TCDS 8801

February 1988

PACIFIC SALMON COMMISSION
TECHNICAL COMMITTEE ON DATA SHARING

REPORT TCDS (88)-1

REPORT OF THE DATA SHARING COMMITTEE TO THE STANDING COMMITTEE ON RESEARCH AND STATISTICS

February 12, 1988

EXECUTIVE SUMMARY

The Data Sharing Committee respectfully submits this report to the Standing Committee on Research and Statistics of the Pacific Salmon Commission. This report summarizes the Committee's recent activities and presents five recommendations for your consideration. The report includes an overview of work performed by the Working Group on Mark Recovery Databases and Working Group on Mark Recovery Statistics.

The Data Sharing Committee recommends:

1. The Standing Committee on Research and Statistics should accept the attached "Synopsis of Pacific Salmon Commission Data Standards for Salmonid Mark, Production, and Recovery" and recommend acceptance and distribution by the Commission.

2. If the Standing Committee on Research and Statistics believes that progress has been too slow, additional personnel resources should be assigned by the Parties to the Working Group on Mark Recovery Statistics. Those new resources could consist of either larger allotments of existing members' time or additional members.

3. The Standing Committee on Research and Statistics should direct the Data Sharing Committee to initiate, as its next major function, a report on the sharing of coastwide escapement data, identifying any problems and possible solutions.

4. The Standing Committee on Research and Statistics should priorize the assignments contained within the Data Sharing Committee's Terms of Reference.

5. The Standing Committee on Research and Statistics should agree to creation of a subcommittee to the Data Sharing Committee, charged with responsibility for ensuring continued standardization of codes and formats. The proposed subcommittee would begin operation upon termination of the Working Group on Mark Recovery Databases.

REPORT OF THE DATA SHARING COMMITTEE TO THE STANDING COMMITTEE ON RESEARCH AND STATISTICS

I. Introduction

In order to meet the terms of reference as stated in the Memorandum of Understanding, the Data Sharing Committee (the Committee) felt that, while work was being carried out in all areas of study mentioned in the Memorandum, for exchange purposes, it would concentrate on mark recovery and related information. The goal of this work was to develop a common data set and a common statistical framework of analyses coastwide.

II. Working Group on Mark Recovery Databases

In order to develop a common data set, the Committee appointed the Working Group on Mark Recovery Databases on February 18, 1986. Membership consisted of staff from ADFG, CDFO, ODFW, PMFC, and WDF. Meetings were often attended by, and input was solicited from many other agencies. Its primary purpose was to study the technical issues pertinent to exchange of data between Canada and the United States within terms of the Salmon Treaty. The Group was to restrict studies to data required for doing analysis using Coded Wire Tag data.

The Data Sharing Committee, with regard to the above, assigned the Working Group several tasks related to this. In general, the Working Group was to:

- determine what data was required for CWT analysis;
- catalog what data was available;
- develop a mechanism for sharing (e.g. via common database, via bilateral exchange); and
- report on when data would be available.

Identifying data requirements for CWT analysis was a very complex task. At a superficial level, the needs are quite straightforward. It requires catch data, sample data, recovery data, and release data for all releases from artificial propogation. Analysis concerns itself with the relationships among observed events within these data sets. To achieve this, there must be a structured, consistent method, common across all of the data sets, used to quantify and qualify the observations. Even at the intra-agency level this is a very difficult task. To develop a functional system suitable for coastwide exchange of data required tremendous effort and co-operation among reporting agencies. Although the treaty is bilateral, and the data exchange will be bilateral, the Working Group approached the matter by analysis of the data collected by the four major reporting agencies, (ADFG, CDFO, WDF, and ODFW). The Group realized the final format would have to service, at minimum, the ability to reflect the fisheries managed and/or reported by these groups.

The product of the Working Group is attached ("Synopsis of PSC Data Standards for Salmonid Mark, Production and Recovery"). In summary, the Group found that approximately 90 fields are necessary to meet these needs, (Chapter I: To report the "what-how-when-where" for CWT analysis of very diverse west coast salmon fisheries). The Group has prepared specifications for each of these elements (Chapter II) and has undertaken test exchanges among the four major agencies, and have written programs to ensure the data meets these specifications (Chapter III).

The Working Group pointed out that many of the elements defined can be used in the exchange of other data and has recommended a standing committee be established to ensure this is done. (e.g. Consistency in codes used for area and time stratification would expedite development, facilitate cross reference among data sets.)

The Group has also prepared a catalog of existing historical data, by agency, from 1976 onward. This, and a proposed schedule of availability of this data in the PSC format, are included as Chapter IV.

The Working Group spent a great deal of time studying possible environments for the data sets, (e.g. should the two Parties share a common computer system, what would be the attributes of an "ideal" sharing system). The Group concluded that sharing of hardware was not tenable. They did conclude that, as this is a two party agreement, one party on each side should be identified as an exchange point for data. This has been done. Canada will send/receive via CDFO in Nanaimo, the United States will do the same via the Regional Mark Processing Centre, (managed by the PMFC), in Portland. The Working Group has developed mechanisms to ensure that the Parties have the same data sets. The Data Sharing Committee recommends that Research and Statistics accept the attached "Synopsis".

III. Working Group on Mark Recovery Statistics

This Working Group addressed the problem of data availability and commonality. In order to ensure that a proper statistical frame work existed in which to use this data the Data Sharing Committee established the Working Group on Mark Recovery Statistics on February 12, 1986. The terms of reference essentially assign the Working Group to develop a complete standard statistical methodology for CWT. It is the Working Group's opinion, however, that no universal methodology to achieve this goal can be identified at present. There is simply too little known about CWT-related statistics. The Working Group's approach to fulfilling its terms of reference is to develop this universal methodology by working on problems pointed out by PSC Technical Committees on a case by case basis and developing a theoretical framework for statistical analysis of CWT data.

There is a perception of some people that the Working Group's progress has been slow, but when the manpower assigned to the Working Group is considered, it becomes clear that this is not the case for the effort involved.

