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PACIFIC MARINE FISHERIES COMMISSION

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MEMORANDUM

TO: Mark Committee; General Distribution

FROM: Ken Johnson, Regional Mark Processing Center

DATE: 29 March, 1984

SUBJECT: Draft Minutes - 1984 Mark Meeting

Enclosed are the draft minutes of the February 15, 1984 Mark Meeting held in Portland. Please review them for accuracy and content. Most sections have had a preliminary review by one or more participants at this meeting. Formal approval will be sought at next year's Mark Meeting.

JKJ:FEC

Enclosure: As above

MEMBER STATES
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27 February, 1984

DRAFT MINUTES OF THE 1984 MARK MEETING
February 15, 1984 - Portland, Oregon

I. PRELIMINARY BUSINESS

A. Introduction

Committee members and other meeting participants introduced themselves and gave a brief statement of work responsibilities (see list of attendees, Attachment 1). Jim DeShazo (WDG), John Meyer (USFWS), Ron Pelzman (CDFG), and Terry Wright (NWIFC) were presented as new members of the Mark Committee.

B. Review of Agenda

The agenda was approved with the following additional item:

Item 13.c: Report by Smith-Root, Inc. regarding redesigned CWT hardware and future plans.

C. Approval of the 1983 minutes

The Committee approved the revised minutes of the 1983 Mark Meeting. The initial draft version had been revised to clarify that the newly desequestered steelhead Adipose clip (effective February 1, 1983) for coastal Washington, Puget Sound, and British Columbia still required an annual review by the Mark Committee before use in order to maintain regional coordination.

II. Status of Backlogged Recovery Data and Proposed Action

The current status of CWT recovery data was reviewed by Larry Six and Ken Johnson (both PMFC). Actual or projected dates for data submission, processing and distribution (current as of 3/26/84) are summarized in Table 1 (Attachment 2) for 1977 through 1983. The 1977 report is the only complete report distributed to date. The 1978 and 1979 reports have been distributed but lack California data. Recovery data for 1980 and 1981 are available.

Larry Six noted that the lack of timely reports has caused Federal agencies to raise questions concerning funding and the usefulness of the data to researchers and managers. Accordingly, this matter was brought to the attention of the Pacific Coast Fisheries Data Committee (includes representatives of 13 State and Federal agencies plus the Councils) on February 8, 1984 in San Francisco. The Data Committee reviewed the goal set up by PMFC's Salmon and Steelhead Committee in 1977 of providing recovery data within six months after the end of the reporting year. On the basis of optimistic progress reports by each of the States, it was concluded that most States will meet this goal within the next 6-12 months.

This optimism was shared by the Mark Committee as well. Ron Pelzman announced that the 1978 CDFG data tape was in the mail. California also expects to complete data through 1984 by June, 1985. Ken Hall (ODFW) reported that Oregon's 1980 and 1981 data will be completed this month, and the 1982 data possibly by June. Don Bailey (CDFO) noted that Canada also has completed the 1980-81 data and projected completion of the 1982 data by June as well.

Alaska and Washington expect to complete 1982 data by February and June, respectively. On this basis, Johnson estimated that the 1980, 1981, and possibly 1982 recovery reports can be completed during 1984.

Tribal reporting remains one area of some uncertainty. Tag recoveries made prior to 1980 (primarily Quinault data) were reported by WDF. However, this responsibility was turned over to the USFWS in 1981, and later accepted by the NWIFC in 1983 following approval of NWIFC representation on the Mark Committee. Terry Wright estimated it would take some time for NWIFC to work out procedures for the several tribes involved in tag recovery programs.

The Committee approved the following operating guidelines for the RMPC in order to increase the timeliness of reporting following data submission.

- Recovery data will be given highest priority for processing.
- Recovery reports (finalized data) will be distributed at the end of each year, whether or not reports are available for all agencies.
- Recovery data will be available for distribution via magnetic tape as soon as it is finalized.
- Preliminary data reports (hard copy) will be distributed only on a request basis.
- Tag coordinators will be informed as new data sets become available.

III. Update on 1983 High Seas Sampling Program

A. 1983 Tag Recoveries

Alex Wertheimer (NMFS-AK) reported that 43 tagged salmonids (38 chinook, 2 coho, 3 steelhead) were sampled in 1983 by U.S. observers and scientists on foreign commercial and research vessels operating in the North Pacific Ocean and Bering Sea.

Several of the tag recoveries represented western range extensions. An Ore-Aqua Food chinook (tag 60-33-42) from Yaquina Bay, Oregon was recovered north of Akutan Pass in the Bering Sea (54° 39' N latitude, 166° 13' W longitude) and represents the first conclusive evidence that Pacific northwest chinook stocks may migrate through the Aleutians into the Bering Sea. Two tagged steelhead (tag 23-06-06, Clearwater River, ID; tag WH-DB-WH, Methow River, WA) recovered by a Japanese research vessel south of Attu Island, AK (48° N latitude, 171-173° W longitude) represent westward range extensions for Columbia River steelhead trout stocks.

Complete recovery data are available in a 1983 INPFC report prepared by Alex C. Wertheimer and Michael L. Dahlberg, entitled Report of Incidence of Coded-Wire Tagged Salmonids in Catches of Foreign Commercial and Research Vessels Operating in the North Pacific Ocean and Bering Sea during 1982-1983. Copies will be provided by the authors upon request.

B. Proposal for Extended Steelhead Sampling Coverage

Wertheimer also noted that the Japanese did agree last year to the U.S. National Section's (INPFC) proposal (supported by a 1983 Mark Committee resolution) that U.S. salmon observers on board Japanese motherships be permitted to transfer periodically to catcher boats in order to sample the incidental steelhead catch for tags and other biological data before the fish were thrown overboard. A total of 26 salmon observer trips were made in 1983 in addition to observations made by U.S. marine mammal observers positioned on some catcher boats. However, only eight steelhead were sampled, none of which were Adipose clipped.

The estimated incidental steelhead catch by the circa 200 catcher boats has been revised downward from 50,000 fish to 1,500 - 5,000 fish since the abstention line for the Japanese fleet was moved 10^{o} westward to 175^{o} East longitude. Given the low interception rate and poor sampling results in 1983, the U.S. Section is now requesting through INPFC that all steelhead caught by the catcher boats be transferred to the Japanese motherships for biological and CWT sampling by U.S. observers before being discarded. This action would greatly increase the sampling coverage while still preventing steelhead from becoming a targeted species. (* See NOTE at end of this section for update on Japanese response.)

In a related matter, the Japanese are now in the process of renegotiating the quota of chinook that can be landed as incidental catch in North Pacific and Bering Sea waters. The U.S. Section has therefore requested that U.S. observer coverage be extended to the Japanese mothership fishery operating outside the FCZ in the Bering Sea triangle area in order to verify landings and sample for tags, scales, and other data.

Given these developments, the Mark Committee unanimously approved the following resolution to INPFC in support of the U.S. Section's requests for increased steelhead and chinook sampling coverage:

> "We support the proposal of the U.S. Section of INPFC that catcher boats in the Japanese mothership fishery land their incidental catch of steelhead on the motherships to allow collection of biological data by U.S. (salmon) observers. We understand that such landings would be for biological sampling only, and that steelhead would remain a prohibited species for commercial landing.
>
> We also support the proposal of the U.S. Section to extend U.S. observer coverage to the mothership fishery operating outside of the U.S. FCZ in the Bering Sea, in order to corroborate landings of chinook salmon and to sample the landings for coded-wire tags and other biological data."

*NOTE: PMFC forwarded the resolution and supporting information on February 17 to the Chairman of the U.S. Section in order that it might be considered during INPFC's February 27-March 2 meeting in Tokyo. This meeting has now been held and Japan has agreed to return to the motherships all steelhead caught by the catcher boats for sampling by U.S. observers. Up to 200 whole fish from each mothership fleet will be frozen for subsequent shipment to the United States for further laboratory analysis. Sampling coverage outside the U.S. FCZ was not discussed during the February 27-March 2 meeting.

IV. Review of Adipose Clip Policy for Columbia Basin Steelhead and Coastwide Implications.

A. Overview of Revised Policy for Columbia Basin Steelhead

Larry Six introduced the matter by noting that Idaho, Oregon, Washington and Federal agencies (USFWS, NMFS) in the Columbia Basin agreed in September, 1983 to reserve the Adipose clip on Columbia Basin steelhead as a sport management mark for identifying harvestable stocks while protecting wild stocks and developing hatchery stocks. Concurrently, the LV mark was reserved as a flag for Columbia Basin steelhead bearing a CWT in order that tag recoveries might continue in the mixed stock fisheries of the Columbia main stem.

B. Rationale for New Policy

Don Swartz (ODFW) reviewed the rationale for the policy change since the Mark Committee as a whole had not been involved in the decision process. He noted that in earlier years, there was little hatchery steelhead production in the Columbia Basin. This was particularly true in the upper Columbia and Snake Rivers where the runs were essentially natural production. As the various dams were built, these once abundant wild runs declined rapidly to the point of barely maintenance levels.

More recently, new hatcheries and mitigation projects have come on line with the result that hatchery fish are now much more abundant than the wild runs. This disparity is expected to increase to 90% hatchery fish by 1990 when over 15 million summer steelhead are projected for annual release.

The weaker wild stocks have been protected during the past decade by sharply restricting or essentially eliminating mixed stock fisheries in the main stem Columbia, Snake, and Salmon Rivers. However, the statutory mandate to protect and maintain wild stocks meant that the increasingly important hatchery fish could not be harvested in the mixed stock fisheries unless they could be distinguished as being hatchery stock.

This situation led managers to search for a suitable mark for identifying harvestable fish. Given the magnitude of the marking project the mark had to be easily applied and easily recognizable,

in addition to being the least costly to apply and the least detrimental. Only the Adipose clip met these requirements in full. Therefore, since it was felt that management needs far outweighed research needs, Oregon, Washington, and Idaho sought and obtained regional approval to reserve the mark as a management tool in the Columbia Basin. The LV was viewed as the best alternative CWT flag and therefore reserved for that use.

