

August 23, 2002

Coded Wire Tag Monitoring Program

ProjectID: 198201301

CWT Monitoring Program Responses to ISRP Preliminary Comments:

1. Size and Complexity of the CWT Monitoring Program

ISRP Comment: "First, let us acknowledge that this is a huge program that annual conducts a large number of activities that are essential to the Basin, and the data provided has been widely utilized over many years. However, this proposal is a huge mixing pot of activities that needs to be more clearly delineated with corresponding budgets and BPA funding."

Response: The CWT Monitoring Program is indeed both large and fairly complex because of the need to sample for tagged salmon in both commercial and recreations fisheries in the ocean and the Columbia River basin, as well as the various escapements to hatcheries and spawning grounds. Based on the ISRP review in 2000, we did attempt in the 2003 proposal to better explain how the overall program functions. This included the addition of several new figures showing sampling regions and two new flowcharts highlighting CWT sampling, CWT recovery, and data management. However, it is clear from this current ISRP review that misunderstandings continue to persist about the basic components of the program and how it all works as a single program. In addition, there remains considerable confusion on budgets, funding sources, and responsibility for the various activities. We will try to clear up these concerns in this response.

The basic structure of the CWT Monitoring Program must first be discussed to resolve several known misconceptions. This will include clarification on funding from BPA and other sources. At a later point (question #5 herein), we provide the requested flowchart and associated tables to better depict overall program structure, subprogram, tasks, budget, and funding sources.

First and foremost, the CWT Monitoring Program is not really a PSMFC program. Rather it is a joint ODFW and WDFW tag sampling and recovery program, with a small PSMFC component for data management. The overall combined program is simply administered by PSMFC at the funding level. As such, PSMFC submits the funding proposals to NWPPC, subsequent statements of work to BPA, and handles the payment of program billings. In the late 1980s, BPA requested PSMFC to accept the task of administrating the funding of the three ODFW projects and one WDFW project in order to streamline the funding process as the projects were all involved in CWT recovery efforts. Later in 1992, funding was added to assist data management activities by the Mark Center.

From an overview perspective, the CWT Monitoring Program consists of five separate projects. ODFW and WDFW each carry out a coordinated sampling effort in the Columbia River to collect CWTs from mature salmon and steelhead which are harvested in sport and commercial fisheries. Sampling is also done in escapement areas (hatchery racks and spawning grounds). ODFW splits its portion of BPA funding to also partially fund sampling the ocean fisheries for tags (3rd project). Sampled heads of tagged fish are transported to ODFW's 'head lab at Clackamas (4th project) where the CWTs are recovered and decoded. The CWT recovery and catch/sample information is then forwarded to PSMFC's Regional Mark Processing Center (fifth project) where it is validated and made available to users via the on-line 'Regional Mark Information System' (RMIS). All five projects have their own budgets and are managed independently.

It is also important to understand that WDFW's sampling program in the Columbia River is staffed by PSMFC employees that are under WDFW supervision. The transfer of WDFW employees to PSMFC's payroll occurred a number of years ago as a significant cost saving measure. PSMFC 's overhead is 15% as compared to WDFW's 23-25% rate.

2. Cost Sharing Sources

Comment: "The current proposal requests \$3 million from BPA and matches this with \$2.5 million from 26 other sources!"

Response: The \$2,508,046 figure from other sources is incorrect. Late edits were made in the proposal but the auto-calculation wasn't done a final time. A hand calculator verified that the cost sharing total in the proposal was \$2,663,890, a difference of \$155,844. In addition, WDFW found that \$474,691 in cost sharing had been omitted. The cost total is \$3,138,590.

At first glance, the cost sharing information presented in Section 8 of the proposal would indeed imply that there are 26 other sources of funding that support the CWT monitoring efforts in the Columbia Basin and Oregon's ocean fisheries. However that is simply an artifact resulting from decision to show the various sources of other funding for each of the five component projects. In actuality, there are 11 other funding sources. Many of the funding sources support two or more of the five component projects. This is shown below for projected funding in 2003.

<u>Funding</u>	<u>Ocean Sampling</u>	<u>Col. R Sampling</u>	<u>Tag Recov/Decoding</u>	<u>Data Management</u>
	<u>ODFW</u>	<u>ODFW</u>	<u>ODFW</u>	<u>PSMFC</u>
BPA	\$430,763	\$673,899 ¹	\$206,924	\$321,994 ³
PST	69,030	35,000	15,581	250,000
SFR	404,256	230,000	0	0
NMFS (Anad)	142,026	0	51,417	67,000
USACE	0	156,000	0	0
OR State	161,447	265,490	77,069	0
PSMFC	0	0	0	32,500
Miscell.	0	0	8,074	0
	<u>WDFW</u>	<u>WDFW</u>	<u>WDFW</u>	<u>WDFW</u>
BPA	0	1,356,232 ²	0	0
PST	0	63,000	0	0
WDFW	125,000	57,000	142,000	33,700
NMFS	265,000	0	0	0
WDFW/Coop	0	74,000	0	0
Pacific Corp	0	153,000	0	0
Tacoma Power	0	261,000	0	0

¹ODFW total includes \$121,211 new funding requested to purchase PIT tag detection equipment and cover additional sampling labor costs.

²WDFW total includes \$101,987 new funding requested to purchase PIT tag detection equipment and cover additional sampling labor costs.

³PSMFC's total includes \$126,774 new funding requested for a Advisory Statistician position

Total Funding by Source:

BPA (Bonneville Power Admin.) \$2,989,812

Other Sources:

PST (Pacific Salmon Treaty)	432,611
SFR (Sport Fish Restoration)	634,256
NMFS (Anadromous Fish Conservation Act)	525,443
COE (Corps of Engineers)	156,000
OR State (Oregon State general funds)	504,006
PSMFC (Pacific States Marine Fish. Comm.)	32,500
Miscell. (Miscellaneous funding sources)	8,074
WDFW (Washington Dept. Fish and Wildlife)	357,700
WDFW/Coop (WDFW/Tacoma Power/ Grant Co. PUD)	74,000
Tacoma Power	261,000
Pacific Corp	<u>153,000</u>

Total Other Funding: \$3,138,590

BPA's share of the total funding is 48.8% with the addition of the new funding requested for the Advisory Statistician position (\$126,774) and new funding for including PIT tag sampling with the CWT sampling program (ODFW+WDFW: \$223,198). It drops to 45.7% if the new funding requests (\$349,972 total) is not included.

The Pacific Salmon Treaty parties particularly benefit from these CWT data originating in the Columbia Basin. We have pursued increased PST funding support in the past but have not been successful. It is clear, however, that we need to aggressively seek additional PST funding to reduce BPA's overall share. This will be done for FY 2004 funding. Efforts will likewise be made to seek other sources of funding to maintain an equitable balance in cost sharing.

3. Recommended Integration with CBFWA's M&E Proposal (35053)

Comment: "Given the use and value of the CWT data to regional assessment and monitoring, it is appropriate that BPA funds make a significant contribution to the program, but we should ensure that the CWT effort is linked/integrated with the CBFWA M&E proposal (35033)."

Response: As noted in the ISRP review, CBFWA's proposal (35033) would introduce a much needed top-down basin-wide monitoring protocol ... "for assessing changes in stock and environmental conditions and the effectiveness of restoration and mitigation actions." The ISRP also noted in that review that "...the Coded Wire Tag Programs that are among the primary monitoring and evaluation programs for stock identification in the harvest, magnitude of harvest on various stocks, etc. should be brought under this integrated effort to catalogue, make available, critically assess, and improve systemwide monitoring and evaluation for fish and ecosystem status."

We agree fully with both statements. There is a great need to develop a comprehensive monitoring and evaluation program for the Columbia Basin. And the CWT Monitoring Program does need to be very involved because of the nature of the stock identification information. To that end, the CWT Monitoring Program will fully support the protocol as it evolves.

It is difficult, however, to project just what this support will entail at this point as the CBFWA's proposal is still in the conceptual phase and seeking funding. Assuming that funding is provided, the protocol undoubtedly will undergo much change. The issue is muddled by a similar and competing proposal sponsored by the NMFS RME Group. They argue in their review that CBFWA's proposal would largely duplicate other efforts already in place or underway. This will obviously need to be sorted out before much progress can be expected on a basin-wide protocol for monitoring and evaluation.