MEMBERS OF THE WORKING GROUP AND % OF TIME ALLOTED WORKING ON THE WORKING GROUP'S TASKS

Canada		U.S.	
J. Schnute	30%	F. DeLibero	20%
T. Mulligan	30%	J. Clark	10%
L. Lapi	15%	P. Lawson	10%
V. Palermo	10%	S. Mathews	10%
T. Hoyt	5%	K. Newman	10%
		K. Henry	2%
Total	.9 person year		.62 person year

When it is considered that each member of the Working Group must spend about 5% of his time for meetings, this amounts to only one person year to work on the Working Group's statistical problems. If progress is to proceed at a faster rate, more manpower will have to be assigned to the Working Group either as a larger allotment of existing members time or as new members added to the Working Group. Progress within the Statistics Working Group is also slowed by the fact that primary publications, such as those developed by group members, require careful peer review. The December 9 report of the Statistics Working Group is attached.

IV. Future Data Sharing Committee Assignments

The Data Sharing Committee has discussed the attainment of its terms of reference (attached) as the completion of its first major task of creating the joint coded-wire tag data set draws near. During the course of deliberations it was noted that measuring spawning escapements is explicitly identified as an important part of three of the nine charges to the Committee in the in the Memorandum of Understanding, B(a), (c), (d), and it is essential to a fourth duty, B(e). It was concluded that the problems to be faced in improving monitoring to achieve improved evaluation of escapement are likely to be more severe than problems in catch reporting or monitoring of commercial fishing effort.

The Committee proposes to develop a report of the existing problems and avenues to solutions concerning the development of a coast-wide escapement data system. Should this report identify escapement as a major priority, the Committee expects to be able to recommend means to improve evaluation of escapements through improved monitoring (key index area streams, standardization of methods, etc.) and coded-wire tag recovery in escapements within a reasonable period of time.

In asking for the advice of the Research and Statistics Committee in the matter of the escapement evaluation report, the Committee is also requesting a comprehensive priorization of its terms of reference. Given limited resources the Committee must have some direction so that

activities can be efficiently scheduled to meet the needs of the Commission.

Another closely related issue emerged during the discussion on evaluation of escapements. Information exchange on activities relevant to treaty implementation may not be occurring in a timely and expeditious manner. Co-ordination of work by multiple technical committees and agencies is extremely important to the standardization of the coast-wide escapement data system, among other data gathering and processing activities. The Committee would like to see standardization of codes and formats between data systems be implemented as soon as possible. This would require establishment of a new subcommittee of Data Sharing. The subcommittee could also deal with coding and format changes to the coded-wire tag data base, along with the other types of information which need to be standard between the parties.

V. Recommendations

The Data Sharing Committee recommends that:

1. The Standing Committee on Research and Statistics should accept the attached "Synopsis of Pacific Salmon Commission Data Standards for Salmonid Mark, Production, and Recovery" and recommend acceptance and distribution by the Commission.

2. If the Standing Committee agrees that progress has been too slow, additional personnel resources should be assigned by the Parties to the Working Group on Mark Recovery Statistics. Those new resources could consist of either larger allotments of existing members' time or additional members.

3. The Standing Committee on Research and Statistics should direct the Data Sharing Committee to initiate, as its next major function, a report on the sharing of coastwide escapement data, identifying any problems and possible solutions.

4. The Standing Committee on Research and Statistics should priorize the assignments contained within the Data Sharing Committee's Terms of Reference.

5. The Standing Committee on Research and Statistics should agree to creation of a subcommittee to the Data Sharing Committee, charged with responsibility for ensuring continued standardization of codes and formats. The proposed subcommittee would begin operation upon termination of the Working Group on Mark Recovery Databases. The sub-committee on codes and formats should be established to deal with coding and format changes to coded-wire tag data standards as well as other, as yet to be established, formats and codes. This committee would meet as needed and report to the Data Sharing Committee.

L. Lapi, Co-Chair
Technical Committee on Data Sharing

D. Bevan, Co-Chair
Technical Committee on Data Sharing

Enclosures

SYNOPSIS OF PACIFIC SALMON COMMISSION

DATA STANDARDS FOR SALMONID

MARK, PRODUCTION, AND RECOVERY

Chapter II

Coding for Fisheries

PSC Format

Version 1.1

Coding for Fisheries
for
Pacific Salmon Commission's CWT Database

VERSION 1.1
1/19/88

I. Overview

Code	Gear
10-19	Troll
20-29	Net
40-49	Sport
50-59	Escapement
60-69	Test Fisheries
70-79	Juvenile Sampling
80-89	High Seas
90-99	Miscellaneous

II. Detailed Coding

A. '10' Series: Troll

Code	Fishery	Agency Fisheries and Codes
10	Ocean Troll (Non-treaty)	ADFG-11 Commercial Troll CDFG-00 Commercial Troll CDFO-30 Troll General ODFW-10 Ocean Troll WDF-41 Troll (Non-treaty)
11	Ocean Troll-Day Boat	CDFO-32 Troll Day Boat WDF-33 Troll Day Boat
12	Ocean Troll-Trip Boat	WDF-34 Troll-Trip Boat
13	Ocean Troll-Freezer Boat	CDFO-31 Troll-Freezer
14	Ocean Troll-Ice Boat	CDFO-33 Troll Ice Boat
15	Treaty Troll	WDF-40 Treaty Troll
16	Terminal Troll	NMFS(AK) -73 Terminal Troll
19	Other	ADFG-01 Other Source Troll Gear

B. '20' Series: Net and Seine

20	Ocean Gillnet (non-treaty)	ADFG-13	Commercial Gillnet
		CDFO-10	Gillnet
21	Columbia River Gillnet	ODFW-13	Columbia River Gillnet
22	Coastal Gillnet	ODNR-16	Coastal Net
		WDF-14	Nontreaty Gillnet (coast)
23	Mixed Net and Seine	WDF-11	Dip Bag Net
		-13	Beach Seine
		-14	Nontreaty Gillnet (inside)
		-16	Set Net
		-17	Treaty Gillnet
		-19	Nontreaty Purse Seine
		-20	Reef Net
		-29	Treaty Purse Seine
		-51	Treaty Trap
		-52	Mixed Net
		CDFO-15	Mixed Net
24	Freshwater Net	CDFO-45	Freshwater Net (mixed)
25	Commercial Seine	ADFG-12	Commercial Seine
		CDFO-20	Seine
26	Terminal Seine	NMFS(AK)-77	Terminal Seine
27	Freshwater Seine	ODFW-34	River Seine (non-Columbia)
28	Other Net	ADFG-04	Other Source Gillnet
29	Other Seine	ADFG-02	Other Source Seine