C. Summary of Revised Steelhead Policy (Columbia Basin)

1. Adipose Clip

a. The Ad clip (single or in combination) in the Columbia Basin is reserved to identify harvestable fish and is no longer a flag indicating a CWT.

b. The Ad + CWT mark may be used in the Columbia Basin if the fish are harvestable, but no Adipose sampling will be done for tag recoveries in the Columbia River fisheries.

c. All applications of the Ad clip (single or in combination; with or without a CWT) must be reported to PMFC for consideration by the Mark Committee prior to marking the fish.

d. Hatchery fish may be released without the Ad clip if the stock is not considered to be harvestable.

2. Left Ventral Clip

a. The LV mark (single or in combination) is reserved for coded-wire tags placed in Columbia Basin steelhead and cannot be used without a CWT.

b. The Ad clip may be used in conjunction with the LV-CWT mark to indicate harvestable CWT marked steelhead.

c. All uses of the LV + CWT mark (single or in combination) must be reported to PMFC for coordination prior to any marking.

The Mark Committee unanimously approved this policy.

D. Coastwide Implications of the Columbia Basin Steelhead Policy

1. Coastal and High Seas Sampling for Tagged Steelhead

British Columbia (CDFO), Alaska (ADFG) and NMFS (U.S. Observer Program) are the only agencies conducting coastal or high seas CWT sampling programs that include steelhead. None of these agencies expect the desequestering of the Ad clip in the Columbia Basin to adversely impact sampling because of the low number of steelhead involved (2,000-3,000 range for CDFO and ADFG).

Karen Crandall (ADFG) and Don Bailey (CDFO) both emphasized that their agencies would continue to use CWTs in some Ad-clipped groups and would therefore check any sampled Ad marked steelhead for an accompanying LV mark. However, no additional effort would be made to sample for the LV-only mark because of the added cost. U.S. observers, on the other hand, likely would be asked to check for all fin marks because of the limited number of steelhead sampled.

2. Proposed Coastwide Extension of LV Restriction Rejected

The proposed extension of the LV clip as a CWT flag coastwide for uniformity's sake was rejected by the Mark Committee. This was because of its limited utility and because ADFG and CDFO did not intend to sample for LV + CWT marked steelhead. In addition, concern was raised about the increased mortality believed to be associated with marks other than the Adipose clip.

This decision means that the LV (single or in combination) can continue to be used without a CWT anywhere outside of the Columbia system, provided that the standard reporting procedures to PMFC are followed first.

3. Removal of Ad Clip Restriction for Alaskan Steelhead

During the 1983 Mark Meeting, coastal Washington, Puget Sound, and British Columbia steelhead stocks were no longer required to have a CWT with the Adipose clip. As a result, Alaska was the only remaining coastal region required to use CWTs with Ad clips on steelhead. Alaska therefore proposed that this restriction be removed in order that the policy might be uniform coastwide and in the Columbia system. This proposal was approved by the Mark Committee.

Karen Crandall noted that Alaska expected to release both Ad-only and Ad + CWT marked steelhead groups in the future.

V. Request to Re-use Half Length Binary Tag Codes on Alaskan Pink Salmon

Karen Crandall reviewed Dr. William Smoker's (University of Alaska, Juneau) request for an exemption from the restriction that tag codes can be used only once. Smoker is in the second year of a three year study involving 300 tagged sibling groups of pink salmon. Since there are only 256 possible tag codes per agency code (half length B-Series), the intent was to reduce the number of required tag codes to 120 rather than exhaust the entire agency BØ series assigned to Alaska.

Dr. Keith Jefferts (NMT) noted that more tag codes could be placed on half length tags. However, he was reluctant to do this for a single user because of the necessary development costs.

The request to re-use codes for the remaining two years of the study was approved on the basis that there is no other recovery effort for Ad-clipped pinks in SE Alaska, and because only one brood year is present in the ocean at a given time. However, the Committee also stipulated that this was to be viewed as a special exception to the rule and not a precedent.

An alternative proposal to desequester the Ad clip for wire tagging pinks was summarily rejected by the Committee as unacceptable.

VII. Proposal to Change the Mark Meeting to Early Fall

A. Meeting Time to Remain the Same

Ken Johnson introduced the proposal by noting that the Mark Meeting has been traditionally held in late January or February, in part because this period is usually a slack time for fisheries work. However, during the past few years there have been several incidences wherein earlier action of the Mark Committee was needed. The 1983 request to desequester the Ad clip for Columbia Basin steelhead was one of three requests that required early action prior to the 1984 Mark meeting. In such cases, the requests had to be largely resolved by phone and letter. It was therefore proposed that the Mark Meeting be rescheduled to September or October in order to precede the commencement of fin marking.

Following some discussion, the Committee concluded that the Mark Meeting should not be rescheduled. While acknowledging that travel conditions are poorest during January and February, it was felt that this period was still the most appropriate time to plan chinook and coho fin mark releases. The primary reason is that available numbers of fish are not known until after the fall egg take. Tag coordinators also agreed that January and February continue to be a slack time in fisheries work and thus appropriate for scheduling meetings.

B. Steelhead Fin Mark Requests to be Handled in June

Steelhead trout are typically marked in the fall (October-November) and then released the following spring. As a result, steelhead fin mark requests at the Mark Meeting (January-February) have either had to be for a full brood year in advance (e.g. 1984 marking requests for release in 1985), or already been given special approval for marking prior to the meeting.

Several agencies noted that planning steelhead fin mark releases a full brood year in advance was possible for their programs, but that the marks and numbers might not be very reliable. It was therefore proposed and approved that PMFC will call in June for steelhead fin mark requests that are scheduled for release the next year. Coordination between agencies will be done by mail and/or phone as necessary.

Fin mark requests for the salmon species will continue to be reported in December for coordination at the annual Mark Meeting in January-February. All new fin marks will be published in March as usual.

VIII. Report on Coastwide Stock Identification Plan

Roy Wahle (formerly NMFS-Portland) briefly summarized his efforts to date in developing a coastwide stock identification plan. The project is an outgrowth of a recommendation by the 1982 CWT workshops that representative production releases of important contributing stocks be identified and adequately marked in order to evaluate their contribution to the fisheries.

Project guidance is provided by an Oversight Committee whose members include Canadian, Indian, State and Federal agencies. The Oversight Committee has given Wahle the following assignments:

- Identify representative hatchery and natural stocks, and established management units on an agency by agency basis.
- Determine current coded-wire tagging efforts on an agency by agency basis, with emphasis on harvest management and natural stock tagging efforts.
- Recommend future stock identification requirements for hatchery and non-hatchery stocks.
- Describe problems not resolved with coded wire tag programs.
- Identify alternatives to coded wire tagging.

Wahle commenced work in November 1983. Progress to date includes an inventory list of the present day average number of chinook and/or coho spawners in each stream in California, Oregon, and the Washington side of the Columbia below the Snake River. Hatchery production is also included where appropriate. Similar data will be collected in the near future for the remaining Washington streams, and for Idaho, British Columbia, and Alaska.

A significant amount of time was also spent investigating other alternatives to coded-wire tagging. This includes genetic stock identification by electrophoresis (NMFS and WDF studies), and the use of scale patterns to identify major Asian and North American chinook stocks taken as incidental catch in the foreign groundfish trawl fishery (University of Washington Fisheries Research Institute studies).

IX. Report on CWT Statistical Research

Following the recommendation of the 1982 CWT workshops, PMFC organized a Statistical Committee in 1983 to seek solutions to CWT statistical problems. These problems include the following:

- Develop statistical procedures for estimating variance and the relative contribution of its components.
- Determine the adequacy of CWT studies for assessing stock contribution.
- Develop statistically valid procedures for pooling time and area strata, and for handling recoveries from multiple catch areas.
- Develop guidelines for minimum tagging and sampling rates.

Frank de Libero (WDF/PMFC) has been working full time on the majority of these tasks with assistance from WDF, and guidance from the Statistical Committee. de Libero paid special tribute to Tony Rasch of WDF for his outstanding contribution to the work. (* See also special acknowledgement at end of minutes.)

Progress has been substantial to date and includes the following:

1) Recovery data for 1971-1977 chinook and 1971-1978 coho broods (lacking California data) have been selected, edited, and loaded on the University of Washington computer.

2) These data have been merged to form an aggregated data base (1 record/tag code) which consists of "observed" and "estimated" files for both chinook and coho.

3) Multi-year summary reports (i.e., brood reports) have been generated from the aggregated data for both observed and estimated recoveries. Preliminary reports were distributed in November, 1983.

   New summary reports were distributed at the Mark Meeting. Revisions included standardization of hatchery and agency designations and a brief statement on documentation. In addition, the far right column now represents the tags harvested as a percentage of tags released. Previously this column included escapement where available.

   Copies of the new summary reports are available from PMFC.

4) The aggregated data base was enhanced in conjunction with the Statistical Package for the Social Sciences (SPSS). It now contains all hatchery names in the research data base. All production codes are indicated for Washington and Oregon and their hatcheries are grouped according to the 14 areas used for salmon management.

   Example statistical reports have been generated and include:

   - Spring Chinook by Brood Year
   - Fall Chinook by Brood Year
   - Coho by Brood Year
   - Total Agency Interceptions by Recovery Region

   Copies may be obtained from PMFC.

This information has been set up on a public file at the University of Washington's Academic Computer Center (on the CYBER) and is available for general access via TELENET.

5) These data are now in the process of being loaded into SIR, a large data management system at the University of Washington. The detailed data base will contain the individual tag recovery records.

The plan is to load the Columbia River release data for the bulk of the statistical analysis. This reduces the recovery data base to 90,000 records (as opposed to 530,000). The subset represents Oregon and Washington recoveries along the entire coast and should therefore be adequate for most of the statistical evaluation.

6) A preliminary analysis has been done for replicate tag experiments. The results indicate that the average coefficient of variation (standard deviation divided by the average contribution rate) for recoveries of replicate tag codes is approximately 25% (aggregated over all ages and fisheries). This value was highly variable itself and ranged from 0% to 100%.

de Libero hypothesized that there is an inverse relationship between the coefficient of variation and the number of observed recoveries. If true, a minimum number of observed recoveries will be necessary in a stratum for a reasonable degree of confidence. A conjecture is that an adequate sample size would be between 20-100 observed recoveries per stratum.

