

F I N A L   A G E N D A

1983 MARK MEETING

Pacific Marine Fisheries Commission

February 1, 1983  
9:00 am - 4:00 pm

Commission Room  
Oregon Department of Fish & Wildlife  
506 S.W. Mill Street  
Portland, Oregon 97201

- I. Preliminary Business
  1. Introductions
  2. Review of agenda; call for changes, additions, etc.
- II. Report on high seas sampling program and PMFC request to INPFC to permit landing of incidental steelhead on motherships for sampling purposes. (Alex Wertheimer, NMFS-AK)
- III. Proposed changes to 1982 Regional Agreements
  1. Exemption from restriction on Ad clip use without CWT for Puget Sound, coastal Washington, and British Columbia steelhead stocks (see Attachments 1 and 2).
  2. Request to accord northwest Indian tribes voting representation on the Mark Committee (note: also recommended by participants of 1982 CWT Recovery Workshop) (see Attachment 3)
- IV. Review of RMPC CWT Recovery Report format
  1. Usefulness of "Ad - No Tag" data in regional report (see Attachment 4)
  2. Proposed escapement report section - structured by tag code rather than by fishery and areas within the fishery (see Attachment 5)
  3. Include observed with estimated recoveries in Season Summary report (see Attachment 6)
  4. Other suggested changes?
- V. Discuss objectives, style, format, etc., of Chapters I and II of the Coded Wire Tagging Manual (see Attachment 7 for summary of reviewers' comments).
  - Chapter I. Types of Marks, Regional Agreements, and Reporting Requirements
  - Chapter II. Procedures for Stock Assessment Studies(Copies of these chapters are enclosed)
- VI. Discussion of how best to implement a coordinated and comprehensive sampling program for freshwater CWT recoveries.
- VII. Alaskan proposal for surcharge on CWT purchases to assist recovery programs and the RMPC (see Attachment 8a and 8b).
- VIII. Update on CWT technology
  1. Agency reports on NWMT "tube tag detector" and the need to xray "no tag" heads
  2. Need for double reading of recovered tags
  3. Research and development report on binary tags - NW Marine Technology
  4. Update on silicon chip tag technology
- IX. Fin mark request allocations for 1983

# Memorandum •

## PACIFIC MARINE FISHERIES COMMISSION

REPRESENTING THE STATES OF  
ALASKA, CALIFORNIA, IDAHO, OREGON AND WASHINGTON

528 S.W. Mill Street, Portland, OR 97201  
phone: (503) 229-5840

TO : 1983 Mark Meeting Participants

DATE: January 14, 1983

FROM : John P. Harville, Executive Director

SUBJECT: Agenda and Discussion Documents for Feb. 1, 1983 Mark Meeting  
Commission Room, ODFW, 506 S.W. Mill Street, Portland, OR 97201



The enclosed agenda outlines a busy workday for us, starting at 9AM, Tuesday, February 1. Please review attachments and enclosures carefully in advance, so that we can move effectively over a considerable breadth of topics. Note particularly the attached letters referenced for Agenda items III.1, III.2, and VII, which we believe can be handled quickly if background documents have been read.

I have particular interest in and need for your advice regarding Agenda items IV and V, since these bear on allocation of funding and manpower resources for RMPC operations and for coordination of our regional service functions. Clearly it is time to re-examine our CWT Recovery report format (Agenda item IV) to determine if any space and time-consuming elements may be superfluous (cf. IV.1), whether significant additions or changes should be made (IV.2.-4.) etc. Ken will review these issues and questions with you.

Agenda item V relates to next steps in followup to our two 1982 CWT workshops-- on tagging procedures and experimental design (March 31-April 2), and on tag recovery and data expansion (September 15-17). Summaries of the conclusions of those workshops were mailed some time ago, and you no doubt looked them over.

The goal of those two workshops was to achieve some general agreements on experimental design, project management, and reporting as basis for production of a manual outlining those procedures as guidelines for improved coordination of our CWT operations on a coastwide basis. Doug Neeley, a mathematician/statistician and special consultant to PMFC, undertook a first-cut rewrite of Workshop results into manual form. We have sent those first-cut efforts out to ten reviewers for detailed critiques and suggestions.

Enclosed for your general review as basis for discussion under Agenda item V are the first drafts of the first two chapters of this proposed CWT Manual. Chapter I, titled Types of Marks, Regional Agreements, and Reporting Requirements, is an updated and expanded modification of materials included in an earlier document produced by PMFC in June, 1981. Chapter II is Doug Neeley's draft of March Workshop materials relating to Stock Assessment Tagging and Releases.

Please review these two documents from your perspective as a potential user and supervisor of other users, and in our discussion period for Agenda item V, advise us on such matter as:

- . potential usefulness to foster regional consistency
- . scope of materials - - any major omissions?  
(note that other chapters not yet provided will address multiple comparison tagging experiments, and recovery and data expansion programs)
- . organization
- . style
- . anything else which would help our next editing cut to produce a document of maximum usefulness

A summary of reviewers' comments on Chapter II is attached (see Attachment 7) for your perusal and assistance as you review and consider this chapter as a major component of the CWT Manual.

cc: Larry Six  
Ken Johnson

JPH:dmw

JOHN SPELLMAN  
Governor



Attachment 1

FRANK LOCKARD  
Director

STATE OF WASHINGTON  
DEPARTMENT OF GAME

600 North Capitol Way, GJ-11 • Olympia, Washington 98504 • (206) 753-5700

October 18, 1982

Dr. John P. Harville, Executive Director  
Pacific Marine Fisheries Commission  
528 S.W. Mill Street  
Portland, Oregon 97201

Dear John:

We have a problem and feel you are the best man to help us solve it. As you are aware, the adipose fin mark on salmon and steelhead has been "reserved" for a number of years by both the U.S. and Canada as the visible, external indicator of a coded-wire tagged fish. It is the only fin available on a salmon or steelhead which has a negligible regeneration rate and its removal is not detrimental to survival. However, these same unique characteristics of the adipose fin as a research tool also apply to its potential use as a valuable fishery management tool.