C. '40' Series: Sport

40	Ocean Sport	ADFG-20	Sport
		CDFG-03	Sport
		CDFO-07	Sport
		ODFW-11	Ocean Sport
		WDF-95	Marine Sport
41	Sport (Charter)	CDFG-01	Sport-Charter
		CDFG-08	Sport-Charter
		WDF-31	Sport-Charter
42	Sport (Private)	CDFG-02	Sport-Skiff
		WDF-32	Sport-Kicker Boat
43	Sport (Jetty)	WDF-36	Jetty

44	Columbia River Sport	ODFW-12	Columbia River Sport
45	Estuary Sport	ODFW-32	Estuary Sport
46	Freshwater Sport	CDFO-47	Freshwater Sport
		ODFW-14	Spring Sport
		ODFW-26	Deschutes River Sport
		ODFW-27	Freshwater Sport
		WDF-51	Freshwater Sport
		USFWS-51	Creel Survey
47	Frehwater Sport Snag	WDF-59	Freshwater Sport Snagging
48	Terminal Sport	NMFS(AK) -76	Terminal Sport
49	Other		

D. '50' Series: Escapement

50	Hatchery	ADFG-40	Rack Returns
		CDFO-40	Hatchery Rack
		NMFS(AK)-50	Hatchery Returns
		ODFW-21	ODFW Hatcheries
		ODFW-22	Other Oregon Hatcheries
		ODFW-23	Oregon Private Hatcheries
		USFWS-50	Hatchery Returns
		WDF-50	Hatchery
52	Fish Trap (Freshwater)	ADFG-04	Other Source Trap Gear
		CDFO-42	Trap
		NMFS(AK) -52	Fish Trap
		ODFW-24	Fish Trap
		WDF-52	Fish Trap
53	Gaff	CDFO-43	Gaff (Wild Fish)
		WDF-53	Gaffed
54	Spawning Ground	ADFG-40	Escapement Survey
		CDFO-41	Spawning Ground
		NMFS(AK) -54	Spawning Ground
		ODFW-18	Spawning Ground Survey
		WDF-54	Spawning Ground
55	Treaty Ceremonial	ODFW-16	Ceremonial
56	Treaty Subsistence	ADFG-50	Subsistence
		ODFW-20	Subsistence
59	Other		

E. '60' Series: Test Fisheries:

60	Test Fishery Troll	ADFG-61	Test Fishery Troll
61	Test Fishery Net	ADFG-63 ODFW-15	Test Fishery Gillnet Columbia River Test
62	Test Fishery Seine	ADFG-62	Test Fishery Seine
63	Test Fishery Trap	ADFG-64	Test Fishery Trap
64	Test Fishery Unknown Multiple Gear	ADFG-60	Test Fishery Unknown Multiple Gear
69	Other		

F. '70' Series: Juvinile Sampling

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 NMFS(CR)- 0 ODFW-19	Juvenile Sampling-Seine Columbia River Outmigrant Sampling-Ocean Sampling OSU Experimental Ocean Purse Seine
73	Juvenile Sampling-Seine (Freshwater)	NMFS(CR)- C NMFS(CR)- S ODFW-28	Outmigrant Sampling-Columbia River Outmigrant Sampling-Snake River Juvenile Sampling-Freshwater
79	Other		

G. '80' Series: High Seas

80	Groundfish Observer (CA/OR/WA)	NMFS(AK)-80	Groundfish Observer (CA/OR/WA)
81	Groundfish Observer (Gulf of Alaska)	NMFS(AK)-81	Groundfish Observer (Gulf of Alaska)
82	Groundfish Observer (Bering Sea/Aleutians)	NMFS(AK)-82	Groundfish Observer (Bering Sea/Aleutians)
83	Foreign Research Vessels	NMFS(AK)-90	Japanese Research Vessels
84	Foreign Mothership Vessels	NMFS(AK)-91	Japanese Mothership Vessel
85	Ocean Trawl By-Catch	ODFW-30	Ocean Trawl By-Catch
		ODFW-33	Pacific High Seas
89	Other		

H. '90' Series: Miscellaneous

90	Multiple Gear	ADFG-00	Other Sources Unknown/Multiple Gear
91	PNP Cost Recovery	ADFG-30	PNP Cost Recovery
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-14	Commercial Trap (Marine)
99	Other		

SYNOPSIS OF PACIFIC SALMON COMMISSION

DATA STANDARDS FOR SALMONID

MARK, PRODUCTION, AND RECOVERY

Chapter III

Validation Criteria

PSC Format

Version 1.1

FIELD	VALIDATION
1.A TAG CODE	MUST have even number of characters. MUST be unique. MUST not exceed 12 characters. MUST match one of these patterns: all numeric all alpha 1 alpha then all numeric all numeric then '*' then 1 numeric 1 alpha then all numeric then '*' then 1 numeric all alpha then '*' then 1 numeric special cases 'XX0500' 'HF1505' 'HF1515'
1.B UNIQUE ID	MUST be unique. First character MUST be '!'. Second and third characters MUST match one of these Tag Coordinator codes: '01' '02' '03' '04' '05' '06' '07' '08' '09' '10' '11' '12' '13' '14' Fourth through twelfth characters may not have embedded blanks (may have trailing blanks).
2. # OF REPLICATES	MUST be exactly two digits in range '01' through '07'.
3. TAG TYPE	MUST be two characters. First character MUST be blank. Second character MUST match one of these: '0' for Standard Binary (1mm) '1' for Half Length (H series) '2' for Half Length (B series) '4' for Xray Binary '5' for Standard Color '6' for Solid Color (## series) '7' for Striped Color ($$ series) '8' for Rare Earth If '4', TAG CODE (1A) MUST be 'XX0500'
4. SPECIES	MUST match one of these: '1' for Chinook '2' for Coho '3' for Steelhead '4' for Sockeye '5' for Chum '6' for Pink