X. Establish New Historical CWT Recovery Data Base

A. Background to Proposal

Johnson introduced the subject by noting that the only comprehensive regional data base available today for tag recoveries is that maintained by WDF since it includes pre-1977 data. The RMPC's data base commences in 1977, the year it was established. In the course of de Libero's work, a significant number of non-WDF tag recoveries in the WDF data base were found to be revised from that originally provided by the recovery agencies. One of the principal reasons for this was that WDF often applied different pooling procedures to meet with-in agency data analysis requirements. As an example, Alaska's nine reported statistical areas were pooled into four areas, thus generating new expansion factors and tag estimates.

While these revisions are appropriate for WDF's in-house data analysis purposes, it means that a comprehensive unmodified regional data base is not available. The Statistical Committee recently considered this situation and recommended that an unrevised version be developed, and that it include pre-1977 recoveries. Mark Committee members were therefore asked to response to PMFC's proposal to develop this data base with their assistance, using de Libero's work on SPSS and SIR/DBMS as a proto-type once he has completed his statistical analysis.

B. Committee Discussion and Recommended Workshop

Committee members voiced strong support for the concept of an on-line, easily accessible regional recovery data base. However, doubts were expressed as to the wisdom of spending much effort to go back and reprocess pre-1977 tag recoveries since the data were generally of poor quality and few agencies had the data computerized. It was felt that developing an on-line system with present data was much more critical.

A second area of concern was that of having two on-line regional data bases (WDF, PMFC) that would, in many cases, produce different results. Part of the problem is that the WDF data base has been widely used by outside agencies because no other comparable file existed. As a result, confusion would be introduced by having a second, albeit unmodified, regional data base.

Johnson suggested, however, that the existing WDF data base might be made acceptable to all agencies with perhaps only very limited modifications. The rationale for this is that a given recovery agency requires area-specific information for all recoveries within its jurisdiction. Outside agencies, however, typically want or can use those same tag recoveries expanded for more broadly defined areas (i.e., pooled across two or more statistical areas of the recovery agency). As a result, there should be a level of pooling (or reporting) that is acceptable on a regional level and more general than that maintained for each given recovery agency's in-house data base.

WDF's pooling of Alaska's nine PMFC reporting areas into four areas (northern outside, inside; southern outside, inside) is an excellent example of this. It appears to be a very reasonable approach since the pooling now permits the expansion of many more tags that otherwise had to be excluded because they were landed in catches coming from multiple areas. As a result, additional valuable recovery data becomes available to non-Alaskan tag releasing agencies. This does not, of course, preclude Alaska from analyzing these same data by the more specific statistical areas used in their sampling program. Presumably similar situations exist for all recovery agencies.

Tony Rasch agreed with this concept and recommended that standards be developed for deciding how the data should be reported (i.e., pooled) for the regional data base. There was strong support for this and Committee members further recommended that a mini-workshop be convened following the development of specific proposals. Given the technical nature of the project, only a limited number of statisticians and harvest managers will need to be involved. PMFC will assume responsibility for convening the workshop once a proposal for the regional data base has been developed.

XI. Key Elements Required in Regional CWT Documentary Data Base

Another key recommendation of the 1982 CWT workshops was that a regional documentary data file be developed for all CWT studies. It was envisioned that this file would include information on rearing conditions, disease history, type of release (production, experimental, etc.), and other pertinent factors. This file would likely be a sub-set of the multi-year regional CWT data base discussed in agenda item X.

WDF has maintained a documentary data base for WDF release groups for several years and is now in the process of upgrading this effort. More recently, USFWS has undertaken work on a more extensive data set. Agency reports were presented to the Committee with the intent to demonstrate what has been accomplished and to help determine the course of action needed to develop a regional documentary data base.

A. Washington Department of Fisheries Approach

Dick O'Connor presented WDF's report and noted that they were in the final phase of redesigning and substantially expanding the documentary data base in order to meet the needs of the harvest managers. The data collection form (Attachment 3) has been computerized for direct, on-line reporting by WDF's Salmon Culture Office. The overall intent is to provide concise rearing, tagging, and release data that clearly indicates whether the group was normal and what it was representative of (i.e., production, experimental, etc.).

The kinds of data that will be collected (starting with 1983 releases) are:

- use of data (i.e., identify proper applications)
- stock characteristics
- hatchery procedures (rearing, release time, release location)
- transfer history
- disease history
- tagging history
- pre-release sampling
- related groups
- bibliography referencing group
- miscellaneous information
- sampling coverage (fishery, rack, etc.)

O'Connor summarized by stating that the data were invaluable for planning and analysis, and urged all release agencies to develop similar files that could be informally shared between agencies or through a formalized regional data base.

B. U.S. Fish and Wildlife Service Report

Richard Comstock (USFWS) noted that the USFWS is not a management agency like WDF and therefore has somewhat different goals for

developing a documentary data base. These goals include evaluating hatchery contribution, improving hatchery practices, and an improved ability to share data with PMFC and other agencies. The overall goal is to improve ability to analyze CWT studies.

Another reason for the effort is that USFWS has observed in many cases a wide variation in recoveries from seemingly similar tagged groups. Hence there is a need to scrutinize all aspects of coded-wire tag research, including juvenile health, environment, and genetic aspects.

Key types of information that will be recorded include:

- brood stock health and biological characteristics
- brood stock mark recovery and sampling data
- specific information on spawning adults
- detailed information on the egg phase, including environmental conditions, identification of fish groups, and transfers
- comparable data will be collected for the juvenile phase, including marking and release information

Fourteen forms will be used to collect these data. The data will be entered by remote terminal at the various regional fisheries assistance offices and stored in raw form in the data base. A manual is nearing completion which provides the required forms, directions, and necessary coding. Hardware evaluation is continuing. Implementation of the system is planned for this brood cycle, whether or not the computer hardware and software are in place.

C. Recommendations Regarding Regional Documentary Data Base

There was general agreement that a regional documentary data base was needed.

A significant first step toward this goal has already been taken since CDFO, ADFG, ODFW, IDFG, and CDFG either are developing a hatchery data base or already have one in place. Hence all agencies are more or less moving in parallel paths.

Ken Hall suggested that the next step in regionalizing the data would be to meet together and draw up objectives and standards. A workshop was suggested as one possible means to accomplish the necessary planning.

In view of the support for the project, Larry Six took the prerogative as Chairman to form a subcommittee with instructions to look at objectives and desired common elements, and then report back to the Mark Committee. Representatives of WDF, USFWS, CDFO, and ODFW were asked to participate because of their prior involvement with documentary data bases. Lee Blankenship (WDF) was appointed Chairman and asked to organize the subcommittee and set a date for the first meeting.

XII. Standardization of Hatchery Names

Tag coordinators were provided with listings of hatchery and release site names associated with their respective agency's CWT release data on the PMFC data base and asked to standardize the names. The revised listings were due back March 1 in order that the changes could be made prior to printing the 1984 CWT Release Report (releases through 1983). This effort will eliminate many of the problems experienced in the past by those wishing to sort releases by hatchery or region.

XIII. Update on Advances in Microtag Technology

A. Passive Integrated Transponder (PIT) Tags

Earl Prentice (NMFS) provided an update on the PIT tags and emphasized that they are a complimentary tagging system rather than a replacement for binary tags. He further noted that NMFS is not developing the PIT tag but only testing the technical and biological feasibility of using the tags to identify salmonids. BPA is funding preliminary studies to determine tag placement, retention, and tissue response to the tag.

PIT tags are essentially a preprogrammed 42-bit silicon chip, capacitor, and transponder. The tag is capable of receiving and transmitting a specific radio signal. Each tag can be uniquely coded with one of about 34 billion codes. Decoding can be done in vivo using a remote sensing device several inches from the fish. The fish does not need to be restrained nor anesthetized during the decoding process which is virtually instantaneous.

The encapsulated transponder tags have been recently reduced in size to 0.315" length by 0.083" diameter (slightly larger than a grain of rice). The cost per tag is presently $5.00 for experimental purposes. Cost probably will vary according to quantity purchased.

Preliminary tests have been carried out on tag placement (injected by syringe) and tag retention using fall chinook ranging in length from 123 to 164 mm and weight from 22 to 52 grams. Tags were placed in the opercular musculature, dorsal musculature, and body cavity. Of the three sites tested, over the 103 day period, survival was highest in the body cavity and in the dorsal musculature. Tag retention was highest in the body cavity. These results are summarized below:

Site	% Survival	% Tag Retention
Control	91	
Opercula	100	73
Body cavity	95	93
Dorsal musculature	94	87

The snout could not be used because of the size of the tags and the large needle.

Several thousand of these PIT tags will be available this spring and field tests will be commenced then.

B. Update on Smith-Root, Inc. Activities

1. Redesigned Tagging Machines

David Smith (S-R) noted that Smith-Root, Inc. purchased Technical Research Company's tagging venture last spring and has been busy since then in redesigning and modifying TRC hardware. The TRC tagging machine was redesigned to eliminate the short feed problem, and to install solid state electronics and alcohol lubrication.

2. Tagging Trailers, PIT Tags, and Other Services

Smith-Root is also considering the option of building tagging trailers and possibly doing contract tagging (binary tags) with a permanent crew. They are also hopeful of becoming the distributor for the PIT tags and developing an automatic injector system.

Other services provided by Smith-Root include fish separation and counting devices, color coded tags (for resident fish only), and improved freeze branding equipment. Price reductions were noted for most hardware and the color coded tags.

C. Update on Northwest Marine Technology's R & D

1. New Wire for Half-length Tags

Dr. Keith Jefferts reported that detection problems experienced with half-length tags may well be solved by replacing the stainless steel wire with wire comprised of a platinum/cobalt alloy. The new wire has excellent magnetic properties and half-length tags (0.5 mm) are as easily detected as stainless steel full length tags. Tests are now being conducted by WDF.