4. Programmatic Review Recommended

Comments: *Cited from the ISRP 2000 Review:* "The entire CWT program needs a programmatic review at regular intervals to confirm priorities and efficacy. We strongly recommend a technical/peer review to confirm the validity of the critical assumptions (e.g. current adequacy of the 20% sampling rate goal, and 30 tag recoveries per group, adequacy of using hatchery stocks as surrogates for monitoring wild stocks). Other key assumptions also need to be verified: 1) marked (CWT) fish suffer the same natural mortality as unmarked fish, and 2) marked fish do not lose their marks."

Present Review Comments: "This proposal does respond adequately to the key assumptions but the ISRP was particularly surprised that the recommended statistical advisor position has not been staffed nor the technical review reported."

4A) Response to Statistical Advisory Position not Staffed

We can appreciate the ISRP's surprise that no action was taken on filling the recommended Statistical Advisory Position. This was not done because of any disagreement with the recommendation. The reality was that we were in total agreement that an advisory statistician would greatly benefit both the tag recovery programs and the tagging programs.

Financial reality was the single factor that delayed our attempt until this year to include the new position in our 2003 proposal. For the past two years, we have been under the NWPPC's tight provincial review guidelines for funding. In brief, those guidelines consisted of no new tasks and funding increases limited to 3.4% cost of living.

Given the new guidelines of the provincial review process (i.e. think outside the box), we felt that we now have a solid chance of getting this position funded.

4B) Response to Technical Review not Done:

The explanation above for 4A applies equally well here. We were in full accord that the entire tagging and recovery program would benefit from a technical peer review. However, the conviction that funding was unavailable kept us from moving forward. In hindsight, we've recently learned that funding might have been obtainable through BPA's discretionary funds.

Our goal is to have the statistician advisory position filled and then have that individual take the lead in developing a proposal for a rigorous peer review. The individual would be expected to be heavily involved in the various analyses as well. In particular, the long time standards of the 20% sampling rate goal and obtaining 30 tag recoveries per group need to be rigorously evaluated in light of today's fisheries and rate of tag recoveries. In addition, a wide range of tagging issues need to be examined, with the goal of establishing a solid statistical framework for designing marking studies.

5. Rationale for Tagging and Recovery Rates

Comment: "The rationale for this proposal is to provide comprehensive stock assessment and hatchery production monitoring to regional management entities and all researchers. The program requires two components: tagging of representative groups of fish (by species, stock, brood year, etc.), and recovery of the tags in fisheries and spawning escapements. In the mid-1970's, a coast-wide agreement requested all recovery agencies to sample 20% of commercial salmon catches for the recovery of CWT. While this percentage was not based on any statistical principle, it has been adopted as the "standard" rate of sampling in catches. As in any mark-recapture program, however, the rates of tagging and recovery should be dependent on the objective of the program. Consequently, the ISRP has previously recommended the CWT program review the "30 observed recoveries" guideline that is quoted in the proposal. That value was determined during a period of good marine survival and well supported sampling programs."

"During periods of poor marine survival and/or reduced sampling (due to budget constraints), agencies would be well advised to increase the numbers of tags released, depending on the accuracy and precision desired in their programs."

Response: We are unaware of any current means of forecasting marine survival adequately far enough in advance to predict survival of smolts prior to release. During the spring of 2001, all indications were that marine conditions were excellent for the coho smolts going out, but the fall returns of jack coho showed a very poor survival. We agree that programs should insure that the numbers of tags per release group does need to address the needs of their program, but tagging rates should be adequate to account for the potential of poor marine survival within any given year. Current predictive methodology for adult returns of coho and chinook salmon within a given year relies largely on returns of salmon in the prior season. It is more reasonable to expect that sampling levels could be increased once marine survival issues are identified for a given year class and stock of salmon. The concept of adjusting tagging levels commensurate with marine survival expectations could be addressed within the same peer review process that is needed to review the 20% sampling rate standard and other issues.

6. Analyses and Data Collection Activities

Comment: "Further, the 'CWT program' and management through the PSMFC is now much more than simply managing the CWT program and databases. This proposal covers analyses and data collection activities that are clearly the responsibility of state or Tribal agencies but for unstated reasons now seem to be managed through this program. The ISRP recognizes that there could be reasons of coordination and efficiency involved but technical review of the CWT program becomes substantially more difficult."

Response: BPA has provided funding for the CWT Program for approximately 20 years. During this time funding has been provided for sampling and for analysis including developing stock composition estimates and run reconstruction objectives. It should be pointed out that BPA does not solely fund either of these efforts. State funding and other local funds provide additional support for sampling and data analysis. A recent review of the CWT Program by the NWPPC Staff (Coded-Wire Tag Program: Relationship to NWPPC Fish and Wildlife Program- September 1998) has resulted in support of the CWT Program as the work plan was written, which essentially is no different than the current proposal. Specifically, in that review the CWT Program was demonstrated to address multiple measures within Sections 4 through 8 of the

NWPPC Fish and Wildlife Program. These measures require not only sampling but stock composition estimates and estimates of survival; end products involving analysis of CWT data.

Since the NWPPC review, NMFS issued the 2000 FCRPS Biological Opinion which identifies additional harvest management and monitoring needs in the Reasonable and Prudent Alternative Action Items (164-168). Contained in these RPAs is the need to provide stock composition estimates in order to assess a particular fishery study or action with the goal of measuring the impacts on listed fish. Again, not just sampling, but end products involving analysis are required. The CWT Program has been identified as being critical to provide this information.

In summary, the objectives and tasks identified in the CWT work plan are developed to not only provide sampling coverage but also to provide end products to address NWPPC Fish and Wildlife Program measures and also the stock rebuilding programs identified in the 2000 FCRPS Biological opinion.

7. Regional Context of Tagging and Sampling Programs

Comment: "It is still not possible to place tagging and recovery programs of this CWT program in a Regional context. For example, we are only notified of the requests of additional tagging or existing sampling programs. How can this be examined in a technical context without a comprehensive description of the supported tagging programs and related objectives? Do the current tagging programs address all regional concerns, or are the best tagging programs being supported, are sampling programs meeting agency needs, etc.?"

Response: In a regional context the CWT Program provides critical information for these major initiatives: NWPPC Fish and Wildlife Program , 2000 FCRPS Biological Opinion, Columbia River Fish Management Plan, (mandated by federal court in US. vs. OR. decision), Mitchell Act Hatchery Evaluation, Lower Snake River Compensation Plan, Pacific Salmon Treaty, Pacific Fishery Management Council. In general the CWT Program to date has adequately provided stock assessment information to meet the needs of these management programs. However, the CWT Program has been criticized as lacking in statistical soundness, both in the areas of tagging and tag recovery. In response to ISRP recommendations, CWT Program staff has developed a proposal to hire a statistician to oversee aspects of the CWT Program including; review of tagging/marking projects, review of sampling rates, developing confidence intervals for abundance indices and assistance in developing study designs.

The importance of statistical review is becoming increasingly apparent as greater and greater precision is becoming necessary to meet management objectives required by the above programs.

8. Need for Flow Chart to Depict Program

8A) Comment: "The clarity of presentation would be dramatically enhanced by the use of a flow chart or other device to visually depict overall program structure and how subprograms fit into that structure, overall budget, etc. With so many agencies and tasks role into one program, it is not possible to advice the Council on the use of BPA funds or the technical rigor of programs funded by these resources."

Response: Per request, a flow chart has been provided. Note that the various boxes include the task numbers as listed in the 2003 funding proposal. In addition, data flow to PSMFC's Mark Center is indicated by an asterisk at the end of some headings in the boxes.

8B) Comment: "The complex of tasks outlined in this proposal must be clearly identified into sub-tasks by activity, budget, funding source, and responsibility (i.e. which agency or group). Critical linkages should be identified and comment made on whether funding of these linkages is assured, at risk, etc. Are the data involved in these linkages adequate? For example, if PMSFC is responsible for run reconstruction (through this proposal), are escapement monitoring programs adequate for this assessment method, are inter-dam loss values included, etc.?"