FIELD	VALIDATION
	'7' for Masu '8' for Cutthroat
5. RUN	MUST match one of these: '1' for Spring '2' for Summer '3' for Fall (or Type S coho) '4' for Winter '5' for Hybrid '6' for Landlocked '7' for Late Fall (or Type N coho)
6. BROOD YEAR	MUST be exactly 2 digits. MUST be between 70 and current year.
7. RELEASE AGENCY	MUST match one of these: 'AAI ' 'ADFG' 'AKAF' 'AKI ' 'ANAD' 'BCFW' 'BHSR' 'CDFG' 'CDFO' 'CDFR' 'CEDC' 'CERA' 'CIAA' 'COOP' 'DIPC' 'DOMS' 'ELWA' 'FDC ' 'FWS ' 'H&H ' 'HECK' 'HOH ' 'HSU ' 'HVT ' 'IDFG' 'KETA' 'LUMM' 'MAKA' 'MIC ' 'MUCK' 'NISQ' 'NLNS' 'NMFS' 'NSRA' 'OAF ' 'ODFW' 'OPSR' 'OSU ' 'PNPT' 'PPWR' 'PUYA' 'PWSA' 'QDNR' 'QUIL' 'SIVF' 'SJ ' 'SKAG' 'SKOK' 'SOF ' 'SQAX' 'SSC ' 'SSRA' 'STIL' 'SUQ ' 'TULA' 'UAJ ' 'UW ' 'WDF ' 'WDW ' 'YAKI'
8. RELEASE SITE	MUST not exceed 19 characters. First character MUST match one of these: '1' for Alaska '2' for British Columbia '3' for Washington '4' for Idaho '5' for Oregon '6' for California '7' for High Seas Remaining 18 characters MUST match an entry in table supplied by region named in first character.
9. RELEASE DATES	MUST be in format of a legal date. Last date MUST be >= First date.
10. RELEASE STAGE	MUST match one of these: 'A' for adult

IELD	VALIDATION
	'E' for emergent fry 'F' for fed fry 'G' for fingerling 'P' for pre-smolt 'S' for smolt
1. REARING TYPE	MUST match one of these: 'H' for hatchery 'M' for mixed 'W' for wild If 'W' then HATCHERY(21) MUST be blank.
12. TYPE OF RELEASE	MUST match one of these: 'E' for experimental 'P' for production 'B' for both experimental and production 'I' for index 'K' for PSC key stream 'O' for Other
13. # TAGGED	MUST be numeric, blank or zero filled, right justified in a field of 8.
14. # AD ONLY MARKS	MUST be numeric, blank or zero filled, right justified in a field of 5.
15. # UNMARKED	MUST be numeric, blank or zero filled, right justified in a field of 9.
16. COUNTING METHOD	MUST match one of these: 'B' for book estimates 'C' for actual physical counts 'P' for Petersen estimates 'W' for weight derived estimates
17. TAG LOSS DAYS	MUST be numeric, blank or zero filled, right justified in a field of 3.
18. WEIGHT	MUST be numeric, blank or zero filled, right justified in a field of 6.
19. LENGTH	MUST be numeric, blank or zero filled, right justified in a field of 6.
20. TAG COORDINATOR	MUST match one of these: '01' for ADFG Southeast '02' for NMFS Alaska

FIELD	VALIDATION
	in a field of 3. The one value MUST be on every record on the tape. MUST not be blank.
25. COMMENTS	MUST not exceed 80 characters.

MEDIUM REQUIREMENTS:

9-track magnetic tape
1600-BPI
ASCII
unlabeled
blocked 8140 (37 records of 220 bytes per block)

NOTES: Unless explicitly stated otherwise, any field may be composed entirely of blanks signifying 'Unknown' or 'Not Applicable'.

Any field which cannot be filled because the format or code structure is incapable of conveying an appropriate value is to be filled with a string of commercial 'at' signs (@).

For this document a "numeric" field is composed only of digits (no signs, decimal points, embedded blanks).

FIELD	VALIDATION
1. AGENCY	MUST match one of these: 'ADFG' 'CDFG' 'CDFO' 'FWS ' 'IDFG' 'NIFC' 'NMFS' 'ODFW' 'QDNR' 'WDF ' 'WDW ' The one code MUST be on every record on the tape.
2. ITEM ID	MUST be unique within the tape file. MUST not be blank.
3. DATE OF RECOVERY	Characters 1 and 2 MUST be numeric in the range '70' through the last 2 digits of the current year. Characters 3 and 4 MUST be numeric, zero filled, in the range '01' through '12'. Characters 5 and 6 MUST be numeric, zero filled, in the range '01' through the last day of the month referenced by characters 3 and 4. The YYMMDD date defined in this field MUST be less than or equal to today.
4. NATURE OF DATE	MUST match one of these: 'R' for reported date 'C' for calculated date
5. PERIOD TYPE	MUST match one of these: '1' for escapement period '2' for biweekly '3' for semi-monthly '4' for statistical months '5' for calendar months '6' for stat weeks beginning Monday '7' for weeks beginning Sunday '8' for seasonal
6. PERIOD NUMBER	MUST be numeric, zero filled, right justified in a field of 2. For the PERIOD TYPE (5) shown, this field MUST be within the listed range: TYPE RANGE 1 01 only 2 01-26 3 01-24 4 01-12 5 01-12 6 01-54

FIELD	VALIDATION
	7 01-54 8 01-04
7. SPECIES	MUST match one of these: '1' for Chinook '2' for Coho '3' for Steelhead '4' for Sockeye '5' for Chum '6' for Pink '7' for Masu '8' for Cutthroat
8. SAMPLE MATURITY	MUST match one of these: '1' for immature '2' for Jacks '3' for adults '4' for mixed
9. SEX	MUST match one of these: 'M' for male 'F' for female
10. WEIGHT	MUST be numeric, blank or zero filled, right justified in a field of 3. MUST not be zero.
11. WEIGHT CODE	MUST match one of these: '1' for round '2' for dressed, head on '3' for dressed, head off
12. WEIGHT TYPE	MUST match one of these: '1' for actual weight '2' for calculated weight
NOTE: Fields 10, 11 and 12 MUST all have values, or MUST all be blank.	
13. LENGTH	MUST be numeric, blank or zero filled, right justified in a field of 4.
14. LENGTH CODE	MUST match one of these: '0' for fork length '1' for mid-eye to fork '2' for mid-eye to caudal peduncle '3' for total length