2. X-ray Readable Binary Tags

Work is also progressing well on the development of x-ray readable binary tags. The tags (1.5 mm length) can be placed in the snouts of juveniles as small as 100/lb and electronically decoded without harming the fish. The tags can be adequately decoded with the assistance of computer enhanced imagery. Price per tag is estimated to be 10¢. The x-ray tags are seen as complimentary to the PIT tags, each with special applications.

NMT has proposed to develop the system for large scale use in the Columbia Basin, provided that there is sufficient agency

interest to justify the investment in research and development. Meetings are presently underway to determine the interest and support for its development.

3. Price Increases

Jefferts also noted that there will be a 25% price increase for binary tags later in the spring or summer. There will be no change in equipment prices.

XIV. Revised Format of Mark List

The Mark List, as published to date, has been a somewhat misleading and confusing document since it includes both proposed and actual fin mark releases. Many of these marks were either not used or significantly modified without the changes being reported. As a result, Canada recommended that the Mark List be converted to the same format as the CWT Release Report where only the prior year's actual release numbers are added to the report. It was further suggested that new mark requests be distributed as a separate list each year, and then added to the Mark List the following year once release data became known.

The Committee concurred that there were problems with the accuracy of the Mark List, but did not want to have separate reports. As a compromise, it was agreed that tag coordinators would report the previous year's actual release data at the same time that new requests are made for the upcoming year. This change will apply only to 1983 releases and onward. Reporting will be done by using xeroxed pages from the previous year's report and writing in the final data in the appropriate places.

XV. Fin Mark Allocations for 1984

A total of 188 fin mark requests for 1984 (22 chinook, 26 coho, 97 steelhead, 4 sockeye, 31 chum, and 6 pink) were reviewed briefly and approved. Canada's requests were distributed at that time. No conflicts had to be resolved.

Another 49 fin marks were reported that had received special approval following the 1983 Mark Meeting and had been released in 1983.

XVI. Tony J. Rasch Acknowledgement

Members of the Mark Committee of PMFC would like to acknowledge the extensive work done by Tony Rasch of WDF and thank him for ten years of outstanding support. As the sole computer programmer assigned to the WDF coded-wire tag recovery data base, Tony was responsible for creating an orderly system of consistent data formats, error checking programs and data summary programs that have served as a model for several other agencies. The data checking tools he developed have helped biologists from WDF and other agencies discover inconsistencies, anomalies and even mispunches in their recovery data in time to correct them before delivering final "clean" data files to the Regional Mark Processing Center. His well known "TG6" format summary report, which creates a

report of all recoveries of a given tag code, is the report most often requested by workers both inside and outside WDF when CWT data reports are needed. Tony's conception of the "brood report" as an extension of the TG6 annual summary reports made possible the creation of a regionwide CWT recovery data base which includes both recovery data and finished summary reports stored in easily retrievable form.

We wish Tony well on his two-year venture to Oman as part of a fisheries development consulting team, and want to assure him that the tools he leaves behind will continue to serve as a basis for ongoing and expanding regional data analysis efforts.

:FEC

1984 Mark Meeting Attandance

Don Bailey	CDFO, Vancouver BC
Lee Blankenship	WDF, Olympia
Ralph Boomer	USFWS, Olympia
Sue Carruthers	CDFO, Vancouver BC
Rich Comstock	USFWS, Olympia
Karen Crandall	ADFG, Juneau
Earl Dawley	NMFS, Jones Beach
Jim DeShazo	WDG, Olympia
Rodney Duke	IDFG, Lewiston
Lyle Gilbreath	NMFS, Bonneville
Ron Gowan	Anadromous, Inc Corvallis
Ken Hall	ODFW, Portland
Dick Harper	BPA, Portland
Steven Hays	Chelan County PUD, Wenatchee
Dennis Isaac	ODFW, Clackamas
Keith Jefferts	NMT, Shaw Island
Ken Johnson	PMFC, Portland
Ian McKie	USFWS, Olympia
Mike Matylewich	CRITFC, Portland
Scott McCutcheon	NMFS, Bonneville
Nancy McHugh	ODFW, Corvallis
John Meyer	USFWS, Olympia

Jim Norton	ODFW, Clackamas
Dick O'Connor	WDF, Olympia
Steven Olhausen	USFWS, Vancouver
Donn Park	NMFS, Seattle
Ron Pelzman	CDFG, Rancho Cordova
Derek Poon	PNW Enhancement Planning Team, Portland
Andy Rankis	NMFS, Jones Beach
Tony Rasch	WDF, Olympia
Lin Roberts	ODFW, Portland
Phil Roger	CRITFC, Portland
Dan Romey	Metlakatla, AK
Larry Six	PMFC, Portland
David Smith	Smith-Root, Inc., Vancouver, WA
Ruth Southern	CRITFC, Portland
Fred Stutsmen	Charter Boat Opr., Brookings
Don Swartz	ODFW, Portland
Art Tautz	BCFW, Vancouver, BC
Roy Wahle	PMFC, Portland
Alex Wertheimer	NMFS, Auke Bay
Gilmore White	Metlakatla, AK
Terry Wright	NWIFC, Olympia

ATTACHMENT 2
Agenda Item 2

Table 1. Status of CWT recovery data by agency and year, including projection dates, in (), for completion by the Regional Mark Processing Center

Agency	Status	Recovery Report Year						
		1977	1978	1979	1980	1981	1982	1983
ADFG	Submitted	S	S	S	Prelim	Prelim	S	(3/84)
	Processed	P	P	P	P	P	(5/84)	
	Distributed	D	D	D	(5/84)	(8/84)		
WDF	Submitted	S	S	S	S	S	(6/84)	?
	Processed	P	P	P	P	P		
	Distributed	D	D	D	(5/84)	(8/84)		
ODFW	Submitted	S	S	S	S	S	(6/84)	?
	Processed	P	P	P				
	Distributed	D	D	D	(5/84)	(8/84)		
CDFG	Submitted	S	S	(3/84)	(5/84)	(6/84)	(7/84)	?
	Processed	P	(3/84)					
	Distributed	D	(3/84)	(4/84)	(5/84)	(8/84)		
NMFS (Seattle)	Submitted	1/84	1/84	S	S	S	?	?
	Processed	(3/84)	(3/84)	P	P	P		
	Distributed	(3/84)	(3/84)	D	(5/84)	(8/84)		
NWIFC 1/	Submitted			S	S	S	(7/84)	?
	Processed			P				
	Distributed			D	(5/84)	(8/84)		
CANADA 2/	Processed	P	P	P	P	P	(6/84)	?
	Distributed							
	A) CDFO	D	D	D	D	D		
	B) PMFC	D	(3/84)	D	(5/84)	(8/84)		

1/ NWIFC assumed responsiblility in 1983 for reporting tribal recoveries for years 1979 onward. WDF reported tribal recoveries (primarily Quinault) for 1977 and 1978.

2/ Canadian recovery data are published by CDFO, and only included in the season summary section of the PMFC reports.

WASHINGTON DEPARTMENT OF FISHERIES'
CODED-WIRE TAG GROUP REARING, TAGGING, AND RELEASE DATA COLLECTION FORM

III. Use of Data (choose one of six)

1. This was a good clean release of:

   a. 90-day fall chinook
   b. Yearling coho
   c. Yearling spring/summer chinook

   The results can be used to model native stocks as well as hatchery releases of similar groups.

2. This was a good clean release of:

   a. Delayed release coho
   b. A fall release of spring chinook
   c. A fall release of fall chinook
   d. A yearling release of fall chinook
   e. Accelerated release of fall chinook
   f. _____

   The results can be used to model hatchery releases of similar groups. They should not be used to model native stocks.

3. These fish were part of a clean _____ study.

   a. Size/time
   b. Density
   c. Diet
   d. Disease
   e. Genetics
   f. _____

   Since they were:

   a. A control group, they can be used to model similar hatchery production and native stocks.

   b. A treatment group, they should not be used to model anything other than groups receiving similar treatments.

4. Judgement and caution should be exercised in use of this group because of:

   a. Disease history
   b. Transfer history
   c. Release history
   d. _____

III. Use of Data (cont'd)

5. This experiment fell apart. The results should not be used to model either hatchery or native stocks.

6. _____

V. Stock Characteristics (choose one of five):

1. Normal stock for this hatchery.

2. a. Baker coho
   b. Clark Creek coho
   c. Bingham Creek coho
   d. Late Satsop coho
   e. Summer Soleduck coho
   f. Late Soleduck coho
   g. Type N coho
   h. Type S coho

3. Test of a transfer group of _____ stock.

4. Test of a hybrid group of _____ stock.

5. _____

VII. Hatchery Procedures - Rearing (choose one of three):

1. Normal rearing

2. Test group in an experiment

   a. Size/time _____ (explain treatment)
   b. Density _____ (explain density)
   c. Diet _____ (explain diet)
   d. Disease _____ (explain treatment)
   e. Genetics _____ (explain treatment)
   f. _____

3. Abnormal rearing because _____

Hatchery Procedures - Release Time (choose one of seven):

1. A single release at normal time for this group
2. A serial release
3. A volitional release
4. An unusually early release
5. An unusually late release
6. A size/time study
7. _____

VII. (cont'd)

Hatchery Procedures - Release Location (choose one of five):

1. Routine on-station release
2. Routine off-station release
3. Unscheduled on-station release because _____
4. Non-routine off-station release because _____
5. _____

IX. Transfer History (choose one of six):

1. No transfers took place.

2. Eggs taken at _____ (name of hatchery) then transferred to station.

3. Eggs taken and hatched at _____ (name of hatchery). Fish transferred to station on _____ (date).

4. Eggs taken and hatched on-station. Fish transferred to _____ (name of hatchery) on _____ (date). Fish transferred to back on _____ (date).

5. Eggs taken and hatched at _____ (name of hatchery). Fish transferred to _____ (name of hatchery) on _____ (date); then transferred to release station on _____ (date).

6. _____ (Detail more complicated history).