Response: The response to question 8A includes a flowchart for data collected by the CWT recovery project. This flowchart displays the data flow between fish sampled at the time of capture through the estimation of annual stock-specific abundance estimates. The flowchart is initiated with fishery and escapement sampling at the bottom of the chart and each subsequent step up the flowchart depends on completion of the tasks associated within the preceding box. The CWT recovery program consists of two key components that are integral to the success of this program: 1) adequate sampling rates are maintained and adequate numbers of snouts are recovered from fisheries and escapement areas and 2) adequate staff is available to compile, summarize, and analyze data collected by this project. As long as adequate funding is available to support these two components the program will continue to achieve its ultimate goal of determining stock-specific annual abundance of Columbia River salmon and steelhead.

The CWT recovery project is funded by a variety of state and federal funding sources that are relatively secure. The CWT recovery program is the cornerstone of stock assessment and fishery management programs throughout the region and therefore typically garners good support for justifiable funding requests. In recent years, state support of the program has been reduced somewhat due to budget shortfalls, especially for the WDFW. Federal funding sources have remained relatively stable and in some cases have increased; however, federal funding sources have an inherent risk associated with annual or semi-annual funding request processes.

Data collected by the CWT recovery project supports a wide variety of users. For instance, the *U. S. v. Oregon* Technical Advisory Committee (TAC) uses data collected by the CWT recovery project to reconstruct run sizes of salmon and steelhead returning to the Columbia River, including ESA-listed stocks. These run reconstruction data are ultimately used for monitoring the status of Columbia River salmonid stocks, especially those listed under the ESA. The TAC is comprised of biologist from ODFW, WDFW, IDFG, USFWS, NMFS, and the four Columbia River treaty tribes. The TAC regularly evaluates data collected by the CWT recovery project for use in performing run reconstruction analyses and consistently finds that data collected by this project is adequate for run reconstruction purposes. Additionally, the Pacific Salmon Commission depends on the CWT recovery project to provide data that is adequate for modeling impacts of ocean fisheries on listed stocks and developing annual chinook abundance estimates.

The following table provides the requested information on sub-tasks, including the activity, responsible agency, respective budget provided by BPA and other sources, and sources of other funding.

Objective/Task	Agency	BPA \$	Other \$	Source of Other \$\$
COLUMBIA RIVER SAMPLING Joint ODFW/WDFW Program (Objectives 1-2)				
1. Recover CWTs from adults returning to the Columbia R				
1a. Randomly sample salmonids landed in mainstem Columbia River non-Indian and treaty Indian commercial fisheries for the purpose of recovering CWTs.	ODFW	109,387	40,250	State, PST
	WDFW	194,665	10,000	WDFW
1b. Randomly sample salmonids landed in select area commercial fisheries occurring in Youngs Bay, Tongue Point, and Blind Slough (CEDC subcontract).	ODFW	20,000	47,250	State, PST
1c. Randomly sample salmonids landed in sport fisheries occurring in the mainstem Columbia River, including Buoy 10, and all major Washington tributaries.	ODFW	224,893	126,750	State, Wallup/Breaux
	WDFW	389,331	10,000	WDFW
1d. Randomly sample salmonids returning to escapement areas (e.g. dams, hatcheries, and natural spawning areas).	ODFW	47,833	86,750	State, USACE
	WDFW	389,331	571,000	PST, Pacific Power, Tacoma Power
2. Compile, summarize, and analyze data collected in Objective #1 for stock assessment purposes.				
2a. Estimate catches in commercial fisheries, effort and catch for sport fisheries, spawning escapements, and stock-specific passage over Bonneville Dam.	ODFW	58,618	162,700	State, Wallup/Breaux, USACE
	WDFW	74,850	0	
2b. Compile data collected in Objective #1 and provide to PSMFC for inclusion in the RMIS database.	ODFW	14,495	50,600	State, USACE
	WDFW	15,150	0	
2c. Determine age, hatchery/wild, and stock compositions for salmonids caught in sport and commercial fisheries and escapement areas.	ODFW	64,248	106,372	State, Wallup/Breaux, USACE, PST
	WDFW	55,660	15,500	WDFW
2d. Perform run reconstruction analyses for all major salmonid stocks returning to the Columbia River using data collected in Objective 1 and summarized in Objective 2.	ODFW	0	38,672	State, PST
	WDFW	29,850	10,000	WDFW
2e. Maintain historic database for the purpose of tracking stock status of all major salmonid stocks returning to the Columbia River and forecast the expected salmonid returns of all major salmonid stocks to the Columbia River in the upcoming year.	ODFW	0	18,098	State
	WDFW	24,490	8,200	WDFW
2f. PSMFC subcontract with WDFW	WDFW	79,331	0	

OCEAN CWT SAMPLING ODFW/WDFW (Objectives 3-5)				
3. Recover CWTs from chinook and coho salmon landed in the ocean commercial troll and sport fisheries.				
3a. Sample the ocean commercial troll salmon fishery at a minimum 20% of the weekly landed catch within major ocean sampling catch areas.	ODFW	203,689	83,000	NMFS, State, PST
	WDFW	0	150,000	WDFW, NMFS
3b. Sample the ocean recreational salmon fishery at a minimum of 20% of the weekly landed catch within major ocean sampling catch areas.	ODFW	154,195	485,500	NMFS, State, PST, SFR
	WDFW	0	200,000	WDFW, NMFS
4. Determine total landings and effort in the ocean commercial troll and recreational fisheries.				
4a. Estimate total commercial troll salmon harvest by species in the ocean fisheries.	ODFW	8,043	40,200	NMFS, State
	WDFW	0	7,000	WDFW
4b. Estimate total sport salmon harvest in the ocean fisheries.	ODFW	8,043	40,200	NMFS, State
	WDFW	0	8,000	WDFW
5. Data analysis and delivery: Summarize and analyze CWT data to determine the stock composition represented in the ocean salmon fisheries by species, time and area.				
5a. Upload ocean port salmon sampling data onto agency computers	ODFW	15,081	30,200	NMFS, State
	WDFW	0	8,000	WDFW
5b. Complete error check and process CWT and sampling data.	ODFW	10,445	20,900	NMFS, State
	WDFW	0	5,000	WDFW
5c. Provide stratified time/area data analysis on CWT ocean fishery recoveries, fishery effort and landings to ODFW fishery managers, PFMC, PST, CBFWA, NMFS, ESA stock status reviews, others as requested.	ODFW	30,001	60,000	NMFS, State
	WDFW	0	12,000	WDFW
5d. Produce "Oregon Ocean Salmon Fisheries Annual Report". Contribute to the PFMC annual report on ocean fisheries.	ODFW	17,797	25,205	NMFS, State, PST, SFR
CLACKAMAS / OLYMPIA CWT TAG RECOVERY LABS ODFW/WDFW (Objective 6)				
6. Process fish heads containing CWTs and deliver CWT recovery data.				
6a. Extract and decode CWTs from fish heads retrieved at collection sites.	ODFW	137,949	101,427	State, NMFS Anad, PST
	WDFW	0	120,000	WDFW
6b. Verify and report CWT recovery data to ODFW's data management operations, and to PSMFC's RMIS system.	ODFW	68,975	50,714	State, NMFS Anad, PST
	WDFW	0	22,000	WDFW

PSMFC REGIONAL MARK PROCESSING CENTER: (Obj. #7)				
7. PSMFC will maintain a regional CWT database, and provide regional coordination of marking programs.				
7a. Maintain and upgrade the regional database for all CWT releases and recoveries, including data from ODFW, WDFW and USFWS.	PSMFC	78,088	120,300	PST, NMFS Anad, PSMFC
7b. Maintain and upgrade PSMFC's on-line "Regional Mark Information System" (RMIS) to facilitate on-line user retrieval of regional CWT release, recovery, and catch/sample data.	PSMFC	97,610	140,325	PST, NMFS Anad, PSMFC
7c. The Mark Center staff assists in regional coordination of fin marking and CWT data exchange standards.	PSMFC	19,522	86,875	PST, NMFS Anad, PSMFC
NEW TASKS (Objectives 8 and 9)				
8. Modify regional CWT sampling program to also wand fish for PIT tags.				
8a. Buy PIT tag detection equipment, modify handheld data entry machine software to accept PIT data.	ODFW	43,032	0	
	WDFW	52,350	0	
8b. Recover PIT tags from salmonids landed in Columbia R fisheries areas sampled for CWT recovery purposes through the CWT recovery program.	ODFW	45,428	0	
	WDFW	45,066	0	
8c. Compile and error check PIT tag data for accuracy and transfer to PSMFC for inclusion in the PITagis database	ODFW	32,751	9,048	State
	WDFW	4,571	0	
9. Establish a PSMFC based Advisory Position in Statistics to provide on-going support for marking/recovery programs.				
9a. Provide statistical consulting on CWT tagging studies and CWT sampling programs to improve the quality of data.	PSMFC	63,387	0	
9b. Provide assistance to the Pacific Salmon Commission and other agencies in developing a more robust statistical framework for CWT marking studies.	PSMFC	63,387	0	

9. Are Current Tagging Levels Appropriate?

Comment: "Are the current tag allocations appropriate to meet the needs of Regional managers and the recovery priorities of the ESA stocks? In your opinion, how should this be assessed and presented for technical review?"

