

**PACIFIC SALMON COMMISSION
TECHNICAL COMMITTEE ON DATA SHARING**

**REPORT ON THE 2000 STATUS
OF PSC DATABASE DEVELOPMENT**

REPORT TCDS (2001)-1

February 2001

ACRONYMS

Agencies	
ADF&G	Alaska Department of Fish and Game
CDFG	California Department of Fish and Game
CDFO	Canada Department of Fisheries and Oceans (Fisheries and Oceans Canada)
CRITFC	Columbia River Inter-Tribal Fish Commission
USFWS	U.S. Fish and Wildlife Service
IDFG	Idaho Department of Fish and Game
MIC	Metlakatla Indian Community - Alaska
NMFS (AK)	National Marine Fisheries Service - Alaska
NMFS (CR)	National Marine Fisheries Service - Columbia R.
NWIFC	Northwest Indian Fisheries Commission
ODFW	Oregon Department of Fish and Wildlife
PSC	Pacific Salmon Commission
PSMFC	Pacific States Marine Fisheries Commission
QDNR	Quinault Department of Natural Resources
WDFW	Washington Department of Fish and Wildlife
Other	
COTC	Coho Technical Committee
CTC	Chinook Technical Committee
CWT	Coded wire tag
DSC	Data Sharing Committee
SFEC	Selective Fisheries Evaluation Committee

Membership – Data Sharing Technical Committee – 2000

U.S.	Canada
Norma Jean Sands (NMFS), co-chair	Susan Bates (CDFO), co-chair
Ken Johnson (PSMFC)	Lia Bijsterveld (CDFO)
Ron Josephson (ADF&G)	Marc Hamer (CDFO)
Mike Matylewich (CRITFC)	Sue Lehmann (CDFO)
Amy Morgan (NWIFC)	
Gary Morishima (QDNR)	
Dick O'Connor (WDFW)	

Forward

This report is intended to present to the Pacific Salmon Commission and the participating agencies the work addressed by the Data Sharing Technical Committee and its working group on Data Standards during the year 2000. It is hoped that readers of this report and users of the databases addressed within will feel free to provide input into solutions of problems and to assist in identifying new areas to be addressed.

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EXECUTIVE SUMMARY

The commitment of Canada and the United States to develop a coast-wide stock assessment and data management system for Pacific salmon is detailed in the 1985 Memorandum of Understanding attached to the Pacific Salmon Treaty. In this memorandum, the Pacific Salmon Commission (PSC) formed the Data Sharing Committee (DSC), placing it under the direction of the Standing Committee on Research and Statistics. The primary functions of the DSC are to facilitate data exchange between Canada and the U.S. by developing, maintaining, and updating, as necessary, data exchange programs, identifying any problem areas that may exist, and developing standard methods of reporting and analyzing salmonid fisheries data of importance for both nations. Current key responsibilities include maintaining and updating the coast-wide coded wire tag (CWT) database exchange format, monitoring the status of exchanged data, developing a coast-wide catch and effort database exchange format, and addressing the new recording needs of mass-marking and selective fishery data.

Major topics under consideration by the Data Sharing Committee and its working group in 2000 were:

- the proposed CWT exchange format Version 4.0,
- the data elements required to support mass-marking and selective fishery analyses,
- the catch and effort exchange specification Version 1.0, and
- the content of a fisheries regulations file.

Recommendations by the Data Sharing Technical Committee include:

- Agencies should continue to work towards exchanging a set of test data in Format Version 4.0 by midyear, 2001.
- Given the recent declines in the number of CWT recoveries for both coho and chinook, the Data Sharing Committee and other PSC technical committees dependent on CWT data for their work (COTC, CTC, SFEC) should monitor the database to ensure that the number of recoveries meets their analytical needs. Any concerns should be shared, and passed to the Commission by the Data Sharing Committee. Where it is possible and practical to correct the problem by increasing tagging rates or sampling rates, such recommendations should be forthcoming from the Commission.
- The Chinook Technical Committee, Coho Technical Committee, and Selective Fisheries Evaluation Committee should assume responsibility for providing tables of specially used tag codes to the data exchange points to help ensure other analysts are making appropriate use of the database.

I. INTRODUCTION

A. COMMITTEE RESPONSIBILITY

The commitment of Canada and the United States to develop a coast-wide stock assessment and data management system for Pacific salmon is detailed in the 1985 Memorandum of Understanding attached to the Pacific Salmon Treaty. In this memorandum, the Pacific Salmon Commission (PSC) formed the Data Sharing Committee (DSC), placing it under the direction of the Standing Committee on Research and Statistics. The primary functions of the DSC are to facilitate data exchange between Canada and the U.S. by developing, maintaining, and updating, as necessary, data exchange programs, identifying any problem areas that may exist, and developing standard methods of reporting and analyzing salmonid fisheries data of importance for both nations. Current key responsibilities include maintaining and updating the coast-wide coded wire tag (CWT) database exchange format, monitoring the status of exchanged data, developing a coast-wide catch and effort database exchange format, and addressing the new recording needs of mass-marking and selective fishery data.