For steelhead resources in the Washington coastal and Puget Sound regions, we believe that the greatest long-term value of an adipose fin clip lies in its use to selectively manage the harvests of co-mingled hatchery and wild stocks. We have had to face the inevitable conclusion that these stocks simply cannot be fished at the same rate without seriously overfishing wild stocks or deliberately allowing a surplus of hatchery fish. These same stocks can provide valuable additional fishery benefits via a basic regulatory strategy allowing selective retention of fish without an adipose fin plus "catch-and-release" for those having an adipose fin.

This desirable management objective could be achieved with adipose-marked fish having coded-wire tags. However, the costs of marking and associated recovery programs would be about ten times or more than of an adipose clip alone. The adipose only marking can be done by existing hatchery personnel with only nominal local help. In some cases, this would be via volunteer help from interested sportmen's organizations. The added requirement of coded-wire tagging would make the costs prohibitive for use as a regular, line management tool. Thus, we are asking that steelhead runs in Washington coastal and Puget Sound rivers be exempted from the reservation for coded-wire tags. If exempted, we would examine each river system independently and confine the use of adipose marks to those situations offering definite potentials for increased fishery benefits. Research uses with coded-wire tags would not be precluded in this river-by-river planning process. (Note: It is my understanding that this reservation does not apply to resident trout where we have similar problems that can be solved by an adipose-only mark.)

Dr. John P. Harville  
October 18, 1982  
Page two

One would not anticipate any significant problems for other Pacific coastal resource management agencies due to this limited geographic exclusion for steelhead only. Straying outside the region in question would be negligible and there are not mixed stock U.S. marine area fisheries where sampling problems would be encountered. Our proposal might add slightly to the number of "untagged" fish which might be recovered at some future date in Canadian marine areas or the Japanese high seas net fishery.

We are well aware of the extensive steelhead research work currently underway in the Columbia River system and are not seeking an exclusion in this region at the present time. Washington is attempting (on an experimental basis) to use the deformed dorsal fin as a management tool in our 1982 regulations for the Snake River steelhead fishery. Depressed wild stocks (returning at less than escapement objectives) are being protected by requiring anglers to release adult steelhead with dorsal fins measuring more than 2-1/4 inches in height. However, we feel that this approach will probably have only limited long-term application (if at all) and is much less desirable than an adipose mark. One major negative is the requirement for measuring a fin, which in itself will cause additional handling mortalities for wild stocks. In addition, the deformed dorsal becomes most usable as a management tool when juvenile fish are crowded and stressed in their rearing environment. The deformed dorsal will not be usable at all for many of our better fish cultural situations, particularly those involving large rearing ponds.

We solicit your advice on how to proceed in this matter. This could include our participation in any forum which you might deem productive such as the PMFC Salmon and Steelhead Committee meetings. Your help is genuinely appreciated.

Sincerely,

THE DEPARTMENT OF GAME



Frank R. Lockard  
Director

FRL :mg



Province of  
British Columbia

Ministry of  
Environment

Fish and Wildlife Branch  
Parliament Buildings  
Victoria  
British Columbia  
V8V 1X4

Attachment 2

File: 1319

December 31, 1982

Dr. John P. Harville,  
Executive Director,  
Pacific Marine Fisheries Commission,  
528 S.W. Mill Street,  
Portland, Oregon.  
U.S.A. 97201

Dear John:

At the February 1, 1983 Annual Mark Meeting of P.M.F.C. we will be proposing a C.W.T. exemption for winter steelhead similar to that being proposed by Washington Department of Game. I do not know how current you are on our management program in British Columbia, but I believe that we are at the "cutting edge" of steelhead management. Of course we have been in the favorable position of both profiting from the problems encountered by agencies to the south of us and starting a steelhead management program almost from scratch.

At present all 800,000(±) steelhead smolts released in British Columbia are nose-tagged and marked by removal of the adipose fin. We have followed this policy since 1976 to evaluate both the development of our fish culture program and the time and location of stock-specific fishery interceptions. It has become clear that our winter steelhead (currently about 600,000 hatchery smolts) are not impacted significantly by the existing commercial fisheries while many of our summer run stocks are hit hard (especially Skeena, Fraser and Barkley Sound).

