch & Effort data is no longer being submitted or used.

11-15-21 Added five new Gear Codes: and new six Mark Codes. Corrected a Chaper 16 refence to Chapter 14 on pages 9 and 11.

06-24-22 Corrected many chapter references: Ch 16 → 14, on p. 11; also Ch 15,16 → 13,14 on pp. 15-17; also Ch 14 → 12 on pp. 34-35; also Ch 13 → 11 on p. 39; also Ch 12 → 10 on p. 32; also Ch 11 → 9 on pp. 15,16,27,32; also Ch 8 → 7 on pp. 18,28,37,41; also Ch 9 → 8 on pp. 20,30; also added new Fishery: '75 Juvenile Sampling - Trawl (freshwater)' & Gear Code: USFWS '75'; also added in Fishery 39, Gear Code: CDFO '13'; also renamed Ch 1, section 'H' to 'I' since H had been duplicated.