B. COMMITTEE STRUCTURE

The Data Sharing Committee is the only permanent PSC technical committee that is limited in the size of membership; the Memorandum of Understanding limits membership to seven persons for each Party. Due to the specialized talent needed to address some of the committee's tasks, three workgroups were formed. Two of these workgroups have been disbanded in the last year: the Catch Data Exchange Work Group and the Mark-Recovery Statistics Work Group. The former was disbanded because its major task of developing a catch and effort database format has been completed; the latter because it has been inactive since 1993. The Data Standards Working Group is the only remaining work group.

The Data Standards Working Group continues to meet regularly, in order to fulfil its mandate of providing ongoing maintenance of data standards and formats for CWT data exchange between the two Parties. It also works out the details of the technical implementation of exchanging new data as determined by the parent Data Sharing Committee. The Data Sharing Committee has an overview role in monitoring both the content and quality of the exchanged data, ensuring that they continue to meet the needs of the analytical work that supports the Treaty.

C. 2000 MEETINGS AND DISCUSSION TOPICS

Much of the work of the Data Sharing Technical Committee takes place via the US/Canada Web Forum, located at the Pacific States Marine Fishery Commission (PSMFC) web site at <http://www.psmfc.org/>. This forum allows dialogue between members on issues under consideration and reduces the need for and the length of formal meetings of the committee and workgroup. There is currently a separate forum set up for each of the two active groups: the Data Sharing Committee and the Data Standards Working Group.

A formal meeting of the Data Sharing Technical Committee was held November 8, 2000 at Sand Point, Seattle, WA. The co-chairs met earlier in the year with G. Morishima in Seattle, WA on April 18, 2000; they met again with the co-chairs of the Data Standards Working Group in Vancouver, B.C. on January 10, 2001. The Data Standards Working Group met December 13-14, 2000 in Gladstone, Oregon. Major topics of discussion in 2000 were:

- the proposed CWT exchange format Version 4.0,
- the data elements required to support mass-marking and selective fishery analyses,
- the catch and effort exchange specification Version 1.0, and
- the content of a fisheries regulations file.

II. STATUS OF ISSUES IDENTIFIED IN THE 1999 REPORT

A. CWT FORMAT VERSION 4.0

The draft specifications for exchange format Version 4.0 have been posted on the Data Standards Working Group web site at <http://www.psmfc.org/>. Members of the Working Group are expected to review them and provide comments by the end of January, 2001. A pilot exchange of one year's test data was planned to occur during March and April of 2001. However, at the time of this writing it seems unlikely that any of the agencies involved would be able to meet this target, so our recommendation (section IV.A.) pushes the date back to midyear. It should be noted that as work progresses on Version 4.0, the scope and complexity of the task seem to be ever increasing. For example, refer to section III.C. for a discussion of how new sampling protocols and analytical problems are creating requirements for additional data elements to be exchanged and existing data elements to be re-defined.

Status: ongoing

B. CATCH AND EFFORT EXCHANGE

Work in 2000 focussed on a review of the gear coding for catch and effort data, in an attempt to bring it into line with the gear coding used in the CWT exchange data. Some inconsistencies remain which may not be resolvable. A pilot exchange will occur following successful completion of the exchange of Version 4.0 CWT data.

Status: ongoing

C. PUBLICATION OF SPECIAL PURPOSE TAG CODES

The Technical Committees for Chinook, Coho and Selective Fishery Evaluation use specific groups of CWT codes for their analytical work on fishery exploitation rates, survival rates, selective fishery impacts and stock composition. It was decided that these lists of tag codes should be published on the PSMFC web site for widespread access by other researchers. The chairs of the Technical Committees for Chinook, Coho and Selective Fishery Evaluation will assume responsibility for providing initial lists to the web master, and for updating them regularly.

Status: resolved

D. EXCHANGE OF VARIANCE ESTIMATES

The other technical committees expressed little interest in seeing variance estimates attached to recreational catches, hatchery releases or any other data for which such variances can be computed. Consequently, the matter was dropped.

Status: resolved

E. COMPLETENESS OF RELEASE DATA FOR MASS-MARKED GROUPS

No major problems were identified with release data this year, however, the committee will continue to watch for a recurrence of problems seen in 1998 and 1999 related to the inconsistent reporting of mass-marked release groups.