You may know that about five years ago we instituted wide-spread catch and release regulations in an effort to rehabilitate rapidly declining wild steelhead stocks (by regulation, a wild steelhead has a complete adipose fin). We presently have just over 100 streams designated catch and release for wild steelhead. Needless to say a substantial sales job was done with our clients! One assurance our anglers received (pertinent in this discussion) was that hatchery steelhead, as they increased in abundance, could be kept by anglers. Currently we have 12 streams with returning hatchery winter steelhead. Our entire management program for these streams, and several others not yet on line, is to maximize the

Dr. John P. Harville

-2-

December 31, 1982

harvest of hatchery fish while ensuring maintenance of the wild stock by exceptionally conservative regulations. By regulation a hatchery steelhead has a missing adipose fin and healed scar. (As an aside most of our hatchery steelhead are by policy from wild parents native to the recipient stream.).

We will propose at the Annual Mark Meeting of February 1 to:

1. Continue adipose marking all steelhead smolts,
2. Continue nose-tagging with C.W.T. all summer steelhead smolts,
3. Discontinue nose-tagging with C.W.T. all winter steelhead smolts.

Approval of this proposal will:

1. Permit us to continue the intensive management of both summer and winter steelhead sport fisheries by regulating differential harvests of hatchery and wild fish,
2. Save an annual cost of \$50,000 (1983) by not nose-tagging winter steelhead smolts from hatcheries,
3. Continue to evaluate the interception of summer steelhead in tidal net fisheries,
4. Retain the option of tagging specific lots of winter steelhead with C.W.T. for hatchery evaluation purposes.

We plan to be represented at the February meeting either by myself or Dr. Art Tautz, head of our research section. I trust we will receive serious consideration.

Sincerely yours,



D.W. Narver  
Acting Chief of Fisheries Management

DWN/jl

cc/ K. Johnson  
R.A.H. Sparrow  
A. Tautz  
D. Bailey  
D.J. Robinson  
E. Anthony  
S. Wright



# Northwest Indian Fisheries Commission

January 5, 1983

Mr. John Harville  
Executive Director  
Pacific Marine Fisheries Commission  
528 S.W. Mill Street  
Portland, Oregon 97201

Dear Mr. <sup>John</sup> Harville:

The Treaty Tribes of Puget Sound and the Washington Coast are actively involved in the management and enhancement of the Northwest salmon and steelhead resources. Tribal hatcheries now account for a significant percentage of the total hatchery contribution from Washington State. They have also become involved in the marking and tagging of a significant number of salmon and steelhead originating from these facilities.

The U.S. Fish and Wildlife Service (USF&WS) provides technical assistance to the Tribes to conduct their tagging operations, and we understand they have been representing tribal interests on the Committee on Anadromous Fish Marking and Tagging. We feel it is more appropriate for the Tribes to be directly represented on this committee, and request that an additional voting position be established for a representative of the Northwest Indian Fisheries Commission.

This request for tribal representation is consistent with recommendations of the PFMC workshop on CWT Recovery and Estimation Procedures, and is a necessity if tagging and recovery coordination is to be effective on a coastwide basis.

We trust you will give this request serious consideration at your upcoming committee meeting.

Sincerely,

*Jim*

JAMES L. HECKMAN  
Executive Director

JLH:cm

cc: Ken Johnson/USF&WS  
Tribes/Commissioners

*Represent 20 tribes  
release over 30 million  
Sal & Sts  
of which nearly  
1 million fingered  
steelhead have been represented  
by FWS.  
but tribes now  
have their own salmon*





ESCAPEMENT TO FRESHWATER - CHINOOK

Washington - 1980

STATISTICAL MONTHS

TAGCODE Period Ending Dates: Jan31 Feb29 Mar31 Apr30 May31 Jun30 Jul31 Aug31 Sep30 Oct31 Nov30 Dec31 Jan31 Feb28 Mar31 Apr30  
 Week Numbers: 1-5 6-9 10-14 15-18 19-22 23-27 28-31 32-35 36-40 41-44 45-48 49-53 54-57 58-61 62-66 67-70  
 AREA..... FISHERY TOTAL

13 09 10 WDF 75 Brood Summ Run  
 WELLS DAM HATCHERY 10 9 1  
 (9) (8) (1)

13 09 11 WDF 75 Brood Spr Run  
 COWLITZ RIVER HATCHERY 172 17 20 15 23 97  
 (158) (16) (18) (14) (21) (89)  
 KALAMA FALLS HATCHERY 1 1  
 (1) (1)  
 COWLITZ RIVER SPORT 11 28 12 8 8 9  
 (5) (7) (3) (2) (1) (1)  
 TOTAL ESTIMATED: 248 11 28 29 27 23 32 98  
 TOTAL OBSERVED: (178) (5) (7) (19) (20) (15) (22) (90)

13 09 12 WDF 75 Brood Spr Run  
 COWLITZ RIVER HATCHERY 217 31 38 21 38 90  
 (198) (28) (34) (19) (34) (83)  
 COWLITZ RIVER SPORT 9 48 24 12 9  
 (26) (4) (12) (6) (3) (1)  
 TOTAL ESTIMATED: 318 9 48 54 49 21 46 90  
 TOTAL OBSERVED: (224) (4) (12) (34) (37) (19) (35) (83)

13 09 14 WDF 75 Brood Spr Run  
 COWLITZ RIVER HATCHERY 204 17 36 16 22 112  
 (187) (16) (33) (15) (20) (103)  
 KALAMA FALLS HATCHERY 1 1  
 (1) (1)  
 COWLITZ RIVER SPORT 9 32 12 8 16  
 (19) (4) (8) (3) (2) (2)  
 LEWIS RIVER SPORT 4 4  
 (1) (1)  
 TOTAL ESTIMATED: 285 9 36 29 44 32 22 113  
 TOTAL OBSERVED: (208) (4) (9) (19) (35) (17) (20) (104)

13 11 01 WDF 75 Brood Fall Run  
 PRIEST RAPIDS HATCHERY 70 2 66 1  
 (65) (2) (62) (1)  
 WELLS DAM HATCHERY 3 3  
 (3) (3)  
 PRIEST RAPIDS SPAWN GD 195 179 16  
 (12) (11) (1)

\*Note: Recovery date represents time of sampling and not date of return to the hatchery.