Response: The most recent reviews of the CWT tagging program were conducted during the 1980's. These reviews revealed deficiencies in tagging levels at some locations, which ultimately lead to the development or expansion of the three Stock Assessment - Coded Wire Tag programs that are currently funded by the BPA (project numbers

198201302, 198201304, and 198906500). Funding of these projects by the BPA resulted every salmonid stock in the Columbia River basin being CWT-marked for stock status monitoring and fishery management needs (Pers. Comm. Comprehensive Marking Strategy Group). The existing CWT marking program is currently under review by the Comprehensive Marking Strategy Group, as per RPA 174, and the scope of this review is discussed in the response to Question 12.

The existing tagging program provides an effective marking program for Columbia River basin hatchery salmonid stocks but marks only a few wild stocks. At this time hatchery stocks effectively represent wild stocks for the purposes of stock status monitoring and fishery management needs; however, increasing CWT-marking levels for wild stocks in the Columbia River basin would be beneficial for the tagging program and efforts to recover ESA-listed species

10. Are Current Recovery Programs Appropriate?

Comment: "Are the current recovery programs and associated data appropriate to meet the needs of Regional managers and the recovery priorities of the ESA stocks? In your opinion, how should this be assessed and presented for technical review?"

Response: Fisheries occurring in the Columbia River are currently managed within limits set forth by the NMFS for ESA listed species. The impacts to listed species are estimated based on CWT recoveries from fish landed in freshwater and ocean fisheries plus fish returning to escapement areas. Generally data collected by the CWT recovery project is adequate for stock status monitoring and fishery management needs, including management of species listed under the ESA.

In some instances, fishery impacts cannot be directly determined for listed stocks but surrogate hatchery stocks are effectively used to represent wild stocks. As an example, Willamette River hatchery spring chinook are used to represent Willamette River wild spring chinook. It is important to remember that this is an artifact of the CWT tagging program, not the CWT recovery program. If the tagging program was expanded to include additional wild fish, the current recovery program would be adequate for recovering tags from wild fish also.

Sample rates have been adequate in recent years, exceeding 20% in most fisheries and recovering CWTs from less abundant stocks with few tags applied. However, adoption of additional fishing seasons and implementation of selective fisheries could reduce sampling rates by this project in the future. As with the CWT tagging program, the Comprehensive Marking Strategy Group is currently reviewing the CWT recovery program, as per RPA 174 (see response to question 12).

11. What are the Additional Costs Imposed by Mass Marking?

Comment: "Given the development of mass-mark selective fisheries, what are the additional costs imposed on this program, are the electronic sampling programs and equipment adequate and how is this being monitored (e.g., verification of wand performance, checks for missed marks, sampling coverage of fisheries)?"

Response: Adoption of selective fisheries affects the costs of conducting the CWT recovery program in two ways: 1) it requires purchase of additional tag detection equipment and 2) it requires additional field staff maintain acceptable sampling rates. Equipment and personnel are adequate to sample selective fisheries that have been adopted to date; however, any additional fishery expansion resulting from selective fisheries will either require additional sampling personnel or reduce sampling rates in other fisheries to accommodate sampling of new selective fisheries. Adequate staffing levels are monitored through the achievement of the 20% sampling rate goal, which has occurred in most fisheries during recent years.

Equipment used in selective fisheries were well tested prior to use in the field. Tag detection is excellent using hand held wands with detection rates of 96-98% for chinook and +98% for coho. Selective fisheries have been in effect for coho for several years; therefore, adequate numbers of wands are currently available for coho fishery sampling needs. Wands do wear out quickly, especially under heavy use as occurs in sampling commercial fisheries, and replacement wands will need to be purchased. As was the case with fisheries sampling, increasing fishing opportunity would require additional wands to continue to achieve the 20% sampling rate goal in most fisheries.

Additional costs for sampling fisheries and escapement areas for mass-marked salmonids in the main-stem Columbia River and Washington tributaries are as follows:

- \$27,700 in salaries and benefits for field staff (6 months of technician time).
- \$0 in up front equipment costs (WDFW provided the initial 20+ detection wands for our use; however, the CWT Recovery project must purchase replacement detection wands as necessary at \$7,100 each).
- \$4,000 per year is spent on detection wand maintenance (currently covered by WDFW but these costs will shift to the CWT Recovery project as replacement detection wands are purchased by the project).

The electronic sampling program is fairly comprehensive, providing adequate coverage of the catch and escapement. The equipment, while adequate, could be considerably more durable than they are, considering the cost (\$7,100 each).

Several studies have been conducted to monitor the effectiveness of the mass-mark sampling and the equipment itself including but not limited to the following:

- Christine Mallette et.al. 1999. "Electronic Detection of Coded-Wire Tags in Adult Salmon and Steelhead (*Oncorhynchus ssp*)", ODFW Fish Stock Identification Section report..
- Ron Olson et.al. 1999. "Detection of Coded-Wire Tags in Chinook Salmon with the "Wand" Detector"
- Several reports by Geraldine Vander Hagen (WDFW.)

12. What Regional Reviews of Tagging are Underway?

Comment: "During presentations and discussion, reference was made to a Regional review of tagging programs. What other Regional reviews of tagging are being conducted, by who, and how is this proposal's staff integrated with any Regional reviews?"

Response: RPA 174 requires the development and implementation of a comprehensive marking plan for all salmon and steelhead artificial production programs in the Columbia Basin. This task was not completed as hoped by the end of 2001. However, a committee

was formed in 2001 and began the initial work on a comprehensive marking plan. This small committee, known as the "Comprehensive Marking Strategy Group" is chaired by Larry Rutter (NMFS). The other members are Bob Foster (NMFS), Tim Roth (USFWS) Mike Matylewich (CRITFC), Steve Parker (Yakama Tribe), Guy Norman (ODFW), Bill Tweite (WDFW), Sharon Kefer (IDFG), and John Skidmore (BPA contract monitor). There are plans to expand the size of the group in the future.

The group has opted to take a global look at both tagging programs and recovery programs. The rationale is that one must first know the capacity of the marking and sampling programs for providing quality stock composition information. Once the limitations are understood, work can then proceed on determining adequate tagging rates and sampling levels necessary to answer key questions on survival rates, etc.

To this end, Gary Morishima (Moriko, ltd) and Ray Beamesderfer (S.P. Cramer and Associates) have been contracted to begin an evaluation of the CWT system. This will include work on the 20% sampling agreement, numbers of recoveries needed, and necessary tagging levels. Funding is provided by BPA.

There is no basin-wide marking plan at this point. However, it is likely that additional marking and sampling will be required, and much of that expanded work will require the use of the CWT. As this plan unfolds, the tagging agencies and the recovery agencies will carry out the implementation of the plan.

No members of the CWT Monitoring Program staff are presently members of the Comprehensive Marking Strategy Group. This likely will change once the decision is made to expand the group. In the interim, the CWT Monitoring Program staff remain in 'loose contact' with key committee members.

Lastly, the contracted evaluation of the CWT system now underway would appear to provide at least a significant component of the peer review requested by the ISRP. Their final product will provide that answer. If additional work is then required, the statistician position requested herein will be asked to take the lead and organize a second peer review to focus on those areas that were not adequately covered.

13. How will Recommendations be Addressed?

Comment: "Given the importance of this program to Regional assessments and coastwide obligations for sampling, it is probable that funding for this program will continue. How will program managers ensure that recommendations that develop from this review and from past reviews are addressed?"

Response: CWT Program managers have been responsive to past recommendations of the review process and will continue to do so. For example a proposal was developed to hire a statistician for project oversight, who would work under PSMFC. This was delayed until the 2003 proposal cycle simply because of the conviction that we didn't stand a chance of any new funding in 2001 and 2002. We also agreed with the need for peer review of the project. However, initiating both of the recommendations will require BPA funding to move forward.