XI. Disease History

1. _____ (Synopsis of pathologist report)

XIII. Tagging History:

Date of tagging: _____

Number tagged; _____

Method of choosing fish to be tagged (choose one of four):

1. Random by use of sampler
2. Random by weigh-out method
3. Entire population of a pond
4. _____

XIII. Tagging History (cont'd)

Appearance at time of tagging (choose one of five):

1. Fish appeared healthy
2. Fish appeared out of size
3. Fish in smolted condition. Large scale loss.
4. Fish appeared unhealthy _____ (elaborate)
5. _____

XV. Pre-release Sampling (choose one of three):

1. Fish last sampled _____ (date), _____ (days) after tagging. _____ % tag loss found.

   a. Sampling done normally with no unusual difficulties.

   b. Sampling difficult because _____.

   c. _____.

2. Fish were not sampled for tag loss because _____.

3. _____.

XVII. Related Groups (choose one of seven):

1. There were no related groups.

2. There were replicates, but no other related groups.
   _____ (list codes of replicates).

3. There were related groups, but no replicates.
   _____ (list codes of related groups).

4. There replicates and related groups.
   _____ (list codes of replicates).
   _____ (list codes of related groups).

5. This was a make-up group for code _____.

6. There were make-up groups for this code.
   _____ (list codes of make-up groups).

7. _____.

XIX. Bibliography

(provide information about publications, progress reports, internal memos, etc., that reference this group.)

XXI. Miscellaneous Information:

_____.

Results of January 18, 1984 Tribal CWT Committee Meeting

A. PMFC Voting positions.

1. High seas sampling.

Should bring up the problems with several marks in steelhead now carrying CWY information and how this might inhibit high seas recovery information.

2. Columbia basin steelhead adipore clip policy.

A. While recognizing the benefits of harvesting only hatchery fish so that some weak wild stocks can be rebuilt, the Tribes believe that adipore clipping all hatchery fish will severely inhibit research efforts on steelhead. Sequestering the LV mark for use with CWT studies will be fine for some research assessments but would not be appropriate for any studies related to harvesting of fish due to differential harvest rates or survival rates dependent upon the marking scheme.

B. Coordination becomes extremely important for steelhead due to the complexity of marking schemes needed for research. This is a strong reason for moving up the annual meeting to fall and requiring fin mark proposals be approved at that meeting.

C. Tribes would object strenuously to any proposal that would require the clipping of 2 or more fins for research purposes.

3. Re-use ½ tags in Alaska pink

No problems or comments

4. Change mark meeting to early fall

A. Strongly recommend due to increased steelhead fin marks.

B. Recommend last week of Spt. or first week of Oct. -- no later.

5. Report on coastwide tagging plan study.

   A. Tribes very interested in seeing first draft of proposed representative stocks/management units with sufficient time for review and comment.

6. CWT statistical research.

   A. Looking forward to tribal input and information exchange through committee participation.

7. Establish new higtorical CWT recovery data base.

   A. Tribes very supportive.

8. Standardize hatchery and release sites names for CWT data base.

   A. Tribes agreed to participate in this effort.

   B. Recommend that guidelines be spelled out on release sites so that all standardize to same criteria.

9. CWT documentary data base.

   A. There was some question as to where you draw the line between a complete hatchery records system and only that data pertinent to CWT assessments. Theoretically anything which might affect survival of the fish would be pertinent.

10. Advances in maicrotag technology.

    Not enough information to make assessment of feasibility etc. Tribes would probably be willing to sample for them if appropriately marked.

11. Revised format for mark list.

    Tribes agree with only printing actual marks uses instead or proposed marks.

12. Fin mark allocations for 1984.

Tribes strongly object to WDF's lack of coordination with tribal programs that are also planting steelhead and trying to conduct research studies on them.

B. Discusion of tribal CWT programs.

1. Handed out general material on the key components of coded wire tagging studies and identifying the organization responsible for each component.
2. Handed out material explaining WDF's current data flow in relation to CWT studies.

C. Establishment of permanent tribal tag committee.

1. After a discussion of appropriate representation and participation the following committee participants were approved:
Margie McBride, John Blum, Nick Lampsakis, Steve Seymour, Paul Svoboda or Tim Tynan and Mike Hinton.
2. Major committee responsibilities were identitied as follows:
   A. Develop forms, which any tribe planning coded wire tagging, would be required to complete and submit for committee review. The information required would include not only the usual study purpose, and study design, but would require the design of a sampling program to recover tags in the terminal area.
   B. The committee must develop an annual schedule for submittal and review of the palns which fits in with USFWS tag trailer planning and with PMFC deadlines for mark approval.

C. The committee must try to work out a final draft of principles to be used when the need arises to priortize coded wire tag projects. This draft would then be submitted to the NWIFC Commissioners for finalization.

D. This committee will annually be responsible for developing tribal positions on PMFC tagging issues.

Descriptive Portion - RMPC Funding Proposal

Agenda items
10 & 11

OVERVIEW AND OBJECTIVES OF THE RMPC

The Regional Mark Processing Center has served State, Federal, and Indian fisheries agencies of the entire Pacific Coast (including Canada) for many years as the center for receiving, processing, and disseminating data on salmonid marking and tagging experiments. In recent years the volume of coded wire tagging (CWT) has exceeded twenty million tags annually, with experiments directed at a multiplicity of purposes. These studies include nutrition studies, hatchery production evaluations, and most importantly, the stock assessment work which is the heart of all salmon allocation considerations and related management decisions.

The RMPC was established initially at Clackamas, Oregon in 1970 by the Oregon Department of Fish and Wildlife (then the Oregon Fish Commission) in response to the urgent need for regional coordination of marking data. During the period of 1970-1976, the Center published annual summaries for fin and tag marking releases and recoveries. In the process, interagency cooperation and coordination were improved greatly.

In the mid 1970's, the dramatic upsurge in the regional use of coded wire tags placed an increasing burden on the data processing capabilities of both the individual agencies and RMPC operations at ODFW's Clackamas lab. PMFC's Salmon and Steelhead Committee (SSC) therefore recommended that a Regional Mark Coordinator position be created in order to facilitate more effective interagency cooperation in salmonid tagging, upgrade experimental tagging and sampling design, and also upgrade the data processing capabilities of the RMPC. The SSC also recommended placement of the RMPC under the supervision of PMFC to streamline interagency coordination. These recommendations were unanimously approved by PMFC's Executive Committee and implemented in May-July, 1977.

Present functions of the RMPC have changed little since its transfer in 1977 to PMFC. Primary objectives in the areas of data management and regional coordination are as follows:

1. Maintenance of Regional CWT Data Base

   A) Maintain and upgrade a regional data base for fin marks and for all CWT releases and recoveries

   B) Produce and distribute annual release and recovery data reports

   C) Provide magnetic tape copies of data upon request

   D) Implement recommended changes in the regional data base to meet expanding requirements for new data and reports

2. Regional Coordination of Marking Studies

A) Establish regional agreements for fin marking and use of coded wire tags with the assistance of agency marking coordinators

B) Recommend changes for upgrading the regional data base to meet expanding or changing user requirements

C) Assist agencies to improve timeliness of reporting, with special emphasis on tag recovery data

D) Develop recommendations for improving coordination and quality of coded wire tagging studies, with emphasis in the areas of experimental design, sampling design, estimation procedures, statistical problems, and documentation

PROGRESS SUMMARY TO DATE

1. Upgrading of Regional Data Base

Prior to PMFC taking over the RMPC in 1977, the regional data base consisted of poorly maintained decks of computer cards which were used to generate the published summaries. The data base has since been converted to reliable, easily accessible, on-line computer files which contain detailed data on each individual recovery. These files are available on magnetic tape to interested agencies. Also, this has allowed the generation of summaries using standard time periods for the entire coast, a major advance since several time periods are in use by the various agencies.

The system for handling the data (merging, error checking, report generation, etc.) has been streamlined by developing user-friendly menu options. To date, the major thrust of the software development has been to increase efficiency within the RMPC. However, this may ultimately lead to on-line access by end-users of the data. Data transmission to the RMPC computer by telecommunications is now possible.

2. Publications

A) Mark List

The Mark List is published annually in March and provides a listing of salmon and steelhead fin marks (other than the Adipose + CWT) which are used for studies not requiring ocean recovery. The report is updated each year and includes fin mark usage from 1972 onward. While not directly related to CWT studies, the document provides necessary coordination of the limited number of fin marks available to agencies for marking.

B) Pacific Salmonid Coded Wire Tag Release Report

The CWT Release Report is published annually in March and documents CWT applications for all Pacific Coast salmon and steelhead studies. To provide a more usable product and to allow corrections, the annual report has been published in modular form and as a cumulative report which includes releases during the current reporting year and all previous releases back to 1971. As a result, it is complete in itself and contains the most accurate data available.

The CWT Release Report contains complete summaries of the operational procedures of the Mark Committee and the current regional agreements on use of coded wire tags and fin marks because of their importance for regional coordination in all CWT studies.

A mid-year release report also is distributed to tag recovery agencies in August. The report contains only those tag codes released from January to July of the current reporting year. The information is used by tag recovery labs to verify new tag codes recovered from early returning "jacks".

C) Pacific Salmonid Coded Wire Tag Recovery Report

The annual CWT recovery report consists of three sections. The first section contains catch and sampling statistics which are used to provide the expansion factors used to estimate total tag recoveries. The second section contains both the observed and the estimated tag recoveries, summarized by Agency, Fishery, and Area strata over two week intervals. The final section provides a seasonal summary of all observed and estimated tag recoveries in each of the major fisheries.

PMFC's Salmon and Steelhead Committee established that the recovery agencies should report tag recoveries to the RMPC within six months of the end of the preceding year in order that the data might be processed and distributed promptly. Unfortunately, the recovery agencies have never met this goal, primarily because of problems experienced in obtaining finalized catch statistics from fish tickets and dealers. As a result, publication of the recovery reports has lagged far behind the expected goals. At the time of this proposal (January, 1984), the 1977, 1978, and 1979 recovery reports have been distributed (with the latter two years lacking California data).