CODE AGENCY BRD TOTAL  
 Period Ending Dates: Feb 4 Mar 4 Apr 1 Apr 15 Apr 29 May 13 May 27 Jun 10 Jun 24 Jul 8 Jul 22 Aug 5 Aug 19 Sep 2 Sep 16 Sep 30 Oct 14 Oct 28 Nov 11 Dec 2 Dec 31  
 Week Numbers: 1-5 6-9 10-13 14-15 16-17 18-19 20-21 22-23 24-25 26-27 28-29 30-31 32-33 34-35 36-37 38-39 40-41 42-43 44-45 46-48 49-53

AREA - SKYKOMISH

63 17 06	WDF	76	1000	293	643	11	53
TOTAL ESTIMATED		1000		293	643	11	53

AREA - DESCHUTES COMPLEX

05 34 04	FWS	76	57	57			
TOTAL ESTIMATED		57		57			

AREA - 716 BIG BEEF CREEK

11 16 17	UW	77	76	52		24	
63 16 14	WDF	76	895	518		377	
63 17 28	WDF	76	788	456		332	
63 19 30	WDF	77	489	335		154	
TOTAL ESTIMATED		2248		1361		887	

AREA - 735 LITTLE PILCHUCK CREEK

63 16 15	WDF	76	1332			1332	
63 17 29	WDF	76	503			503	
TOTAL ESTIMATED		1835				1835	

AREA - 738 MILL CREEK

63 17 30	WDF	76	197			197	
TOTAL ESTIMATED		197				197	

Attachment 5b  
 Option 2  
 Page 3 of 4

BI-WEEKLY WITH WINTER POOLING  
 Period Ending Dates: Feb 4 Mar 4 Apr 1 Apr 15 Apr 29 May 13 May 27 Jun 10 Jun 24 Jul 8 Jul 22 Aug 5 Aug 19 Sep 2 Sep 16 Sep 30 Oct 14 Oct 28 Nov 11 Dec 2 Dec 31  
 Week Numbers: 1-5 6-9 10-13 14-15 16-17 18-19 20-21 22-23 24-25 26-27 28-29 30-31 32-33 34-35 36-37 38-39 40-41 42-43 44-45 46-48 49-53

AREA - LEWIS RIVER

63 16 19	WDF 77	13	13
		(2)	(2)
63 17 19	WDF 76	27	7 20
		(4)	(1) (3)
63 17 48	WDF 77	7	7
		(1)	(1)
H1 01 01	WDF 77	7	7
		(1)	(1)
TOTAL ESTIMATED		258	64
TOTAL OBSERVED		(32)	(3) (1) (17) (11)

AREA - WASHOUGAL

63 16 41	WDF 76	33	33
		(4)	(4)
TOTAL ESTIMATED		33	33
TOTAL OBSERVED		(4)	(4)

AREA - KLICKITAT

63 16 05	WDF 76	34	34
		(1)	(1)
TOTAL ESTIMATED		34	34
TOTAL OBSERVED		(1)	(1)

AREA - PRIEST RAPIDS

Ad - no tag		112	32 80
		(7)	(2) (5)
13 07 13	WDF 75	32	32
		(2)	(2)
13 11 01	WDF 75	32	16 16
		(2)	(1) (1)
13 12 02	WDF 75	32	32
		(2)	(2)
TOTAL ESTIMATED		207	48 160
TOTAL OBSERVED		(13)	(3) (10)