14. What Bottlenecks Limit the Success of this Program

Comment: "Various aspects of this proposal are dependent upon other labs or agencies to complete their sampling, decoding, etc. Are there critical bottlenecks or consistent problems in these other programs that limit the success of this program and utility of the data?"

Response: The flowchart provided in the response to Question 8A describes the data flow within the CWT recovery project. In terms of time, the most critical bottleneck would be the process of recovering and decoding CWTs. Snouts will be collected as fisheries or escapement occur but decoding of the tags, including transfer to the RMIS database, must be complete before data compilation, summarization, and analysis can be initiated. In recent years, decreased funding and increased number of snouts collected, due to large returns, have resulted in an increased duration of time passing between the collection of the snouts and the decoding of the CWTs.

A key component that determines the ultimate success of this project is snout collection in the field. This component is the basis for the success or failure of the CWT recovery program. Without an adequate number of fish sampled and snouts recovered data collected by the project becomes unreliable or increased confidence intervals around the data greatly reduce its usefulness. Currently field data collection is not limiting the success of the CWT recovery project; however, reduced funding levels or increased fishing opportunities could negatively impact this project and the data it collects.

Another potential bottleneck is that Columbia River commercial catch estimates are often not finalized until late in the run reconstruction process, therefore delaying the process. In addition, hatchery CWT data is often slow at being produced. Yakima and Umatilla tribal information for the Klickitat and Umatilla River systems is usually slowing at arriving. Finally, Washington tributary sport catch finalized estimates are years behind, making it necessary to rely on inseason catch estimates for run reconstruction purposes.

15. Budget for Statistical Consulting Position

Comment: "The budget for statistical consulting (>\$128k) seems high, how was this determined?"

Response: The budget for this position is presented below. In brief, the position was set at a GS12/6 level to ensure that a highly qualified individual could be hired. There is a great deal of work that needs to be done, and it is not a position for someone just starting out.

Perhaps the impressive was given that this was the salary for the new statistical consulting position. In actuality, it represents a GS 12/6 level with an annual salary of \$67,345. Adding in 38% benefits brings the labor costs to \$92,936. Additional one time expenses are budgeted for office furniture. The cost of a personal computer, office 'rent', etc, and indirect overhead costs brings the total to \$126,774.

CWT Statistician Position

Personnel

Salaries	
Statistician (GS 12/6 level; 12 months @ 5,612)	\$ 67,345
Benefits @ 38%	<u>25,591</u>
Total Personnel:	92,936

General Operations & Maintenance

Office Supplies	2,200
Telephone/Internet	800
Postage/Freight	100
Rents Office	3,052
Travel ¹	2,500
Data Processing Center Expenses	5,500
Photocopying	150
Personal Computer	<u>3,000</u>
Total Operations:	17,302

Total Direct Costs	110,238
Indirect Costs (@ 15%)	16,536

TOTAL BUDGET **\$126,774**

17. Purchase of CWTs

Comment: "Are Indirect cost is still being charged on the CWT purchase and if so, why?"

Response: This type of purchase is typically done by the tagging programs and thus does not apply here to the tag recovery program. However, we suspect that indirect costs likely are being charged on CWT purchases. If so, it is because of the understanding that tag lots don't qualify as capital under BPA purchasing guidelines.

Apparently PIT tags can be purchased with this exemption required. If so, BPA should advise the tagging agencies that CWT purchases are to be treated as capital. At this point, there is no such direction or guidance to our understanding.

18. \$20,000 to Sample SAFE Fisheries

Comment: "Task 1.b indicates that \$20,000 is allocated to sampling SAFE fisheries, why does this program pay for that program and are there plans to recover these costs?"

Response: The CWT recovery program was well established prior to the initiation of the SAFE project and its associated fisheries. As the SAFE project came on line, there were two paths of action that could be followed with respect to sampling the newly emerging fisheries: 1) expand the current CWT recovery program to include SAFE fisheries or 2) incorporate CWT recovery sampling in SAFE fisheries into the SAFE project. ODFW chose the former and WDFW chose the latter. This is why the Oregon budget includes

CWT recovery sampling of SAFE fisheries and the Washington budget does not included these costs.

The SAFE project is also funded by the BPA. Therefore, transferring CWT recovery costs from the CWT recovery project to the SAFE project would result in no net cost reduction to the BPA. In fact, requiring a separate sampling project for the SAFE fisheries could even increase costs due to the inefficiencies of maintaining two sampling projects instead of one. For these reasons, the ODFW is not expecting to modify the current situation of supporting sampling of SAFE fisheries through the CWT recovery project. The SAFE project does provide additional sampling personnel to the CWT recovery project during periods of high catch plus performing all onboard monitoring of SAFE fisheries.

19. Purchase of Handheld Data Loggers

Comment: "With the comments about handle-held data loggers and need for electronic sampling for CWT, is zero the correct entry for Capital in Section 8? Do the agencies purchase that equipment?"

Response: We believe that zero is the correct entry because the cost of the individual hand held data loggers units do not exceed the defined limit of \$10,000 for capital under BPA guidelines.

20. Response to RME Comments

We have reviewed the RME group's comments on the CWT Monitoring Program and find ourselves in close agreement with the ISRP's responses on all points. As such, we do not feel that it is productive to comment further.

Bonneville Power Administration FY 2003 Provincial Project Review

Mainstem & System-wide Province

First, read the help documents

Please carefully read the **Proposal Development and Selection Criteria** document, which contains information on the review process, and the **instructions** document, which provides field- and content-related help for the form. If you are missing either document, please visit <http://www.cbfwa.org/reviewforms/systemwide/default.htm> or call 503-229-0191.

Important note

- This form is to submit projects or proposals for BPA FY 2003-5 funding for Mainstem & System-wide Province only.
- This document is only available for Word97/Word2000/WordXP. Do not save down to older formats, or use in another word processor such as WordPerfect, even if it supports Word conversions. You will lose the auto-calculations, and won't be able to add or delete table rows. You may also risk not being able to re-open the document.
- Some help text is included as "hidden" comments on the data form, which is displayed by resting the mouse cursor over any yellow text (usually section headings or field names)
- Use these keystroke macros to assist you in the form. If the macros aren't available (nothing happens when you press these keys), then you need to enable macros in Word: In Word97, close the proposal, then open again and choose Enable macros if prompted. In Word2000/XP, close the proposal, choose Tools, Macro, Security, and set the security level to medium. Re-open the proposal and choose Enable macros when prompted.

To	Press
insert rows in tables	Alt-R and you'll be asked whether to insert a row at the current position or add one to the end of the table
delete rows in tables	Alt-D at the row you want to delete
calculate budget totals	Alt-C either periodically, or when you're done with the form
Spellcheck	Alt-S

Steps to complete the form

- 1) First, read the help documents (get them at <http://www.cbfwa.org/reviewforms/systemwide/default.htm>)
- 2) There are two documents to this form:
 - a) Part 1 (**blank_sys.doc**) consists of administrative and budgeting information. Your input is restricted to the grey fields.
 - b) Part 2 (**narrative.doc**) allows you to describe your project at length, including maps, tables, graphics, etc.
- 3) Save this as something other than blank_sys.doc. Preferably, use the BPA 9-digit project number, like "198906200.doc" or if your project has no project number, the first few words of the title, like "RestoreFish.doc", and a proposal number will be assigned to you by BPA upon receipt of your proposal.
- 4) Your cursor is already in the first input field, Title of Project, so start typing

- 5) Fill in all fields (gray boxes) pressing Tab to advance from one field to the next
- 6) Press Alt-C when complete to calculate totals
- 7) Save document, then open **narrative.doc** to begin Part 2.
- 8) Please print the completed documents. Part 1 prints in landscape (sideways) orientation, Part 2 in portrait (regular).
Save the documents and then **email** your forms and any attachments to fwproposals@bpa.gov. **NOTE: BPA cannot receive e-mails larger than 5 MB.** Or mail paper and diskette(s) to:

Bonneville Power Administration
Attention: Cate Hanan - KEWB-4
FY 2003 Proposals – Mainstem & System-wide Province Review
905 NE 11th Avenue
Portland, OR 97232

- 9) Monitor the <http://www.efw.bpa.gov/cgi-bin/FW/02MainstemSystemwide.cgi>.website to verify your project funding request is received and posted correctly.