Substantial progress was made in 1983 by all agencies in eliminating problems that have created the backlog of recovery data. Alaska Department of Fish and Wildlife, for example, has centralized all tag recovery work in the Juneau office and hired a programmer to concentrate attention on data processing programs. Oregon Department of Fish and Wildlife likewise has hired new personnel with specific responsibilities of processing recovery data. California

Department of Fish and Game, with assistance from PMFC, has revamped the analysis of CDFG tag recoveries and is within one month of completing the 1978 and 1979 data sets. In addition, CDFG has stipulated it will complete the 1980, 1981, and 1982 data sets by July, 1984.

Given this current rate of progress by all agencies, the 1980, 1981, and 1982 (most if not all) recovery reports will be published by the RMPC in 1984. Therefore, the States are expected to be nearly current by the first year (1985) of this proposal period.

3. Regional Coordination

A) Mark Meetings

Regional coordination between the tag releasing agencies (and also the fin marking agencies) is provided through the annual "Mark Meetings" which are held in January or February. At this time, regional agreements on marking are updated and fin mark requests are reviewed and approved. In addition, the Mark Committee provides guidance to the Regional Mark Coordinator for dealing with changing data needs of the user community.

B) Coastwide CWT Workshops

Regional coordination efforts also have emphasized the standardization of procedures used for CWT tagging and recovery programs through coastwide workshops. Four technical workshops have been held since 1977 to address the various aspects and problems of CWT studies. Participants to each of these workshops included professionals experienced in research planning, fisheries management, sampling and estimation procedures, data processing, and documentation. All fisheries agencies (including those in Canada) substantially involved with CWT releases and recoveries were represented at the workshops.

1) Workshop on Salmon Tagging, Sampling, and Data Processing
(Asilomar, California; November, 1977)

A preliminary manual on all phases of tagging and recovery was developed. Complete descriptions of agency sampling programs for tag recoveries were included. Agreement also was reached at the technical level on the necessary format for reporting tag recoveries to the RMPC.

2) Workshop on Salmon Tagging and Sampling
(Vancouver, British Columbia; November, 1978)

Statistical aspects of tagging and sampling procedures were analyzed on a regional basis.

3) Workshop on CWT Experimental Design
(Silver Creek Falls, Oregon; March 31-April 2, 1982)

The three day workshop was sponsored to identify research objectives, determine data requirements, establish experimental design criteria, and assess documentation needs for salmonid studies using coded wire tags. The main purpose was to develop regional guidelines for those stock assessment studies that require ocean recoveries.

4) Workshop on CWT Tag Recovery and Estimation Procedures
(Silver Creek Falls, Oregon; September 15-17, 1982)

This three day workshop examined CWT recovery procedures currently employed by recovery agencies and developed recommendations for regional guidelines for sampling, estimation, and documentation procedures. Special attention was given to statistical problems associated with estimating recoveries and pooling of area/time strata.

Results of the two workshops in 1982 have been compiled into a draft manual on recommended procedures for CWT studies. The manual will be distributed for use by mid 1984.

C) Coded Wire Tag Ad Hoc Committees

Two ad hoc PMFC committees have been established to deal with major problem areas jointly identified by the 1982 workshops.

1) Statistical Committee

A special "Statistical Committee" composed of statisticians and researchers was organized in 1983 to seek solutions to statistical problems which remain unresolved. These problems include the following:

a. Develop statistical procedures for estimating variance and the relative contribution of its components

b. Determine the adequacy of CWT studies for assessing stock contribution rates

c. Develop statistically valid estimation procedures for pooling time and area strata, and for handling recoveries from multiple catch area landings

d. Develop guidelines for minimum tagging and sampling sampling rates

With the assistance of the Statistical Committee, Frank de Libero (formerly a WDF employee) was contracted to work full time (18 man months) on the majority of the above problems. His progress to date includes the following:

- Recovery data for 1971-1977 chinook and 1971-1978 coho broods have been selected, edited, and loaded on the University of Washington computer.

- These data have been merged and multi-year brood reports have been generated

- Preliminary analyses of internal variance have been made for replicate tag experiments.

- The data are in the process of being restructed for loading onto "SIR", a large data base management system at the University of Washington.

2) Oversight Committee for Coastwide Tagging Plan

Workshop participants (1982 series) strongly recommended that agencies implement a coordinated regional marking program to assess the range and contribution of their hatchery and wild stocks. The intent was that key information required for fishery management would be provided by properly marking representative stocks.

With the assistance of the USFWS, $75,000 funding was provided for the study. A PMFC Oversight Committee for the coastwide tagging plan was organized in 1983 and assisted in the selection of Roy Wahle (formerly a NMFS employee) to develop the plan. At the request of the Oversight Committee, Wahle has been given the following assignments:

a. Identification of representative stocks and management units on an agency by agency basis

b. Description of current tagging needs

c. Identification of future tagging requirements

d. Identification of fishery management problems that can be met by coded wire tags or alternative marking approaches

Wahle's work will complement present efforts of the U.S.-Canada Informal Chinook and Coho Technical Committee since it deals with all stocks and not just the transboundary stocks.

TASKS TO PERFORM

A) Primary Tasks

Ongoing tasks and responsibilities of the RMPC in the areas of data management and regional coordination (see Overview and Objectives Section) will continue to be the primary objectives for FY 1985-1987. Highest priority will be given to processing backlogged tag recovery data sets as quickly as the data can be obtained from the States. However, on the basis of present progress, backlogged data is not expected to be a major problem by 1985-86.

B) Additional Tasks

The following additional recommended tasks represent significant new undertakings, and as such, may require funding from additional sources. Supplemental funding for the individual States may also be required. Coordination of these efforts will be provided by PMFC and the RMPC during this three year period. These projects may not be completed during this period, pending the need and availability of additional funds.

1. Establish New Historical CWT Recovery Data Base

At the present time, the only complete regional data base available for pre-1977 tag recoveries is that maintained by Washington Department of Fisheries (WDF) for their own internal agency needs. The RMPC's computer CWT files commences in 1977, the year that it was transferred to PMFC. Pre-1977 recovery records in the RMPC data base were obtained from the WDF data base noted above.

During the course of recent statistical work by de Libero, it became apparent that a significant number of the records in the WDF data base had been revised by WDF from that originally reported by the respective recovery agencies. The changes resulted from different pooling procedures used by WDF. For example, Alaska's nine reported management areas were pooled into four areas, thus generating new expansion factors and tag recovery estimates.

While these revisions are appropriate for WDF's internal data analysis purposes, it means that an unmodified pre-1977 regional CWT data base is unavailable. The Statistical Committee recommended that this situation be corrected. Therefore, a significant amount of effort will be devoted to establishing this historical data base. It also will require a significant effort on the part of some of the recovery agencies because their data are not in a readily accessible form.

2. Establish Merged Multi-Year CWT Data Base

An ever increasing need exists for a single multi-year CWT data base that is maintained on a large data management system and can be readily accessed by all Pacific Coast fisheries agencies. PMFC's minicomputer serves admirally well for processing up to three years of CWT recovery data, provided the data are processed on a State by State basis rather than merged into a single file. It cannot accommodate a very large data base because of inadequate memory resources and computing speed.

PMFC now has a large but incomplete CWT data base (1971-1977 chinook, 1971-1978 coho broods) on the University of Washington CYBER computer as part of Frank de Libero's statistical study of CWT studies. This data base will be transferred over to SIR, a large data management system in the near future. Upon completion of de Libero's Ph.D. Dissertation work, it is intended that that data base (derived from WDF records) will be replaced by the unrevised historical data base (see task 1 above). In addition, the data base will include all available recoveries and brood years, including hatchery, freshwater escapement, and miscellaneous recoveries. User-friendly menu options will be developed to insure wide-spread access to the data. The result will be that end-users will be able to obtain total estimated and observed tag recoveries in all fisheries on a brood year basis or on a yearly basis.

3. Development of a CWT Documentary Data File

Another key recommendation of the 1982 CWT workshops was that a regional documentary data file be developed for all CWT studies. It was envisioned that this file would include information on rearing conditions, disease history, nature of the tagged release group (i.e., production or experimental), accurate description of the fish represented by the tag code(s), etc. This would be a subset of the multi-year data base described in task 2 above.

WDF has maintained a documentary data file for their release groups for several years now. More recently, USFWS and CDFO (Canada) have independently developed similar types of data files. It is intended that a PMFC ad hoc committee be organized to review agency formats and use the information and experience derived therefrom to develop a regional documentary data file.

4. Pacific Salmon Tagging and Sampling Manual

The draft manual on salmon tagging and sampling will be published in 1984. However, statistical work by de Libero and ongoing work by the Statistical Committee will be added to the manual as new or revised chapters as the information becomes available. The manual will be published in modular form (loose leaf binders) to accommodate periodic updates.

Northwest Indian Fisheries Commission

February 17, 1984

Mr. Ken Johnson
Pacific Marine Fisheries Commission
528 S.W. Mill Street
Portland, Oregon 97201

Dear Ken:

As per your request at the annual meeting, I would like to make the following changes to tribal hatchery names and associated release areas. I would also like to suggest another change which I believe would help agencies outside of Washington understand tribal releases. This would be to consolidate all tribal facilities within the "Boldt Case Area" (N. WA. Coast and Puget Sound) under one agency code. This would be NWI, for Northwest Indian Fisheries Commission.