Attachment 5b  
 Option 2  
 Page 4 of 4

COASTWIDE SUMMARY OF ESTIMATED NUMBERS OF TAGS IN THE CATCH FOR 1977

CHINOOK

TAG CODE	AGCY YEAR	BROOD HATCHERY OR TAGGING SITE	RELEASE SITE	# TAGGED RELEASED	CAL		ORE		COLR		WASH		P.S.		WASH		B.C.		B.C.		ALSK		
					TOTAL	SPRT	TRLL	SPRT	TRLL	SPRT	TRLL	NET	SPRT	TRLL	NET	SPRT	TRLL	NET	SPRT	TRLL	NET	SPRT	TRLL
1 02 06	UW 74	COLL FISHERIES	PORTAGE BAY	15,771	146	-	-	-	-	-	6	8	77	15	-	NA	35	5	-	-	-	-	-
1 02 07	UW 74	COLL FISHERIES	PORTAGE BAY	12,168	35	-	-	-	-	4	-	-	19	5	-	NA	4	3	-	-	-	-	-
1 02 08	UW 74	COLL FISHERIES	PORTAGE BAY	10,691	25	-	-	-	-	-	-	-	16	9	-	NA	-	-	-	-	-	-	-
1 02 09	UW 74	COLL FISHERIES	PORTAGE BAY	16,596	56	-	-	-	-	-	-	3	41	4	-	NA	8	-	-	-	-	-	-
1 02 11	UW 75	COLL FISHERIES	PORTAGE BAY	24,397	212	-	-	-	-	-	-	-	161	8	-	NA	-	43	-	-	-	-	-
1 02 12	UW 75	COLL FISHERIES	PORTAGE BAY	30,028	268	-	-	-	-	-	-	-	151	61	-	NA	-	56	-	-	-	-	-
1 02 13	UW 75	COLL FISHERIES	PORTAGE BAY	27,848	231	-	-	-	-	-	-	-	153	69	-	NA	2	7	-	-	-	-	-
1 02 14	UW 75	COLL FISHERIES	PORTAGE BAY	23,797	342	-	-	-	-	-	-	-	265	27	-	NA	-	50	-	-	-	-	-
1 03 01	UW 75	COLL FISHERIES	PORTAGE BAY	18,480	175	-	-	-	-	-	-	-	104	42	-	NA	-	29	-	-	-	-	-
1 03 02	UW 75	COLL FISHERIES	PORTAGE BAY	18,065	283	-	-	-	-	-	-	-	179	67	-	NA	2	35	-	-	-	-	-
1 03 01	WDF 73	KALAMA FALLS	KALAMA R	19,396	232	-	-	5	-	46	46	64	-	-	12	NA	58	-	-	-	-	1	
1 03 04	WDF 74	SAMISH	FRIDAY CR	72,493	798	-	-	-	-	-	16	8	185	247	5	NA	186	151	-	-	-	26	
1 03 08	WDF 73	SKAGIT R (W)	SKAGIT R	2,258	58	-	-	-	-	-	-	-	13	5	-	NA	9	5	-	-	-	-	
1 03 09	WDF 74	SKAGIT R (W)	SKAGIT R	2,011	8	-	-	3	-	-	-	-	-	-	-	NA	5	-	-	-	-	-	
1 03 13	WDF 75	SKAGIT R (W)	SKAGIT R	229	8	-	-	-	-	-	-	-	-	-	-	NA	8	-	-	-	-	-	
1 02 05	WDF 74	DESCHUTES	CAPITOL LK	19,704	603	-	-	-	-	-	4	-	536	44	-	NA	7	12	-	-	-	-	
1 02 06	WDF 74	DESCHUTES	CAPITOL LK	19,801	814	-	-	-	-	-	-	-	772	32	-	NA	2	8	-	-	-	-	
1 02 08	WDF 74	MINTER CREEK	WHITE R	8,285	96	-	-	-	-	-	-	-	59	27	-	NA	10	-	-	-	-	-	
1 02 09	WDF 74	HOOD CANAL	FINCH CR	17,990	194	-	-	-	-	-	-	-	139	32	-	NA	15	8	-	-	-	-	
1 02 15	WDF 74	NOOKSACK	KENDALL CR	75,761	933	-	-	-	-	-	5	7	179	361	-	NA	278	101	-	-	-	2	
1 03 01	WDF 74	SKAGIT	SAMISH R	76,383	72	-	-	-	-	-	-	-	-	9	-	NA	38	25	-	-	-	-	
1 03 02	WDF 75	NOOKSACK	KENDALL CR	72,842	154	-	-	-	-	-	-	-	85	17	-	NA	2	50	-	-	-	-	
1 03 03	WDF 74	GEORGE ADAMS	PURDY CR	70,315	334	-	-	-	-	5	13	3	142	37	-	NA	106	28	-	-	-	-	
1 03 04	WDF 75	RINGOLD	SPRINGS CR	72,771	74	-	-	-	-	27	43	4	-	-	-	NA	-	-	-	-	-	-	
1 03 05	WDF 74	SIMPSON	BINGHAM CR	45,568	59	-	-	-	-	-	12	-	3	-	-	NA	28	13	-	-	-	-	
1 03 06	WDF 74	SKAGIT R (W)	SKAGIT R	1,476	10	-	-	-	-	-	10	-	-	-	-	NA	-	-	-	-	-	-	
1 03 07	WDF 74	SKAGIT R (W)	SKAGIT R	5,391	21	-	-	-	-	-	-	-	-	-	-	NA	10	11	-	-	-	-	
1 03 08	WDF 74	SKAGIT R (W)	SKAGIT R	7,227	11	-	-	-	-	-	-	-	-	-	-	NA	-	11	-	-	-	-	
1 03 09	WDF 74	SKAGIT R (W)	SKAGIT R	5,548	2	-	-	-	-	-	-	-	-	2	-	NA	-	-	-	-	-	-	
1 03 12	WDF 74	SKAGIT R (W)	SKAGIT R	2,261	5	-	-	-	-	-	-	-	5	-	-	NA	-	-	-	-	-	-	
1 03 13	WDF 74	SKAGIT R (W)	SKAGIT R	2,261	13	-	-	-	-	-	-	-	4	-	-	NA	-	-	-	-	-	-	
1 04 01	WDF 74	DESCHUTES	CAPITOL LK	9,615	347	-	-	-	13	-	-	-	293	25	-	NA	6	10	-	-	-	-	
1 04 02	WDF 74	GRAYS R	W FK GRAYS R	5,367	226	-	-	10	37	3	76	72	-	-	-	NA	23	5	-	-	-	-	
1 04 03	WDF 74	COWLITZ	COWLITZ R	17,643	122	-	-	-	-	-	99	4	3	3	-	NA	10	3	-	-	-	-	
1 04 04	WDF 74	COWLITZ	COWLITZ R	15,382	162	-	-	34	-	8	91	7	-	-	-	NA	11	11	-	-	-	-	
1 04 05	WDF 74	COWLITZ	COWLITZ R	18,070	178	-	-	4	-	-	133	8	4	-	-	NA	29	7	-	-	-	-	
1 04 06	WDF 74	COWLITZ	COWLITZ R	17,540	116	-	-	-	3	8	81	8	5	-	-	NA	7	4	-	-	-	-	
1 04 07	WDF 74	COWLITZ	COWLITZ R	17,185	203	-	-	29	2	11	120	15	-	-	-	NA	13	13	-	-	-	-	
1 04 08	WDF 74	COWLITZ	COWLITZ R	15,903	221	-	-	29	5	13	127	12	-	-	-	NA	37	3	-	-	-	-	
1 04 09	WDF 74	COWLITZ	COWLITZ R	21,110	269	-	-	-	-	5	163	16	8	10	-	NA	52	10	-	-	-	-	
1 04 10	WDF 74	COWLITZ	COWLITZ R	18,149	265	-	-	23	-	5	147	12	-	-	-	NA	47	31	-	-	-	-	
1 05 05	WDF 74	KALAMA FALLS	KALAMA R	30,060	20	-	-	-	-	4	10	-	-	-	-	NA	3	3	-	-	-	-	
1 05 06	WDF 74	KALAMA FALLS	KALAMA R	27,999	128	-	-	26	5	-	30	16	-	3	-	NA	44	4	-	-	-	4	
1 05 11	WDF 74	WELLS	COLUMBIA R	118,416	60	-	-	11	-	-	4	-	-	-	-	NA	35	10	-	-	-	-	