**All projects must be received no later than 5:00pm PST on Monday, June 3, 2002.
No late proposals will be reviewed for FY 2003 funding.**

PART 1 of 2. Administration and Budgeting

Section 1 of 10. General administrative information

Title of project

Coded-Wire Tag Recovery Program

BPA project number 198201301

Business name of agency, institution or organization requesting funding

Pacific States Marine Fisheries Commission

Business acronym (if appropriate) PSMFC

Proposal contact person or principal investigator:

Name Kenneth Johnson
Mailing Address 45 SE 82nd Drive, Suite 100
City, ST Zip Gladstone, OR 97027-2522
Phone 503-650-5400
Fax 503-650-5426
Email address ken.johnson@psmfc.org

Manager of program authorizing this project Randy Fisher

Location of the project

Latitude	Longitude	Description
-	-	Mainstem and System-wide

Target species

Chinook, Coho, Steelhead, Sockeye

Short description

Recovery of CWTs and PitTags from salmonids sampled in the commercial/sport fisheries (Col. R and Oregon ocean), spawning grounds and hatcheries. Provides critical stock identification information required to evaluate the status of Columbia Basin stocks.

RPAs. View guidance on proposal development and selection criteria named [mainstem_systemwidecriteria.pdf](#), available as a link from the main proposal solicitation page. Indicate what, if any, ESA Biological Opinion action(s) will be met by the proposed project. Explain how and to what extent the project meets the ESA requirement.

NMFS and/or FWS Reasonable and Prudent Alternatives (RPA)

RPA Number	Description
RPA 165	<p>RPA 165 highlights the need for improved methods to estimate fishery and stock-specific management parameters such as harvest rates. Specific attention is to be focused on the transition to mass marking and selective fisheries, and on the development of new models, methods and analytical procedures.</p> <p>The CWT Recovery Program has long recognized the need for better statistical tools and models to improve the use of CWT recovery data to evaluate harvest management and stock status issues. As such, the current funding proposal includes a request for funding a new Statistician Position (sited at PSMFC). This position would provide at least half time support to the relevant Pacific Salmon Commission and Pacific Fishery Management Council technical committees that are now working on developing and implementing revised or new fishery management and stock assessment methods. This is an area where the needs are great. In addition, the available staff are typically very overloaded because of other agency required duties. As such, they are limited in their efforts with respect to improvements of statistical tools and models used to estimate stock-specific managements parameters.</p>
RPA 166	<p>RPA 166 similarly calls for the agencies to implement and/or enable changes in catch sampling programs, data recovery systems, and associated upgrades in the associated databases and data retrieval systems. This would be the second area of focus for the new Statistician Position (sited at PSMFC). Key to any advancement in these areas is a better understanding of how many fish need to be tagged and recovered to provide the necessary quality of recovery data. And in concert with providing guidance for tagging activities, the recovery agencies share a similar need for regular assistance in reviewing and upgrading their CWT sampling programs (i.e. appropriate sampling rates, etc).</p> <p>With respect to the CWT database and data retrieval system, PSMFC's Mark Center is now involved in upgrading the data formats (i.e.; reformatting the Version 3.2 data to 4.0), as well as upgrading RMIS and the system hardware for more efficient data retrieval.</p>
RPA 174	The Coded-Wire Tag (CWT) Recovery Project is an on-going data collection and data management program

RPA Number	Description
	<p>conducted by ODFW, WDFW, and PSMFC that contributes to the annual assessment of hatchery and wild salmon populations throughout the Columbia Basin. In specific, the goal of this project is to sample statistically valid numbers of chinook and coho in the Columbia River and Oregon coastal commercial and recreational fisheries and the escapement. Annually, the CWT recovery data from marked groups are used to estimate survival, catch distribution, ocean escapement, and returns to hatcheries and spawning grounds. These data also document long-term trends for evaluation of hatchery stocks as surrogates for critical wild stocks, and for comparison with other long-term data sets from throughout the west coast.</p> <p>RPA 174 calls for a comprehensive marking strategy for salmon and steelhead produced in the Columbia Basin. As this process comes to completion, the CWT Recovery program is already in place to support any new or expanded CWT marking as part of the basin wide comprehensive marking strategy. In addition, the current funding proposal calls for the existing CWT sampling program to to be modified to include sampling for PIT tags.</p>
RPA 179	<p>CWT recovery data provides key information for a wide range of stock monitoring programs underway in the Columbia Basin. CWTs will be recovered from salmonids sampled in the commercial and sport fisheries (Columbia River and Oregon Ocean), spawning grounds, and hatcheries. The CWT data and related biological information are used to develop run reconstructions, and to evaluate the status of listed salmon ESUs in the Columbia River basin.</p>
RPA 184	<p>CWTs will be recovered from salmonids sampled in the commercial and sport fisheries (Columbia River and Oregon Ocean), spawning grounds, and hatcheries. These CWT recovery data provide critical stock identification and biological information required to monitor and evaluate the impact of given hatcheries on wild/natural stocks in the Columbia Basin.</p>

<p>Information transfer</p> <p>The expected outcomes of this project are (check one) <input checked="" type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> indirect</p> <p>Data generated by this project are (check one) <input checked="" type="checkbox"/> primary <input type="checkbox"/> derived <input type="checkbox"/> indirect</p> <p>Are there restrictions on the use of the data? (check one) <input checked="" type="checkbox"/> none <input type="checkbox"/> non-commercial use only <input type="checkbox"/> educational use only <input type="checkbox"/> requires prior approval <input type="checkbox"/> sensitive <input type="checkbox"/> proprietary, no public distribution</p>	<p>Where do the data reside (check one or more)? Private/managed locally: <input type="checkbox"/> printed <input checked="" type="checkbox"/> electronic Public access: Printed at <input type="checkbox"/> BPA <input type="checkbox"/> Peer-reviewed journal or other Internet at <input type="checkbox"/> BPA <input type="checkbox"/> StreamNet <input type="checkbox"/> Fish Passage Center <input type="checkbox"/> DART or other web address www.rmis.org</p>
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In what other ways will information from this project be transferred or used?

The CWT recovery data are used to produce a variety of products and specific reports, some of which are listed below. Some of these are produced by the CWT Program. Most, however, are a secondary product of agency programs that rely on CWT data for carrying out their specific duties and responsibilities. This includes stock and hatchery evaluations, and harvest management analyses. Only general product descriptions are listed here:

- ? Age and stock composition for all Columbia River mainstem and tributary fisheries.
- ? Run reconstruction for all major salmonid stock and ESA listed substocks returning to the Columbia River.
- ? Survival and harvest rates for specific salmon stocks.
- ? Preseason forecasts for all major salmonid stocks and ESA substocks.
- ? Historical databases for Columbia River salmon stocks.
- ? Annual status reports summarizing fish runs, population status, fisheries, and escapements.

Section 2 of 10. Past accomplishments

Year	Accomplishment
2001	<p>** ANNUAL ACCOMPLISHMENTS** (Listed only for 2001 but typical for all years)</p> <p style="padding-left: 40px;">* Minor accomplishments not listed.</p>
	COLUMBIA RIVER SAMPLING PROGRAM (ODFW and WDFW):
	Randomly sampled mainstem Columbia River non-Indian and Treaty Indian commercial fisheries and the recreational fisheries at minimum 20% sampling rate.