Hatchery Label For Computerized Data Bases	Hatchery Name	Standard Release Waters	Region
L ELHA	Lower Elwha Hatchery	Elwha River	Strait of Juan de Fuca
CHALCR	Chalaat Creek	Hoh River & Tributaries	N. WA. Coast
LUM SP	Lummi Sea Ponds	Lummi Bay	Nooksack/Samish
LUM HA	Lummi Hatchery	S.Fk. Nooksack	Nooksack/Samish
MUCKLE	Muckleshoot Hatchery	Green River	Mid Puget Sound
NISQUA	Nisqually Hatchery	Nisqually River	S. Puget Sound
QUINLK	Quinault Lake Hatchery	Quinault Lake Humptulips River Salmon River Raft River	N. WA. Coast N. WA. Coast N. WA. Coast N. WA. Coast
RAFT R	Raft River ponds	Raft River	N. WA. Coast
SKAGIT	Skagit Ponds		Skagit

2625 parkmont lane s.w., olympia, washington 98502 phone (206) 352-8030

Hatchery Label For Computerized Data Bases	Hatchery Name	Standard Release Waters	Region
SQUPEN	Squaxin Isl Pens	Puget Sound	S. Puget Sound
SQUHAT	Squaxin Hatchery	Skookum Cr. & Elson Cr.	S. Puget Sound
STILLA	Stillaguamish Hatchery	Stillaguamish R.	Stillaguamish/ Snohomish
SUQPEN	Suquamish Pens	Puget Sound	Mid Puget Sound
SUQHAT	Suquamish Hatchery	Grovers Cr.	Mid Puget Sound
TULPEN	Tulalip Pens	Tulalip Bay	Stillaguamish/ Snohomish
TULHAT	Tulalip Hatchery	Tulalip Bay	Stillaguamish/ Snohomish
WHITSW	Whiteswan Hatchery	Yakima River	Col. R. above McNary
NILPON	Nile Ponds	Naches River	Col. R. above McNary

I hope these help.

Sincerely,

Terry E. Wright

TERRY E. WRIGHT
Fishery Biologist

TEW:sm

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PACIFIC MARINE FISHERIES COMMISSION

EXECUTIVE DIRECTOR
LAWRENCE D. SIX
TREASURER
G. L. FISHER

528 S.W. MILL STREET
PORTLAND, OREGON 97201
PHONE (503) 229-5840

17 February, 1984

Elmer E. Rasmuson, Chairman
U. S. Section, INPFC
P. O. Box 600
Anchorage, AK 99501

Dear Mr. Rasmuson:

On behalf of all Pacific Coast entities concerned with salmon and steelhead conservation and management, the Pacific Marine Fisheries Commission wishes to express sincere appreciation to INPFC for supporting the sampling of salmonids intercepted on the high seas for adipose marks and coded-wire tags. Coded-wire tag recoveries by U.S. observers and others on Japanese motherships, research vessels and groundfish vessels have provided valuable data on the distribution and range extention of North American stocks.

PMFC strongly endorses current efforts of the U.S. Section of INPFC to extend U.S. observer sampling coverage both within and beyond the U.S. FCZ in order to increase the quantity and quality of high seas salmonid data. The proposal to allow transfer incidental steelhead catch from catcher boats to the mothership for biological sampling before being discarded would increase sampling coverage for this prohibited species. It also would undoubtedly result in a substantial increase in the number of high seas steelhead sampled and tags recovered.

The proposal to place U.S. observers on motherships operating in the Bering Sea outside the U.S. FCZ would provide invaluable data on salmonid landings as well as additional tag recoveries.

PMFC's "Mark Committee", comprised of coded-wire tag coordinators for all Pacific Coast fishery agencies and Canada, met in Portland, Oregon on February 15, 1984 and unanimously adopted the following resolution in support of the U.S. Section's proposals to improve high seas CWT sampling:

> "We support the proposal of the U.S. Section of INPFC that catcher boats in the Japanese mothership fishery land their incidental catch of steelhead on the motherships to allow collection of biological data by U.S. (salmon) observers. We understand that such landings would be for biological sampling only, and that steelhead would remain a prohibited species for commercial landing. We also support the proposal of the

U.S. Section to extend U.S. observer coverage to the mothership fishery operating outside of the U.S. FCZ in the Bering Sea, in order to corroborate landings of chinook salmon and to sample the landings for coded-wire tags and other biological data."

We hope that INPFC is successful in achieving the objectives of this effort. Please advise us if we can provide additional support or information.

Sincerely,

Lawrence D. Six
Executive Director

LDS:FEC
cc: PMFC Mark Committee
PMFC Coordinators
Gordon Halsey, B.C. Marine Resources
Rob Morley, CDFO, Vancouver, B.C.
Bob McVey, NMFS
Gene Kruse, NMFS
Bill Aron, NMFS
Bud Burgner, FRI

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EXECUTIVE DIRECTOR
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G. L. FISHER

MEMORANDUM

May 24, 1984

TO : Tag Coordinators

FROM : Ken Johnson, Regional Mark Processing Center Ken

SUBJECT: Returning Tags to Releasing Agencies

At the request of the ODFW "head lab" staff, I have prepared a listing of addresses (enclosed) that should be used for returning other agencies tags for verification. While most tag coordinators prefer to have the tags sent directly to them, there are several exceptions. Oregon tags, for example, should be sent directly to the ODFW head lab in Clackamas.

Please check the list with your present mailing procedures to see if changes are needed.

JKJ:JC
Enclosure

ADDRESSES FOR RETURNING RECOVERED TAGS FOR VERIFICATION

Area/Agency	Agency Codes	Individual (+ phone no.)	Mailing Address
Alaska (+ private)	4, 31, 62, H0 H4, B0, B4	Karen Crandall (907-465-3483)	Alaska Dept. Fish & Game P.O. Box 3-2000 Juneau, AK 99802
British Columbia	2, 8, 12, H2	Sue Carruthers (604-666-6192)	Canada Dept. Fish & Oceans 1090 W. Pender St., 5th Floor Vancouver, BC V6E 2P1
Washington (WDF + Private) "Salmon"	1, 11, 13 15, 62, 63 H1	Lee Blankenship (206-753-6726)	Washington Dept. Fisheries 115 General Admin. Bldg. Olympia, WA 98504
Washington (WDG)	62	Charles Morrill (206-753-3009)	Washington Dept. Game 600 N. Capitol Way Olympia, WA 98504
Washington (NIFC Tribes)	21	Terry Wright (206-352-8030)	Northwest Indian Fisheries Comm. 2625 SW Parkmont Lane, Bldg. C Olympia, WA 98502
Oregon	7, 9, 60, 62 H0, H7	Jim Norton (503-657-2020)	Oregon Dept. Fish & Wildlife 17330 SE Evelyn Street Clackamas, OR 97015
Idaho	10	Rodney Duke (208-743-6502)	Idaho Dept. Fish & Game 1540 Warner Avenue Lewiston, ID 83501
California (+ private)	6, H6	Ron Pelzman (916-355-7095)	California Dept. Fish & Game 1701 Nimbus Road, Suite B Rancho Cordova, CA 95670
NMFS (Alaska)	3, H3	Alex Wertheimer (907-789-7231)	National Marine Fisheries Service Auke Bay Lab P.O. Box 155 Auke Bay, AK 99821
NMFS (Wash.-Col. River)	3, 23 + color + rare earth	Donn Park (206-442-7640)	National Marine Fisheries Service NW & Alaska Fisheries Center 2725 Montlake Blvd., East Seattle, WA 98112
USFWS (WA-OR-ID-CA)	5, 14, H5, B5	David Zajac (206-753-9460)	US Fish & Wildlife Service 2625 SW Parkmont Lane, Bldg. A Olympia, WA 98502
Alaska (Metlakatla)	47	Dan Romey (907-886-5111)	Metlakatla Indian Community P.O. Box 556 Metlakatla, AK 99926

MAY 25, 1984

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EXECUTIVE DIRECTOR
LAWRENCE D. SIX
TREASURER
G. L. FISHER

MEMORANDUM

May 24, 1984

TO : Tag Coordinators

FROM : Ken Johnson, Regional Mark Center

SUBJECT: Correction to "Regional Agreements on Marking"

David Zajac (USFWS) reported an error in the "Regional Agreements on Marking" (blue pages) in the CWT Release Report and Mark List that you should be aware of. It is item 1.c under the heading B. Columbia Basin Steelhead Policy on page xv of the CWT Release Report or page xiii of the Mark List. Item 1.c presently states that hatchery steelhead may be released with the adipose clip if not harvestable. This is in direct conflict with item 1.a and should instead read:

"1.c. Hatchery steelhead may be released without the adipose clip if the stock is not considered to be harvestable."

The Mark Meeting minutes were correct on this point but I somehow dropped the "out" when revising the regional agreements for publication with the CWT and fin mark data.

JKJ:JC

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TREASURER
G. L. FISHER

MEMORANDUM

May 25, 1984

TO : Recipients of 1984 Mark Meeting Minutes

FROM : Ken Johnson, Regional Mark Center Ken

SUBJECT: Revisions to Draft Minutes of 1984 Mark Meeting

Dr. Robert Burgner (FRI/UW), a member of the INPFC Committee on Biology and Research, reviewed the 1984 Mark Meeting minutes pertaining to the discussion on "Proposal for Extended Steelhead Sampling Coverage" (see Section III.B; pages 3-4) and suggested several corrections. The revisions include current estimates of steelhead interceptions (substantially lower than originally believed) and a more accurate description of the negotiations for a catch quota of chinook.

Section III.B is presented below with the respective changes noted by brackets:

B. Proposal for Extended Steelhead Sampling Coverage

Wertheimer also noted that the Japanese did agree last year to the U.S. National Section's (INPFC) proposal (supported by a 1983 Mark Committee resolution) that U.S. salmon observers on board Japanese motherships be permitted to transfer periodically to catcher boats in order to sample the incidental steelhead catch for tags and other biological data before the fish were thrown overboard. A total of 26 salmon observer trips were made in 1983 in addition to observations made by U.S. marine mammal observers positioned on some catcher boats. However, only eight steelhead were sampled, none of which were Adipose clipped.

[The estimated steelhead catch by the combined landbased and mothership gillnet fleets in the mid-1970's was about 50,000 fish per year, with most of the catch being taken by the landbased fleet. Estimated catches were substantially reduced when the eastern fishing boundary for the Japanese fleets was moved 10^{o} westward to 175^{o}E longitude. The current U.S. estimates of the mothership interceptions are an average of 3,000 steelhead for the years 1980-1983.] Given the low interception rate and poor sampling results in 1983, the U.S. Section is now requesting through INPFC that all steelhead caught by the catcher boats be transferred to the

Japanese motherships for biological and CWT sampling by U.S. observers before being discarded. This action would greatly increase the sampling coverage while still preventing steelhead from becoming a targeted species. (*See NOTE at end of this section for update on Japanese response.)