SUMMARY OF REVIEWERS' COMMENTS  
ON  
CHAPTER II. "PROCEDURES FOR STOCK ASSESSMENT STUDIES"

I. Reviewers

Reviews were received from the following persons:

Steve Cramer (ODFW)	- Biostatistician
Frank de Libero (WDF)	- Statistician
Michael Eames (WDF)	- Statistician
Ken Hall (ODFW)	- Biostatistician/Tag Coordinator
Dennis Isaac (ODFW)	- Biologist/Tag Coordinator
Ted Perry (CDFO)	- Biostatistician
Alex Wertheimer (NMFS-AK)	- Biologist

While the following comments are from the review of Chapter II, essentially the same comments and recommendations were advanced for improvement of Chapter III, which deals with Procedures for Multiple Comparison Studies. (Note: this latter Chapter will not be covered during the Mark Meeting because of time restrictions and its large size).

II. Comments on General Content and Format

1. Most reviewers felt that the overall content of Chapter II was quite good and and that the text was generally quite readable.
2. Several reviewers, however, noted that many portions of the text were very awkward and difficult to follow because of poorly defined terms and the use of many multi-syllable words arranged abstractly.
3. One reviewer noted that the chapter appeared written for statistically inclined persons, and recommended that it should be aimed for a more general audience, i.e. administrators, fish culturists, biologists (management and research), as well as statisticians, in order to increase its utility as a regional CWT Manual.
4. Nearly all reviewers found the introductory section to be ambiguous in terms of definitions and experimental objectives. In addition, successive paragraphs are somewhat repetitive in content and should be reworked.
5. Several reviewers commented that the wide range of ideas presented in the present format has resulted in a rather abrupt reading style with little reader sense of an underlying theme. As a result, the reader is confused as to what to expect. It was suggested that this could be corrected by incorporating more summaries at the beginning of each section and adding transition sentences between ideas.
6. Many sections presented in Chapter II are repeated in Chapter III. While it was generally recognized that these chapters were designed to stand alone, reviewers felt that the redundancy was time consuming and unnecessary if the chapters are to be combined in a single CWT Manual.
7. Most reviewers found the outline scheme used to identify major and minor sections (e.g. Section D.2.a) to be very difficult when trying to find references. Page references would be more practical.



8. Chapter II gives only a very cursory treatment of the fundamental question of how to determine the number of fish that should be tagged to insure success and yet not over-tag (see Section C.2.c). Much more attention is needed here.

### III. Comments on Statistical Section D

1. Comments on the statistical material in Section D appeared to depend on the training of the reviewer. Biologists tended to be pleased that the material was provided but felt that it was unnecessarily complex and wordy. Statisticians were likewise pleased to see the inclusion of statistical procedures but generally felt that much of the material was elementary and could be easily obtained from any standard statistical book.
2. There was a general consensus that substantial work is needed on the statistical section to make it more practical, useful, and in particular, readable.
3. One statistician noted that Section D.2.a on "Estimating Covariances Between Components" was particularly valuable because the information was generally not accessible elsewhere for most biologists.
4. It was recommended that the statistical section be treated as either a separate chapter or as an appendix because of the substantial differences in content from the rest of the chapter.
5. Some statisticians reported disagreements with the formulation or application of some of the statistical equations. However, there did not appear to be a consensus of any given issue.
6. One reviewer felt that the discussion on sample size determination (Section D.5.b) was misleading since it gave the impression that only "within sample variance" need to be considered. Between year variance is ignored. The reviewer further noted that the greatest problem with CWT studies to date is that most have been designed with inappropriate determination of sample size. Hence the chapter should treat this subject fully, with several examples given from common situations, to prevent the misunderstanding that only within variance is important.
7. Reviewers found the use of lower case letter constants in the equations to be confusing. This was also true for the use of the lower case "x" as a symbol for multiplication.