Year	Accomplishment
	Randomly sampled Willamette and Clackamas River spring chinook sport fisheries plus fall chinook and coho returning to Oregon escapement areas below Bonneville Dam.
	Randomly sampled all major Washington tributary recreational fisheries plus spring/fall chinook and coho returning to escapement areas below McNary Dam.
	Randomly sampled fall chinook recreational fisheries and returns to the spawning grounds on the Hanford Reach on the upper Columbia River.
	Estimated total catch and effort in the mainstem Columbia River commercial and recreational fisheries (including Buoy 10), and in the spring chinook fisheries in the Willamette and Clackamas Rivers.
	Estimated spawning populations for Oregon's lower Columbia River tributaries, all major Washington tributaries, and fall chinook returning to Hanford Reach.
	Estimated returns to Oregon's lower Columbia River fall chinook hatcheries.
	Estimated stock composition of summer steelhead and brights/tule fall chinook at Bonneville Dam.
	Estimated catch and effort in all major Washington tributary recreational fisheries and in the fall chinook recreational fishery on Hanford reach.
	Determined age composition for all Columbia River basin recreational and commercial fisheries (including Washington tributary fisheries) for spring and fall chinook.
	Determined stock composition of Columbia River mainstem and Washington terminal area fisheries and hatchery/wild ratios of summer steelhead at Bonneville Dam.
	Produced run reconstruction and pre-season run size forecasts for all major salmonid stocks and ESA substocks.
2001	OREGON OCEAN SAMPLING PROGRAM (ODFW):
	Sampled Oregon's ocean commercial troll and sport salmon fisheries at a minimum goal of 20% of the weekly landed catch within major ocean sampling catch areas.
	Oregon ocean commercial troll fishery: Sampled 88,428 chinook salmon and 3,711 coho salmon out of total landings of 276,732 chinook (32%) and 9,367 coho (40%) for CWT's, and recovered snouts from 7,948 chinook and 204 coho.
	In the 2001 recreational ocean salmon season off Oregon, we examined 32,883 coho and 11,307 chinook for the presence of CWTs out of total landings of 94,346 coho and 27,200 chinook. This represents sampling rates of 35% of the coho and 42% of the chinook
	Collected 188 sport Chinook and 502 coho CWT's. Accomplished required minimum of sampling at least 20% of landed catch in both troll and sport fisheries by port of landing and month, although a few individual weeks may have dropped below 20% minimum.
	Estimated total commercial troll and sport salmon harvest by species in Oregon's ocean fisheries.
2001	CLACKAMAS CWT PROCESSING CENTER (ODFW):
	Timely processing of sampled snouts by ODFW's Clackamas lab for extraction and decoding of CWTs.

Year	Accomplishment
	A total of 35,389 snouts were processed in 2001. By sampled fishery: Hatchery returns (15,371); River Sport (3,192), Spawning Ground Surveys (695), Commercial Gillnet (5,691), Ceremonial and Subsistence (543), and Ocean Sport and Troll (9,927)
2002	A total of 9,551 snouts were processed from January through March 2002. Breakdown by sampled fishery is: Hatchery Returns (4,721), River Sport (2,523), Spawning Ground Surveys (14), Commercial Gillnet (2,127), and Ocean Sport and Troll (166)
2001	DATA MANAGEMENT ACTIVITIES (ODFW and WDFW):
	Ocean and Col R. CWT recovery data merged with catch/sample data to determine survival, distribution, harvest rates, contribution and status of wild, natural and hatchery salmon and steelhead stocks. Data reported to PSMFC's RMIS system and other users.
	Wide variety of reports produced by WDFW and ODFW, including annual status reports summarizing fish runs, population status, fisheries and escapements.
2001	REGIONAL MARK PROCESSING CENTER'S ACTIVITIES (PSMFC):
	Regional access to all CWT data (release, recovery, and catch/sample records) provided through PSMFC's on-line 'Regional Mark Information System' (http://www.rmis.org/).

Section 3 of 10. Relationships to other projects

Project #	Project title/description	Nature of relationship
198201302	Annual Stock Assessment -Coded Wire Tag Program (ODFW)	The CWT Recovery Program samples fisheries and escapement to retrieve these tagged fish returning as adults.
198201303	Annual Stock Assessment -Coded Wire Tag Program (USFWS)	The CWT Recovery Program samples fisheries and escapement to retrieve these tagged fish returning as adults.
198201304	Annual Stock Assessment -Coded Wire Tag Program (WDFW)	The CWT Recovery Program samples fisheries and escapement to retrieve these tagged fish returning as adults.
199000500	Umatilla Fish Hatchery Monitoring and Evaluation	Evaluate juvenile rearing, adult survival, stock life history, straying, fish health and sport fishing and catch contribution for salmon and steelhead reared in oxygen supplemented and standard raceways at Umatilla Hatchery
199306000	Select Area Fishery Evaluation Project	Identification of project hatchery fish in Youngs Bay fishery
199506300	Yakima/Klickitat Monitoring & Eval.	Tag coho for release in Yakima Basin and identify hatchery fish in Yakima Basin

Project #	Project title/description	Nature of relationship
199604000	Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia	Identification of hatchery fish in Wenatchee and Methow Basins
198805304	Hood River Production Program - ODFW M&E	Identification of project hatchery fish in Hood River Basin
198331900	New Marking and Monitoring Techniques for Fish	Develop, install, and evaluate PIT-tag interrogation systems and ancillary equipment to expand the capabilities of the Columbia River Basin (CRB) PIT-tag technology to meet fishery resource stakeholders needs.
199102800	Monitoring smolt migrations of wild Snake River sp/sum chinook salmon	Collect time series information to examine migrational characteristics of wild ESA-listed Snake River spring/summer chinook salmon stocks. PIT tag wild chinook salmon parr annually; and subsequently monitor as parr/smolts at stream traps and river dams.
199602000	Comparative Survival Rate Study (CSS) of Hatchery Pit Tagged Chinook & Comparative Survival Study Oversight Committee	Adult and juvenile PIT tag recovery data are analyzed to compare survival estimates for transported fish of known origin, downriver stocks, wild and hatchery transported fish and fish handled and not handled at dams.

Section 4 of 10. Estimated budget for Planning & Design phase

Task-based estimated budget

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
				<input type="checkbox"/>
Total			\$ 0	

Out year objective-based estimated 2004 - 2007 budget

Objective (1. text, 2. text...)	Starting FY	Ending FY	Estimated cost

Out year estimated budgets

	FY 2004	FY 2005	FY 2006	FY 2007
Total budget				

Section 5 of 10. Estimated budget for Construction/Implementation phase

Task-based estimated budget

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
				<input type="checkbox"/>
		Total	\$ 0	

Out year objective-based estimated 2004 - 2007 budget

Objective (1. text, 2. text...)	Starting FY	Ending FY	Estimated cost

Out year estimated budgets for construction/implementation phase

	FY 2004	FY 2005	FY 2006	FY 2007
Total budget				

Section 6 of 10. Estimated budget for Operation & Maintenance phase

Task-based estimated budget

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
				<input type="checkbox"/>
		Total	\$ 0	

Out year objective-based estimated 2004 - 2007 budget

Objective (1. text, 2. text...)	Starting FY	Ending FY	Estimated cost

Out year estimated budgets for operations & maintenance phase

	FY 2004	FY 2005	FY 2006	FY 2007
Total budget				

Section 7 of 10. Estimated budget for Monitoring & Evaluation phase

Task-based estimated budget

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
COLUMBIA BASIN CWT SAMPLING Joint ODFW/WDFW Program (Objectives 1-2)				<input type="checkbox"/>
1. Recover CWTs from adults returning to the Columbia River	a. Randomly sample salmonids landed in mainstem Columbia River non-Indian and treaty Indian commercial fisheries for the purpose of recovering CWTs.	On-going	304,052	<input type="checkbox"/>
1.	b. Randomly sample salmonids landed in select area commercial fisheries occurring in Youngs Bay, Tongue Point, and Blind Slough (CEDC subcontract).	On-going	20,000	<input checked="" type="checkbox"/>
1.	c. Randomly sample salmonids landed in sport fisheries occurring in the mainstem Columbia River, including Buoy 10, and all major Washington tributaries.	On-going	614,224	<input type="checkbox"/>
1.	d. Randomly sample salmonids returning to escapement areas (e.g. dams, hatcheries, and natural spawning areas).	On-going	437,164	<input type="checkbox"/>
2. Compile, summarize, and analyze data	a. Estimate catches in commercial	On-going	133,468	<input type="checkbox"/>