Status: ongoing

F. REPORTING OF DOUBLE INDEX TAGS

The procedures for reporting double index tag groups were clarified by discussion at the Data Standards Working Group, and subsequently incorporated into the Version 3.2 specifications for current data exchange as well as into the proposed Version 4.0 specifications for future data exchange.

Status: resolved

G. CATCH-AND-RELEASE COUNTS (FISHERY ENCOUNTER RATES)

A mechanism for exchanging information related to the release of non-targeted fish, especially during a mark-selective fishery, has not been described. This will be of particular concern to the Selective Fishery Evaluation Committee when mark-selective fisheries are more prevalent than they are currently. The Data Sharing Committee will await direction from the Selective Fishery Evaluation Committee before tackling the issue.

Status: ongoing

H. FISHERIES REGULATIONS FILE

The implementation of a separate exchange file to convey information about fisheries regulations has been delayed until the Version 4.0 specification is fully implemented. In the meantime, fields have been added to the CWT exchange data to flag samples and recoveries from mark-selective fisheries.

Status: ongoing

III. ISSUES OF CONCERN: 2000 AND 2001

A. ADEQUACY OF CURRENT TAGGING AND SAMPLING PROGRAMS

The Data Sharing Committee continues to be concerned by the drastic decline in the number of CWT recoveries over the last few years. While hatchery tagging rates and fishery sampling rates have remained approximately constant, much-reduced fisheries and poorer survivals have meant fewer fish are available to samplers in tag recovery programs. A study should be done to determine whether the numbers of recoveries

currently reported are sufficient to allow for meaningful analyses related to selective fishery evaluation, exploitation, survival, and stock composition.

B. BLANK WIRE

Blank wire tags are like conventional coded-wire tags in all respects except that no code has been engraved on them. The main use of blank tags is to separate hatchery from wild fish at spawning time. This is done using metal detectors, as the fish are otherwise unmarked. Unfortunately, now that mass-marking has required the use of electronic metal detectors in most sampling operations on the southern half of the coast, the fish carrying these tags are being picked up by samplers and the heads are making their way to dissection laboratories. Substantial effort is wasted before it is discovered that the tags are useless for any of the analytical purposes for which the CWT recovery program is intended.

It was decided that the use of blank wire tags should be tracked in the “unassociated” release file. Recoveries of blank wire tags will be monitored by the Data Sharing Committee to ensure that the cost of handling these heads (sampling, shipping, laboratory dissection, data processing) does not become a significant burden to sampling agencies.

C. ANALYTICAL IMPLICATIONS OF NEW SAMPLING PROTOCOLS

The algorithms for extrapolating an observed (actual) tag recovery to account for the unsampled portion of the catch and then for the untagged portion of the release group were relatively straightforward prior to the advent of mass-marking, selective fisheries and electronic sampling. Now the fish containing tags may be marked or unmarked. Fish not containing tags may be marked or unmarked. Sampling may be visual or electronic or both, depending on the expected mark rate and requirement to intercept unmarked fish with tags. The algorithms for extrapolation depend not only on the sampling mode, but also on whether the fish was taken in a selective fishery, or vulnerable in a preceding selective fishery. Also, new information to support the calculation of mark rates is required for analysing selective fisheries.

Algorithms are being tested as new data are received. The format specifications of the exchanged data are being revised in response to this testing, in order to make sure that all the required data elements are included and that their interpretation is unambiguous. This work has been a major focus of the Data Sharing Committee and Data Standards Working Group for several years now, and will continue to occupy a large portion of their time in 2001.

IV. RECOMMENDATIONS

A. IMPLEMENTING FORMAT VERSION 4.0

Agencies should continue to work towards exchanging a set of test data in Format Version 4.0 by midyear, 2001.

B. MONITORING THE ADEQUACY OF RECOVERY DATA

In order to derive reliable statistics from CWT data, a minimum number of tag recoveries must be present in the sampling strata of interest. The requirements differ for various

analyses. The Data Sharing Committee should routinely monitor the number of recoveries in the database at a coarse level, but the Chinook, Coho and Selective Fisheries Technical Committees should ensure that the number of recoveries meets their specific needs. Any concerns should be shared, and passed to the Commission by the Data Sharing Committee. Where it is possible and practical to correct the problem by increasing tagging rates or sampling rates, such recommendations should be forthcoming from the Commission.

C. PUBLISHING TABLES OF SPECIAL PURPOSE TAG CODES

The Chinook Technical Committee, Coho Technical Committee, and Selective Fisheries Evaluation Committee should assume responsibility for providing tables of specially used tag codes to the exchange points and for updating the tables as required. These tables will be helpful to other users of the CWT database, in ensuring that they select appropriate tag codes for their analyses.