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Auke Bay Laboratory  
P.O. Box 155 Auke Bay, Alaska 99821  
907 789-7231

ATTACHMENT 8A

Date : March 5, 1982

Reply to Attn. of: F/NWCx9

To : Dr. John Harville, Executive Director  
Dr. Ken Johnson, Regional Mark Coordinator  
Pacific Marine Fisheries Commission

From : Alex Wertheimer: NMFS-Alaska Tag Coordinator

*Alex Wertheimer*

Subject: Proposed surcharge on purchase of coded wire tags to be used for ocean/mainstream recoveries.

This proposal is in response to Dr. Harville's memorandum referring to various problems faced by RMPC and the tag recovery programs. A surcharge is not a new idea; Bill Heard, former NMFS-Alaska Tag Coordinator, recalls the concept being discussed at a tag coordinators' meeting several years ago. This is, perhaps, an appropriate time to reconsider a surcharge as a step towards resolving some of the problems faced by the tagging and tag recovery programs.

#### Benefits of Surcharge

1. Money is allocated for recovery at the time of tagging. Although the money would be used for recovery efforts in the year it is collected, the necessary link between tagging efforts and recovery costs would be established.
2. All groups tagging fish contribute towards recovery costs. Level of contribution is based on level of tagging, and thus potential "load" on recovery agencies. At this time, certain tagging programs such as private hatcheries, universities, NMFS-Alaska, rely on tag recovery programs for ocean recoveries but do not contribute to recovery costs.
3. Provide a stable funding base for RMPC. At a time of shrinking budgets for natural resource agencies, having a "user fee" to fund regional tag coordination and to contribute to tag recovery programs may become essential. At a tagging level of 20 million tags per year, a \$.05-.10 per tag surcharge would generate \$1-2 million dollars. RMPC current budget is less than \$100 thousand. Such a surcharge would easily fund RMPC, and provide considerable dollars to be bounced back to the recovery agencies to assist in funding their programs.

4. Provide a disincentive to unnecessary CWT/adipose clip marking. A constant complaint of recovery agencies has been the swamping of their programs with tags from experiments not requiring ocean or mainstream recoveries. A substantial increase in the cost of tagging (such as \$.05-.10 per tag) would discourage unnecessary use of CWT/adipose clip. CWTs could still be provided, free of the surcharge, for use with other fin clips, so that the technology could still be applied where numerous groups are involved but ocean recoveries are not essential.

#### Problems of Surcharge

1. Equitable allocation of amount of surcharge. Should upriver (e.g., Snake River) releases be taxed the same as a coastal hatchery, when the latter would have significantly higher tag returns? Should half-tags for use on pink salmon be subject to the same rate as tags for coho smolts?
2. Equitable allocation of an agency's "fair share" contribution to RMPC. Of the amount collected, what portion should be allocated to RMPC? How should surplus dollars be allocated to recovery agencies?
3. Distinguishing CWTs not to be used with adipose fin clips (and thus escaping the surcharge).
4. Collection of surcharge. Would Dr. Jefferts be willing to apply such a "sales tax" to tag cost, or would tag purchasing have to go through some other central entity (i.e., RMPC)?

This listing just touches on the problems that could arise from "taxing" tag users. Perhaps there are too many problems, both practical and philosophical, to such an approach; however, I feel this is an appropriate time to seriously discuss funding alternatives.

# STATE OF ALASKA

## DEPARTMENT OF FISH & GAME

ATTACHMENT 8B

JAY S. HAMMOND, Governor

State of Alaska  
Alaska Dept. of Fish & Game  
230 L. Franklin St., Rm. 301  
Juneau, Alaska 99801

PHONE:

March 10, 1982

Mr. Ken Johnson  
Regional Mark Coordinator  
Pacific Marine Fisheries Commission  
528 Mill Street  
Portland, Oregon 97201

Dear Ken:

A Mark/Tag Coordination Meeting was held in Juneau on February 11, 1982. The participants in the meeting were staff members responsible for the tagging designs and/or the CWT data reporting. They represented the three fisheries divisions of the Department, NMFS, and several private non-profit hatcheries in Southeast Alaska. The participants and the project or entity they represent were as follows:

Johnny Holland, Regional Biologist, FRED Division, ADF&G  
Dan Reed, Biometrician, FRED Division, ADF&G  
Steve Schwartz, Research Analyst, FRED Division, ADF&G  
Sam Bertoni, Senior Fish Culturist, FRED Division, ADF&G  
Ron Smith, Private Non-Profit Office, FRED Division, ADF&G  
Gary Sanders, Regional Research Supervisor, Sport Fish Division, ADF&G  
Phil Gray, Coho Research Project leader, Commercial Fish, ADF&G  
Leon Shaul, Coho Research Project, Commercial Fish, ADF&G  
Alex Wertheimer, Tag Coordinator, NMFS - Alaska  
Gary Freitag, Southern Southeast Regional Aquaculture Association  
Greg Young, Northern Southeast Regional Aquaculture Association  
Bill Davidson, Sheldon Jackson College Aquaculture Program

All participants expressed the concern that dollars invested in tagging this or any year may be later wasted if funds for sampling and tag recovery are not available when tagged adults return. The need for an assured, stable funding source was discussed. Alex Wertheimer reviewed the concepts of a "proposed surcharge on purchase of coded wire tags to be used for ocean and mainstream recoveries." Important ideas discussed were:

1. Money for recovery of coded wire tags would be allocated at time of tagging.
2. All tagging groups would contribute towards recovery costs.
3. The surcharge would fund the Regional Mark Processing Center and help to fund the sampling programs of recovery agencies.