FIELD	VALIDATION
	'4' for head: eye to operculum '5' for head: tip of snout to operculum
15. LENGTH TYPE	MUST match one of these: '1' for actual length '2' for calculated length
NOTE: Fields 13, 14 and 15 MUST all have values, or MUST all be blank.	
16. TAG CODE	MUST have even number of characters. MUST not exceed 12 characters. MUST match one of these patterns: all numeric all alpha 1 alpha then all numeric all numeric then '*' then 1 numeric 1 alpha then all numeric then '*' then 1 numeric all alpha then '*' then 1 numeric special cases 'XX0500' 'HF1505' 'HF1515' If TAG STATUS (19) is '1' or '7', then TAG CODE (16) MUST not be blank.
17. REPLICATE #	MUST be exactly two digits in range '01' through '07'.
18. TAG TYPE	MUST be two characters. First character MUST be blank. Second character MUST match one of these: '0' for Standard Binary (1mm) '1' for Half Length (H series) '2' for Half Length (B series) '4' for Xray Binary '5' for Standard Color '6' for Solid Color (## series) '7' for Striped Color ($$ series) '8' for Rare Earth If '4' the TAG CODE (16) MUST be 'XX0500'.
19. TAG STATUS	MUST match one of these: '1' for Tag Read OK '2' for No Tag '3' for Tag Lost Before Read '4' for Tag Not Readable '7' for Unresolved Discrepancy '8' for Head Not Processed

FIELD	VALIDATION
	If '1' or '7', the TAG CODE (16) MUST not be blank.
20. SAMPLING SITE	MUST be 1 to 4 characters, blank filled, left justified in a field of 4. MUST match an entry in table supplied by Reporting Agency (field #1).
21. EXPANSION LEVEL	MUST be a single digit between 2 and 6.
22. CATCH AREA	MUST not exceed 19 characters. First character MUST match one of these: '1' for Alaska '2' for British Columbia '3' for Washington '4' for Idaho '5' for Oregon '6' for California '7' for High Seas Remaining 18 characters MUST match an entry in table supplied by region named in first character.
23. FISHERY CODE	MUST match one of these: '10' '11' '12' '13' '14' '15' '16' '19' '20' '21' '22' '23' '24' '25' '26' '27' '28' '29' '40' '41' '42' '43' '44' '45' '46' '47' '49' '50' '51' '52' '53' '54' '55' '56' '59' '60' '61' '62' '63' '64' '69' '70' '71' '72' '73' '74' '79' '80' '81' '82' '83' '84' '85' '89' '90' '91' '92' '93' '94' '99'
24. ESTIMATED #	MUST be numeric, blank or zero filled, right justified in a field of 5.
25. SAMPLE TYPE	MUST match one of these: '1' '2' '3' '4' '5' '6'

FIELD	VALIDATION
	MUST not be blank.
26. RECORD TYPE	MUST be '2'.
27. GEAR CODE	MUST be numeric, zero filled, right justified in a field of 2.
28. FORMAT VERSION	MUST be numeric, zero filled, right justified in a field of 3. The one value MUST be on every record on the tape. MUST not be blank.

MEDIUM REQUIREMENTS:
9-track magnetic tape
1600-BPI
ASCII
unlabeled
blocked 8190 (90 records of 91 bytes per block)

NOTES: Unless explicitly stated otherwise, any field may be composed entirely of blanks signifying 'Unknown' or 'Not Applicable'.

Any field which cannot be filled because the format or code structure is incapable of conveying an appropriate value is to be filled with a string of commercial 'at' signs (@).

For this document a "numeric" field is composed only of digits (no signs, decimal points, embedded blanks).

FIELD	VALIDATION
1. AGENCY	MUST match one of these: 'ADFG' 'CDFG' 'CDFO' 'FWS ' 'IDFG' 'NIFC' 'NMFS' 'ODFW' 'QDNR' 'WDF ' 'WDW ' The one code MUST be on every record on the tape.
2. RECORD TYPE	MUST be '1'.
3. CATCH YEAR	MUST be numeric in the range '70' through the last 2 digits of the current year.
4. STATUS OF RECORD	MUST match one of these: 'P' for preliminary 'F' for final
5. DATE OF FILE	Characters 1 and 2 MUST be numeric in the range '70' through the last 2 digits of the current year. Characters 3 and 4 MUST be numeric, zero filled, in the range '01' through '12'. Characters 5 and 6 MUST be numeric, zero filled, in the range '01' through the last day of the month referenced by characters 3 and 4. The YYMMDD date defined in this field MUST be less than or equal to today.
6. SPECIES	MUST match one of these: '1' for Chinook '2' for Coho '3' for Steelhead '4' for Sockeye '5' for Chum '6' for Pink '7' for Masu '8' for Cutthroat
7. SAMPLE MATURITY	MUST match one of these: '1' for immature '2' for jacks '3' for adults '4' for mixed
8. PERIOD TYPE	MUST match one of these: '1' for escapement period '2' for biweekly

FIELD	VALIDATION

'3' for semi-monthly
'4' for statistical months
'5' for calendar months
'6' for stat weeks beginning Monday
'7' for weeks beginning Sunday
'8' for seasonal

9. PERIOD NUMBER

MUST be numeric, zero filled, right justified in a field of 2.
For the PERIOD TYPE (8) shown, this field MUST be within the listed range:

TYPE	RANGE
1	01 only
2	01-26
3	01-24
4	01-12
5	01-12
6	01-54
7	01-54
8	01-04

10. PERIOD RANGE

MUST be numeric, zero filled.
Characters 1 and 2 MUST represent a valid PERIOD NUMBER (9).
Characters 3 and 4 MUST represent a valid PERIOD NUMBER (9).
The value in bytes 1-2 MUST be less than the value in bytes 3-4.