[In a related matter, western Alaska fishing industry representatives are now in the process of negotiating with Japanese salmon mothership representatives for an agreed catch quota of chinook in North Pacific and Bering Sea waters. The U.S. negotiators requested U.S. observer coverage be extended to the Japanese mothership fishery operating outside the FCZ in the Bering Sea triangle area in order to verify landings and sample for tags, scales, and other data.]

Given these developments, the Mark Committee unanimously approved the following resolution to INPFC in support of the [U.S.'s requests] for increased steelhead and chinook sampling coverage:

"We support the proposal of the U.S. Section of INPFC that catcher boats in the Japanese mothership fishery land their incidental catch of steelhead on the motherships to allow collection of biological data by U.S. (salmon) observers. We understand that such landings would be for biological sampling only, and that steelhead would remain a prohibited species for commercial landing.

We also support the proposal of the U.S. Section to extend U.S. observer coverage to the mothership fishery operating outside of the U.S. FCZ in the Bering Sea, in order to corroborate landings of chinook salmon and to sample the landings for coded-wire tags and other biological data."

***NOTE:** PMFC forwarded the resolution and supporting information on February 17 to the Chairman of the U.S. Section in order that it might be considered during INPFC's February 27 - March 2 meeting in Tokyo [of the Ad Hoc Salmon Research Coordinating Group]. This meeting has now been held and Japan has agreed to return to the motherships all steelhead caught by the catcher boats for sampling by U.S. observers. Up to 200 whole fish from each mothership fleet will be frozen for subsequent shipment to the United States for further laboratory analysis. Sampling coverage outside the U.S. FCZ was not discussed during the February 27 - March 2 meeting.

JKJ:JC

Lee - Info Copy

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EXECUTIVE DIRECTOR
LAWRENCE D. SIX
TREASURER
G. L. FISHER

May 30, 1984

TO: Tag Coordinators

FROM: Ken Johnson, Regional Mark Center Ken

SUBJECT: Call for 1985 Steelhead Finmark Requests

As you will recall from decisions made at the last Mark Meeting, steelhead finmark requests are now to be handled separately each June rather than at the Mark Meeting because of the pronounced differences in timing between steelhead and salmon life cycles. This change should markedly assist planning for steelhead marks.

Note that use of the Adipose only mark for marking production in the Columbia Basin (and elsewhere) is to be reported as well. While use of the mark in the Columbia Basin is already approved, it needs to be reported to provide regional coordination of marking activities.

Please forward the finmark requests no later than June 15. I shall be out of the office during much of July and would therefore like to distribute the requests by the last week of June.

Thanks to those of you who have already accomplished this project!

KJ:md

FIN MARK REQUEST FORM

Date submitted_____ by_____
(name) (Agency)

for addition/change in 19___Mark List pg.____or__for inclusion in next Mark List_____(check which)

Species_____

MARK	BROOD YEAR	RECOV. M-I-S	EXPECTED RELEASE SITE AND DATE	RELEASE NO. NO/LB; RUN	OBJECTIVES OF STUDY; NATURE OF EXPERIMENT; STOCKS USED; OTHER INFORMATION	AGENCY CODE

FIN MARK REQUEST FORM

Date submitted_____ by_____
(name) (Agency)

for addition/change in 19___Mark List pg.____or__for inclusion in next Mark List_____(check which)

Species_____

MARK	BROOD YEAR	RECOV. M-I-S	EXPECTED RELEASE SITE AND DATE	RELEASE NO. NO/LB; RUN	OBJECTIVES OF STUDY; NATURE OF EXPERIMENT; STOCKS USED; OTHER INFORMATION	AGENCY CODE

PACIFIC MARINE FISHERIES COMMISSION

528 S.W. MILL STREET
PORTLAND, OREGON 97201
PHONE (503) 229-5840

5 January, 1984

Eugene A. Greene, Natural Resources Director
Terry A. Luther, Fish & Wildlife Biologist
Cris E. Stainbrook, Fisheries Biologist
The Confederated Tribes of the Warm Springs
Reservation of Oregon
P. O. Box C
Warm Springs, Oregon 97761

Dear Sirs:

Thank you for your letter of December 12, 1983 outlining your concerns on the policy for marking harvestable steelhead stocks in the Columbia Basin. We and the fishery agencies believe that the policy change is a positive one which will facilitate selective angler harvest of healthy stocks while protecting weak stocks, and thus hopefully restore mixed stock sport fisheries where they have been severely restricted or eliminated. Certainly, such a policy change is not without some disadvantages. These were discussed by the agencies, but the consensus is that the benefits exceed the possible disadvantages. Therefore, your initial feelings that this is a positive step are appropriate, and we hope to alleviate the concerns listed in your letter. Our responses to your five itemized concerns are given below. In addition, this issue will be discussed at the upcoming Annual Mark Meeting on February 15. We invite you to attend this meeting.

1) We do not think it is necessary or desirable to change the Ad-CWT policy for salmon consistent with the change for steelhead. While uniformity would be nice if warranted, there are major differences between salmon and steelhead programs which must be considered. As you know, there are major coastwide fisheries for salmon necessitating extensive CWT sampling programs to determine distribution, contribution, etc. of separate management units. The adipose flag is optimum for these programs where large numbers of fish are handled. Conversely, there is no comparable coastwide sampling program for steelhead. British Columbia's commercial fisheries, Columbia River fisheries, and foreign high seas fisheries to a limited extent, are the only steelhead fisheries sampled regularly for steelhead marks. The agencies believe that the major management need for steelhead is to differentiate between harvestable and non-harvestable stocks. The adipose clip without CWT minimizes costs and mortalities in a marking program designed for selective harvest. Any confusion or loss of data should only be potential problems in the Zone 6 fishery, but the responsible recovery agencies do not expect dissimilar flags to present difficulties.

2) The Oregon Department of Fish and Wildlife has stated that they have no reservations about reviewing the choice of hatchery stocks to be marked with the tribes. You may want to deal directly with them on this matter.

3) ODFW has stated that the cost of marking in Oregon will become a routine hatchery production cost and will not necessitate any reduction in production. They expect marking costs in the future will be about 1¢ per fish.

4) According to ODFW, the non-compliance problem on the Deschutes results primarily because anglers are aware that a high proportion of unmarked fish are in fact hatchery fish. Under the new marking program, the number of marked fish will increase substantially. Furthermore, anglers are very supportive of this policy and favor protection of wild stocks, especially depressed stocks such as wild Snake River fish. Such broad angler support will result in strong peer pressure for compliance.

5) We do not know of any special monitoring plans. Columbia River fisheries and stocks are extensively monitored at the present time and are expected to be monitored in this fashion in the future.

This policy change now makes the mark policy for the Columbia Basin consistent with other areas on the coast, where the adipose is not sequestered for flagging CWTs in steelhead. I hope that this response has been helpful. I regret that you were apparently not apprised of this matter in a timely fashion. We consulted the Columbia River Inter-tribal Fish Commission (Phil Roger) but not the member tribes directly. We have put you on our mailing list to receive future material directly.

Sincerely,

J. Kenneth Johnson for

Lawrence D. Six
Executive Director

LDS:fec

cc: Mark Committee
Sam Wright
Don Swartz
Monte Richards

Springs, Oregon 97761 • 503 553-1161

December 12, 1983

Lawrence D. Six, Executive Director
Pacific Marine Fisheries Commission
528 S.W. Mill St.
Portland, OR 97201

Dear Mr. Six:

The Natural Resources Department of the Confederated Tribes of the Warm Springs Indian Reservation of Oregon have heard rumblings for several months of the possible desequestering of the adipose fin clip. This department has now received what appears to be official notification, via your memorandum of November 3, 1983, that the mark has been desequestered. Your memorandum and the accompanying letters raise several questions and issues concerning this matter.

Our initial feeling on the matter is that this policy change would be a positive step toward renewing a steelhead sports fishery on the mainstem Columbia River and tributaries that sustain hatchery and wild steelhead runs. This program, in concept at least, could help alleviate the tensions which exist over treaty harvest of steelhead. However, the implementation, enforcement and effectiveness of this program remain in doubt. We are requesting of you, or your appropriate representative, an explanation or answer to the following issues and questions.

1) The adipose fin mark has been used as a flag for CWT steelhead and salmon. If a change in flag mark is made for steelhead, would it not be appropriate to change the flag mark in salmon to the same mark? Flag marks which do not coincide may lead to more confusion in field sampling and the loss of valuable data.

2) Paragraph 2 of your memorandum indicates that the hatchery stocks to be marked and therefore considered harvestable, will be selected at each agency's discretion. While this policy change is avowed to protect weak hatchery stock in the sports fisheries, current allocation negotiations now underway may alter the application of this policy. If any expansion of selective steelhead harvest for Zone 6 fisheries arises from the negotiations, or if regulations are placed on treaty fisheries either with or without tribal consent, we will require equal participation in deciding which stocks are marked. If no extension of selective harvest regulations is made, we still request review of which hatchery stocks are fin marked.

   We feel both of these positions are consistant with recent court decisions concerning the Tribes' co-management responsibilities of Columbia River fish resources.

3) Will the cost of marking the harvestable stocks and the increased cost of clipping the left ventral flag mark be borne by available production funding, thereby resulting in a production decrease?

4) The sports harvest of steelhead in the Deschutes River has been restricted to fin marked fish for the past 5 years. In light of the intensive enforcement and sampling efforts conducted by the state of Oregon, the non-compliance with the regulation is substantial. If expanded to the mainstem Columbia River, the enforcement effort necessary to assure compliance would be astronomical. What agency(ies) would assume the cost burden of enforcement? Without a sufficient enforcement effort would the goal of the program, strict selective harvest of steelhead, be met?

5) What monitoring efforts, if any, are planned for assessing the impact of this policy change?

We will await your responses and look forward to a more timely exchange of information in the future.

Sincerely,

Eugene A. Greene

Eugene A. Greene, Natural Resources Director

Terry A. Luther, Fish & Wildlife Biologist

Cris E. Stainbrook, Fisheries Biologist