It was noted that administrative and practical details have not been worked out for this proposal. After some discussion of the merits and the problems, administrative and philosophical, of this proposal, the group came to a consensus that they: 1) agree in concept with the surcharge proposal and 2) recommend that the surcharge, as a potential funding source for CWT recovery, be investigated further by PMFC.

It probably should be noted that the people participating in this meeting are not policy spokesmen for the entities they work for but, are for the most part, tagging project leaders and designers concerned with the success of their individual programs.

Sincerely,

*Karen K. Crandall*

Karen Crandall  
Fisheries Biologist  
Division of Fisheries Rehabilitation,  
Enhancement and Development

cc: Meeting Participants  
Stan Moberly  
Bill Hauser

# Memorandum •

## PACIFIC MARINE FISHERIES COMMISSION

REPRESENTING THE STATES OF  
ALASKA, CALIFORNIA, IDAHO, OREGON AND WASHINGTON

528 S.W. Mill Street, Portland, OR 97201  
phone: (503) 229-5840

**TO :** Tag Coordinators; Mark Meeting  
Participants

**DATE:** April 15, 1983

**FROM :** Ken Johnson, Regional Mark Coordinator



**SUBJECT:** 1) Mark Meeting Minutes  
2) New Tag Coordinator for Washington Tribes

1) Enclosed are the minutes for the 1983 Mark Meeting. A large number of subjects were covered. Therefore, please review the minutes and forward relevant information if discrepancies are found.

2) Gary Graves, Northwest Indian Fisheries Commission, will be representing Washington coastal and Puget Sound tribes on the Mark Committee (see Minutes, Item III.B). A welcome is extended to Gary in this new responsibility.

KJ:jc

Enclosure

Northwest Indian Fisheries Commission

**R E C E I V E D**

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PACIFIC MARINE FISHERIES COMMISSION

Memorandum •

REPRESENTING THE STATES OF  
ALASKA, CALIFORNIA, IDAHO, OREGON AND WASHINGTON

528 S.W. Mill Street, Portland, OR 97201  
Phone: (503) 229-5840

TO : Committee on Anadromous Fish Marking & Tagging; DATE: December 8, 1982  
Personnel involved in Marking & Tagging

FROM : Ken Johnson, Regional Mark Coordinator

SUBJECT: Annual Mark Meeting

I. Meeting Time and Place

On the basis of a phone survey of the tag coordinators, the 1983 Mark Meeting has been scheduled as follows:

- 1) Time: 9:00am-4:00pm
- 2) Date: February 1, 1983 (Tuesday)
- 3) Site: Oregon Department of Fish & Wildlife Building  
Commissioner's Room  
526 S.W. Mill Street  
Portland, OR 97201

The meeting date was selected to minimize travel requirements for those who also wish to attend the Oregon Chapter-American Fisheries Society meeting in Corvallis, Oregon on February 2-4. The AFS meeting promises to be excellent and includes a session chaired by Ken Hall (ODFW) on coded wire tagging and related issues (February 4, 8-10am). More information may be obtained by calling Jim Newton (ODFW), President Elect of the Oregon Chapter, at (503) 296-4628.

II. Call for Agenda Items

Please forward matters that you wish placed on the agenda. I will need your input by December 30 in order to distribute the final agenda in early January.

The following items are now on the agenda:

- 1) Fin mark allocations for 1983.
- 2) Review of current mark restrictions.
- \* → 3) Voting representation for northwest Indian tribes on the Mark Committee.
- 4) Report on the high seas sampling program and PMFC's 1982 request to INPFC to permit landing of incidental steelhead on motherships for sampling purposes.

Northwest Indian Fisheries Commission  
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- 5) WDF proposal to amend current marking agreements to permit the use of the Ad clip with no CWT on Puget Sound and coastal Washington steelhead stocks. (Tag Coordinators: Further details will be forthcoming shortly).
- 6) In-depth review of manuals and reports resulting from the 1982 PMFC sponsored workshops on "Coded Wire Tagging Experimental Design" and "Coded Wire Tag Recovery and Estimation Procedures".
- 7) Update on advances in micro-tagging technology:
  - a) Binary Coded Tags - Northwest Marine Technology.
  - b) ODFW and WDF reports on use of NWMT's tube tag detector and the question of whether or not "no-tag" snouts should still be x-rayed.
  - c) Other? Please Advise.

### III. Seasons Greetings

Please accept my best wishes for a happy holiday season with your families and friends! I have enjoyed my association with you during these few past years and especially appreciate your full cooperation and assistance in moving regional tagging concerns forward. A great deal remains to be done in this area and I am confident that with your continued support and enthusiasm, we shall see much progress in 1983.

JKJ:dmw