11. FISHERY CODE

MUST match one of these:

'10'	'11'	'12'	'13'	'14'
'15'	'16'	'19'	'20'	'21'
'22'	'23'	'24'	'25'	'26'
'27'	'28'	'29'	'40'	'41'
'42'	'43'	'44'	'45'	'46'
'47'	'49'	'50'	'51'	'52'
'53'	'54'	'55'	'56'	'59'
'60'	'61'	'62'	'63'	'64'
'69'	'70'	'71'	'72'	'73'
'74'	'79'	'80'	'81'	'82'
'83'	'84'	'85'	'89'	'90'
'91'	'92'	'93'	'94'	'99'

12. CATCH AREA

MUST not exceed 19 characters.
First character MUST match one of these:
'1' for Alaska
'2' for British Columbia

FIELD	VALIDATION
	'3' for Washington '4' for Idaho '5' for Oregon '6' for California '7' for High Seas Remaining 18 characters MUST match an entry in table supplied by region named in first character.
13. SAMPLE TYPE	MUST match one of these: '1' '2' '4' '6' MUST not be blank.
14. NUMBER CAUGHT	MUST be numeric, blank or zero filled, right justified in a field of 8.
15. NUMBER SAMPLED	MUST be numeric, blank or zero filled, right justified in a field of 8.
16. AWARENESS	MUST be numeric, blank or zero filled, right justified in a field of 4.
17. TAGS STATUS 1	MUST be numeric, blank or zero filled, right justified in a field of 5.
18. ESTIMATED #	MUST be numeric, blank or zero filled, right justified in a field of 5.
19. TAGS STATUS 2	MUST be numeric, blank or zero filled, right justified in a field of 4.
20. TAGS STATUS 3	MUST be numeric, blank or zero filled, right justified in a field of 3.
21. TAGS STATUS 4	MUST be numeric, blank or zero filled, right justified in a field of 3.
22. TAGS STATUS 7	MUST be numeric, blank or zero filled, right justified in a field of 3.
23. TAGS STATUS 8	MUST be numeric, blank or zero filled, right justified in a field of 5.
24. M/I SAMPLE SIZE	MUST be numeric, blank or zero filled, right

FIELD	VALIDATION
	Justified in a field of 5.
25. M/I OBSERVED	MUST be numeric, blank or zero filled, right justified in a field of 4.
26. FORMAT VERSION	MUST be numeric, zero filled, right justified in a field of 3. The one value MUST be on every record on the tape. MUST not be blank.
27. EXPANSION LEVEL	MUST be a single digit between '2' and '6'.

MEDIUM REQUIREMENTS:

9-track magnetic tape
1600-BPI
ASCII
unlabeled
blocked 8162 (77 records of 106 bytes per block)

NOTES: Unless explicitly stated otherwise, any field may be composed entirely of blanks signifying 'Unknown' or 'Not Applicable'.

Any field which cannot be filled because the format or code structure is incapable of conveying an appropriate value is to be filled with a string of commercial 'at' signs (@).

For this document a 'numeric' field is composed only of digits (no signs, decimal points, embedded blanks).

FIELD	VALIDATION
1. CODE STRIP	MUST not exceed 19 characters. First character must match one of these: '1' for Alaska '2' for British Columbia '3' for Washington '4' for Idaho '5' for Oregon '6' for California '7' for High Seas
2. RECORD ID	MUST match one of these: '1' for Recovery Area '2' for Catch/Sample Area '3' for Hatchery/Facility '4' for Release Site '5' for Stock MUST not be blank.
3. DESCRIPTION	MUST be blank filled, left justified in a field of 101.
4. DATE OF FILE	Characters 1 and 2 MUST be numeric in the range '70' through the last 2 digits of the current year. Characters 3 and 4 MUST be numeric, zero filled, in the range '01' through '12'. Characters 5 and 6 MUST be numeric, zero filled, in the range '01' through the last day of the month referenced by characters 3 and 4. The YYMMDD date defined in this field MUST be less than or equal to today.
5. FORMAT VERSION	MUST be numeric, zero filled, right justified in a field of 3. The one value MUST be on every record on the tape. MUST not be blank.

MEDIUM REQUIREMENTS:
9-track magnetic tape
1600-BPI
ASCII

FIELD	VALIDATION

unlabeled
blocked 8184 (62 records of 132 bytes per block)

NOTES: Unless explicitly stated otherwise, any field may be composed entirely of blanks signifying 'Unknown' or 'Not Applicable'.

Any field which cannot be filled because the format or code structure is incapable of conveying an appropriate value is to be filled with a string of commercial 'at' signs (@).

For this document a 'numeric' field is composed only of digits (no signs, decimal points, embedded blanks).

SYNOPSIS OF PACIFIC SALMON COMMISSION

DATA STANDARDS FOR SALMONID

MARK, PRODUCTION, AND RECOVERY

Chapter IV

Proposed Timetable for
Availability of Historical
Salmon Data*

PSC Format

* Note: Projected availability dates are subject to change.

Alaska Department of Fish and Game

Release

Type	Years	Date Available
CWT and Associated	1973-1986	January 15/88 *
Unmarked	1973-1986	Not available

Notes

No CWT marking done 1970-77

* Data available now, except 'B' series embedded replicates available 1/89 (6 codes). CWT & Associated account for about 90% of all hatchery salmon releases (95% of all hatchery chinook and coho).

NA: Not available. These data are not currently maintained in computer information systems. An exact date for bringing these up on computer has not been set. This class accounts for approximately 10% of all hatchery fish (5% of hatchery chinook and coho).

Recovery

Type	Years	Date Available
Commercial Net & Troll	80-86	January 15/88
	79	December 1988*
	75-78	Future
	70-74	**
Commercial Trap	81-86	January 15/88
	70-80	**
Sport	80-86	January 15/88
	70-79	**
Escapement (Hatchery)	82-86	January 15/88
	70-81	**
Escapement (Stream)	82-86	January 15/88
	70-81	**
Cost Recovery	82-86	January 15/88
	70-81	**
Test Fisheries	84-86	January 15/88
	70-83	**
Subsistence	84-86	January 15/88
	70-83	**

** No CWT sampling done.

Future: Data may become available at a future date. The process used to collect these is poorly documented. ADF&G is currently studying them to ascertain if it is worthwhile to enter them into the database.

* Data currently being reconstructed on the database. They should be available by 12/88.

Alaska Department of Fish and Game

Catch/Sample

Type	Years	Date Available
Commercial Net & Troll	80-86	January 15/88
	79	December/88
	75-78	Future
	70-74	**
Commercial Trap	81-86	January 15/88
	70-80	**
Sport	80-86	N/A
	70-79	**
Escapement (Hatchery)	82-86	N/A
	70-81	**
Escapement (Stream)	82-86	N/A
	70-81	**
Cost Recovery	82-86	January 15/88
	70-81	**
Test Fisheries	84-86	January 15/88
	70-83	**
Subsistence	84-86	N/A
	70-83	**

* Data are currently being reconstructed on the database. Should be available by 12/88.

** No CWT sampling done.

N/A: Not currently available due to inaccessible catch. Catch figures for these items are derived from a number of sources not currently integrated into the CWT database. Some of these items are targeted for inclusion, though no fixed date has been set.

Future: Data may become available at a future date. The process used to collect these is poorly documented. ADF&G is currently studying them to ascertain if it is worthwhile to enter them into the database.

Canada Department of Fisheries and Oceans

Release

Type	Years	Date Available
CWT & Associated (90% total fish released)	1970-1987	February 12, 1988
Unmarked 3%	1970-1987	February 12, 1988
remaining 7%	1970-1987	December 31, 1988

Recovery & Catch/Sample

Type	Years	Date Available
Commercial	1973-1974	No data
	1975-1986	February 12, 1988
Sport	1973-1974	No data
	1975-1979* (recoveries only)	February 12, 1988
	1980-1986	February 12, 1988
Escapement (Hatchery)	1973-1986	February 12, 1988
Escapement (River)	1973-1979	February 12, 1988
	1980-1986**	February 12, 1988

Notes:

* No sport catch estimated until 1980. Recoveries use an awareness of .25

** All data but key stream data is done. When received, will make available.

Washington Department of Fisheries

Release

Type	Years	Date Available
WDF, Coop, University of Washington		
* CWT and Associated	1970-1987	April 1, 1988
* Unmarked	1970-1987	May 1, 1988
Washington USFWS and Tribal		
* All Data	1970-1987	Two weeks after receipt of final data by WDF

Catch, Escapement, Sample and Recovery

Type	Years	Date Available
Washington commercial and sport catch; Escapement to WDF-sampled streams; WDF and joint WDF-tribal sampling and recoveries.	1984	April 1, 1988
	1985	June 1, 1988
	1986	August 1, 1988
	1983	October 1, 1988
	1987	January 15, 1989
	1982	March 1, 1989
	1981	April 1, 1989
	1980	May 1, 1989
	1979	June 1, 1989
	1978	July 1, 1989
	1977	August 1, 1989
	1976	September 1, 1989
	1975	October 1, 1989
	1974	November 1, 1989
	1973	December 1, 1989
	1971-1972	January 1, 1990
Escapement to tribal-sampled streams; tribal escapement sampling and recoveries.	1971-??	Four weeks after receipt of final data by WDF.

Oregon Department of Fish and Wildlife

Release

Type	Years	Date Available
CWT & Associated	1970-1987	February 15, 1988
Unmarked:		
Public	1982-1987	February 15, 1988
Private	1970-1987	February 15, 1988

Recovery and Catch/Sample

Type	Years	Date Available
All fisheries	1977-1983	April 1, 1988
	1984-1986	July 1, 1988
	1987	December 31, 1988

Alaska Department of Fish and Game

Exchange of Yearly Data

RELEASES:

All CWT marked and associated unmarked releases will be available by January 15 for the preceeding year. A schedule for providing non-CWT releases can not be determined unitl a data processing system has been established for this purpose.

RECOVERIES:

PRELIMINARY JANUARY:	95% of CWT recoveries are available.
PRELIMINARY MAY:	100% of CWT recoveries are available.
FINAL:	By July 1 for the preceeding year.

CATCH/SAMPLES:

PRELIMINARY JANUARY:	95% of Catch/Samples are available for the supported fisheries in southeast Alaska. This may drop slightly in future years due to the trend of increased catch in winter fisheries.
PRELIMINARY MAY:	99% of Catch/Samples are available for the supported fisheries in southeast Alaska.
FINAL:	By July 1 for the preceeding year.

Canada Department of Fisheries and Oceans

Exchange of Yearly Data

RELEASES:

All release data marked and unmarked available by January 15, 1988.

RECOVERIES:

PRELIMINARY JANUARY:	80% saltwater recoveries 0% escapement
PRELIMINARY MAY:	95% saltwater recoveries 60% escapement
FINAL:	October for preceeding year.

CATCH/SAMPLES:

PRELIMINARY JANUARY:	90% of Catch 95% of Samples
PRELIMINARY MAY:	95% of Catch 100% of Samples
FINAL:	October for preceeding year.

Washington Department of Fisheries

Exchange of Yearly Data

RELEASES:

All marked and unmarked available by January 31, 1988.

RECOVERIES:

PRELIMINARY JANUARY:	85% of fishery 0% of escapement
PRELIMINARY MAY:	100% of fishery 75% of escapement
FINAL:	October for preceeding year.

CATCH/SAMPLES:

PRELIMINARY JANUARY:	75% of catch 0% of returns
PRELIMINARY MAY:	90% of catch 75% of returns
FINAL:	October for preceeding year.

Oregon Department of Fish and Wildlife

Exchange of Yearly Data

RELEASES:

All marked released by January 15, 1988.
All unmarked releases by June 15, 1988.

RECOVERIES:

PRELIMINARY JANUARY:	90% Ocean and Columbia 70% Escapement
PRELIMINARY MAY:	95% all Fisheries
FINAL:	September for preceeding year.

IDAHO DEPARTMENT OF FISH AND GAME

Provision of Historical PSC-Formatted CWT Data

I. Release Data

A. CWT & Associated: 1976 - 1986: October - November, 1988

B. Unmarked: 1976 - 1986: early 1989

Note: IDFG now computerizing hatchery unmarked releases but project long way from completion.

II. Recovery Data (1973 - 1986)

River Sport
Hatchery calendar year 1989
Spawning Surveys

III. Catch/Sample Data

Same as for Recovery Data

CALIFORNIA DEPARTMENT OF FISH AND GAME

Provision of Historical PSC-Formatted CWT Data

I. Release Data

A. CWT & Associated: 1976 - 1986 period: calendar year 1988
(* Data starts in 1976)

B. Unmarked: 1976 - 1986 period: calendar year 1990
pre-1976 period: unknown, some data lost

Note: CDFG's hatchery system now moving to computerized database; conversion expected to take two years.

II. Recovery Data

A. Ocean Fisheries (Commercial and Sport)

1. current: July, 1988
2. 1978 - 86: July, 1989
3. Pre - 1978: not on computer

B. Inland Fisheries (includes Hatchery, Sport, Spawning Ground)

1. current: July, 1988
2. 1978 - 86 July (?), 1989

III. Catch/Sample Data

Same schedule as for Recovery Data

PACIFIC SALMON COMMISSION

Working Group on Mark-Recovery Statistics

Minutes of Meeting Held December 9, 1987 in Nanaimo, British Columbia

Present:

United States	Canada
F. de Libero, Co-Chair	J. Schnute, Co-Chair
J. Clark	T. Hoyt
R. Hilborn	L. Lapi
P. Lawson	T. Mulligan
S. Mathews	V. Palermo
K. Newman	

Observers
R. Comstock
M. La Belle

I. Terms of Reference

Instructions from the Data Sharing Committee regarding the Statistics W/G's terms of reference (ToR) were discussed and a copy of the relevant minutes (page 2) of the parent committee's meeting of November 15, 1987 were distributed.

It was agreed that members of the second task team identified in Item IV below would bring to our next meeting a brief document on what models are being "used to estimate recovery rates in fisheries and total survival of tagged groups, and contribution to catches of untagged fish associated with tagged groups" (part of first ToR).

II. Future British Columbia Meetings

The consensus was that Vancouver would be an appropriate site for future British Columbia meetings of the Statistics W/G, just as Seattle is a natural site for meetings held in the U.S. This agreement was not meant to preclude meeting at other locations (e.g., Nanaimo) if that would facilitate the agenda.

III. June CWT Workshop

It was proposed and generally agreed that the W/G would plan to participate in a two-day CWT workshop (with a brief business meeting in the morning of the first day) in Seattle during the latter half of June 1988. This will be coordinated by the University of Washington. S. Mathews and R. Hilborn would represent the Statistics W/G on whatever steering committee is formed to plan the workshop. (There is the possibility that the CWT workshop would meet so as to complement the International Symposium and Educational Workshop on Fish-Marking Techniques, June 27-July 1 at the University of Washington.)

IV. Error Estimates in CWT Data Base

Two task teams were formed and will report back to the W/G at its next meeting. The first of these (team members being F. de Libero and V. Palermo) will prepare a bilateral report specifying the variables in the CWT data base that are candidates to have their associated errors also reported and recommendations as to whether or not those errors should be reported, and why.

The second task team will document how their jurisdiction calculates the point estimates which were identified for possible inclusion of associated errors. Members of this task team are J. Clark, R. Comstock, F. de Libero, L. Lapi, and P. Lawson.

V. Progress Reports

J. Clark - Proposed a method to estimate the abundances of stock aggregates with respect to coho salmon populations. The stochastic model is based on a joint p.d.f. quantifying probabilities of recovery numbers of CWTs and distributing the stock aggregates over the catch. The planned future direction of this research is to test alternative models by simulation and subsequently use the most appropriate method to estimate the abundance of Lynn Canal coho index stocks.

R. Hilborn - Intends to develop an improved method of using CWT data to estimate distribution patterns of specific stocks, their stock-specific harvest rates and maturation schedules and, along with these, their respective confidence bounds. In broad terms, the anticipated approach is to do cohort analysis simultaneously with spatial analysis.

S. Mathews - Summarized work using CWT data to attempt to explain why Oregon Production Index (OPI)coho catches have declined in spite of increased OPI coho production. Although results to date do not answer this question, it was argued that for the purposes of estimating overall survival of hatchery-reared coho using CWT data, present analytical models, and tagging and sampling levels were adequate. The primary needs are for better planning and coordinated effort. Mathews estimates that current experimental effort is not sufficiently represented in time or space.

T. Mulligan - Planned analysis of the Canadian team (see handout titled "CWT Bias Estimation Progress Report") is to continue work on estimating bias in CWT estimates. Their conclusions to date are that empirical estimates of variance from replicate tag data are simple and realistic and that estimating bias is more difficult than estimating precision. (Two earlier draft reports, "Description of Problem to Test Accuracy and Precision of MRP Estimators" and "A Method to Compare Expanded Tag Recoveries and Observed Hatchery Escapements", document their efforts to date.) A second short handout ("MR Planning and Experimental Design") by the Canadian team points out that MR experimental designs are difficult or impossible to change to accommodate different funding levels unless cost estimates are included in the data base.

K. Newman - Presented results to date on "A Test Statistic for Comparing Catch Distributions" and also on some simulation work that indicates that replicate tag data may give biased variance estimates ("Positive Bias in the Replicate-Based Variance Estimator?" dated September 3, 1987 and a call to action with similar title, dated December 9, 1987).

P. Lawson - Demonstrated that whichever is the smaller of the two variables, encounter rate or mortality rate, is also the more important in determining total mortlaity due to incidental gear encounters.

(Copies of written progress reports and related material presented at the meeting have been included with the copy of the minutes sent to D. Bevan, F. de Libero, J. Schnute, and the office of the Pacific Salmon Commission in Vancouver, B.C.)

Next Meeting

The next meeting of the W/G on M-R Statistics is scheduled to meet on March 2, 1988 in Vancouver, B.C.

FdL:nb

cc: C. Walters, National Marine Fisheries Service
D. Bevan, Chair, Data Sharing Committee
Attached Name and Address List
PSC, Vancouver, B.C.

NAME AND ADDRESS LIST FOR W/G ON M-R STATISTICS (12/18/87)

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