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
collected in Objective 1 for stock assessment purposes.	fisheries, effort and catch for sport fisheries, spawning escapements, and stock-specific passage over Bonneville Dam.			
2.	b. Compile data collected in Objective 1 and provide to PSMFC for inclusion in the RMIS database.	On-going	29,645	<input type="checkbox"/>
2.	c. Determine age, hatchery/wild, and stock compositions for salmonids caught in sport and commercial fisheries and returning to escapement areas.	On-going	119,908	<input type="checkbox"/>
2.	d. Perform run reconstruction analyses for all major salmonid stocks returning to the Columbia River using data collected in Objective 1 and summarized in Objective 2.	On-going	29,850	<input type="checkbox"/>
2.	e. Maintain historic database for the purpose of tracking stock status of all major salmonid stocks returning to the Columbia River and forecast the expected salmonid returns of all major salmonid stocks to the Columbia River in the upcoming year.	On-going	24,490	<input type="checkbox"/>
2.	f. PSMFC subcontract with WDFW	On-going	79,331	<input checked="" type="checkbox"/>
OCEAN CWT SAMPLING: ODFW Program (Objectives 3-5)				<input type="checkbox"/>
3. Recover CWTs from chinook and coho salmon landed in Oregon's ocean commercial troll and recreational fisheries.	a. Sample Oregon's ocean commercial troll salmon fishery at a minimum 20% of the weekly landed catch within major ocean sampling catch areas.	On-going	191,200	<input type="checkbox"/>
3.	b. Sample Oregon's ocean recreational salmon fishery at a minimum of 20% of the weekly landed catch within major	On-going	141,707	<input type="checkbox"/>

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
	ocean sampling catch areas.			
4. Determine total landings and effort in Oregon's ocean commercial troll and recreational fisheries.	a. Estimate total commercial troll salmon harvest by species in Oregon's ocean fisheries.	On-going	8,043	<input type="checkbox"/>
4.	b. Estimate total recreational salmon harvest in Oregon's ocean fisheries.	On-going	8,043	<input type="checkbox"/>
5. Data analysis and delivery: Summarize and analyze CWT data to determine the stock composition represented in Oregon ocean salmon fisheries by species, time and area.	a. Upload ocean port salmon sampling data onto ODFW mainframe computer.	On-going	15,081	<input type="checkbox"/>
5.	b. Complete error check and process CWT and sampling data.	On-going	10,445	<input type="checkbox"/>
5.	c. Provide stratified time/area data analysis on CWT ocean fishery recoveries, fishery effort and landings to ODFW fishery managers, PFMC, PST, CBFWA, NMFS, ESA stock status reviews, and others as requested.	On-going	30,001	<input type="checkbox"/>
5.	d. Produce "Oregon Ocean Salmon Fisheries Annual Report". Contribute to the PFMC annual report on ocean fisheries.	On-going	17,797	<input type="checkbox"/>
CLACKAMAS CWT TAG RECOVERY LAB: ODFW (Objective 6)				<input type="checkbox"/>
6. Process fish heads containing CWTs and deliver CWT recovery data.	a. Extract and decode CWTs from fish heads retrieved at collection sites.	On-going	135,245	<input type="checkbox"/>
6.	b. Verify and report CWT recovery data to ODFW's data management operations, and to PSMFC's RMIS system.	On-going	67,622	<input type="checkbox"/>
PSMFC REGIONAL MARK PROCESSING CENTER:				<input type="checkbox"/>

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
(Objective 7)				
7. PSMFC will maintain a regional CWT database, and provide regional coordination of marking programs.	a. Maintain and upgrade the regional database for all CWT releases and recoveries, including data from ODFW, WDFW and USFWS.	On-going	78,088	<input type="checkbox"/>
7.	b. Maintain and upgrade PSMFC's on-line "Regional Mark Information System" (RMIS) to facilitate on-line user retrieval of regional CWT release, recovery, and catch/sample data.	On-going	97,610	<input type="checkbox"/>
7.	c. The Mark Center staff assists in regional coordination of fin marking and CWT data exchange standards.	On-going	19,522	<input type="checkbox"/>
NEW TASKS (added FY 2003)				
8. Modify regional CWT sampling program to include wandering fish for PIT tags.	a. Purchase PIT tag detection equipment and modify hand held data entry machine software to accept PIT data.	On-going	95,382	<input type="checkbox"/>
8.	b. Recover PIT tags from salmonids landed in Columbia River fisheries areas currently sampled for CWT recovery purposes through the CWT recovery program.	On-going	90,494	<input type="checkbox"/>
8.	c. Compile and error check PIT tag data for accuracy and transfer to PSMFC for inclusion in the PITagis database.	On-going	37,322	<input type="checkbox"/>
9. Establish a PSMFC based Advisory Position in Statistics to provide on-going support for marking and recovery programs.	a. Provide statistical consulting on CWT tagging studies and CWT sampling programs to improve the quality of data.	On-going	63,387	<input type="checkbox"/>
9.	b. Provide assistance to the Pacific Salmon Commission and other agencies in developing a more robust statistical	On-going	63,387	<input type="checkbox"/>

Objective (1. text, 2. text...)	Task (a. text, b. text...)	Task duration in FYs	Estimated FY 03 cost	Subcontractor
	framework for CWT marking studies.			
**PSMFC administrative fee (2%) on pass-through funds		On-going	27,304	<input type="checkbox"/>
		Total	\$2,989,812	

Out year objective-based estimated 2004 - 2007 budget

Objective (1. text, 2. text...)	Starting FY	Ending FY	Estimated cost
COLUMBIA BASIN CWT SAMPLING: Joint ODFW/WDFW Program (Objectives 1-2)			
1. Recover CWTs from adults returning to the Columbia River	2004	2007	6,333,167
2. Compile, summarize, and analyze data collected in Objective 1 for stock assessment purposes.	2004	2007	1,916,984
OCEAN CWT SAMPLING: ODFW Program (Objectives 3-5)			
3. Recover CWTs from chinook and coho salmon landed in Oregon's ocean commercial troll and recreational fisheries.	2004	2007	1,431,477
4. Determine total landings and effort in Oregon's ocean commercial troll and recreational fisheries.	2004	2007	74,591
5. Data analysis and delivery: Summarize and analyze CWT data to determine the stock composition represented in Oregon ocean salmon fisheries by species, time and area.	2004	2007	340,008
CLACKAMAS CWT TAG RECOVERY LAB: ODFW (Objective 6)			
6. Process fish heads containing CWTs and deliver CWT recovery data.	2004	2007	940,701

Objective (1. text, 2. text...)	Starting FY	Ending FY	Estimated cost
PSMFC REGIONAL MARK PROCESSING CENTER: (Objective 7)			
7. PSMFC will maintain a regional CWT database, and provide regional coordination of marking programs.	2004	2007	905,253
NEW TASKS (added FY 2003)			
8. Modify regional CWT sampling program to include wandering fish for PIT tags.	2004	2007	613,893
9. Establish a PSMFC based Advisory Position in Statistics to provide on-going support for marking and recovery programs.	2004	2007	561,199

Out year estimated budgets for monitoring & evaluation phase

	FY 2004	FY 2005	FY 2006	FY 2007
Total budget	\$3,001,143	\$3,175,541	\$3,410,125	\$3,555,487

Section 8 of 10. Estimated budget summary

Itemized estimated budget

Item	Note	FY 2003
Personnel	FTE: ODFW: 19.2 WDFW: 14.2 PSMFC: 2.2 (primarily field sampling personnel)	1,412,981
Fringe benefits	ODFW (38%); WDFW (16-38%); PSMFC (38%)	519,235
Supplies, materials, non-expendable property		303,622

Travel	field sampling travel costs	179,784
Indirect costs	ODFW (23.3%); WDFW (25.2%); PSFMC (15%)	447,555
Capital acquisitions or improvements (e.g. land, buildings, major equip. over \$10,000)		0
NEPA costs		0
PIT tags @\$2.25/ea	# of tags: 0	0
Subcontractor	CEDC (\$20,000); PSMFC/WDFW (\$79,331)	99,331
Other	PSMFC administrative fee (2%) on pass-through funds	27,304
Total BPA funding request		\$2,989,812

Total estimated budget

Total FY 2003 project cost

Amount anticipated from previously committed BPA funds (carryover)

Total FY 2003 budget request

FY 2003 forecast from FY 2001

% change from forecast

Reason for change in estimated budget

Please refer to Section 9.e (Project History) for the explanation of changes in the estimated budget.

The CWT Recovery Program is a composite of five separate programs, each with its own budget and associated changes. This field only allows a few lines of text and thus is not adequate to allow the necessary explanations that are needed for understanding budget changes for each of the component programs

Reason for change in scope

The lion's share of the 24.4% increase is attributed to the addition of the two new tasks (#8- expanding the CWT sampling to include PIT tags; #9- Statistician to assist CWT community). If only considering the standard tasks, the increase represents a 9.7% increase. And most of the latter increase is associated with the need to restore basic services and supplies plus personnel lost during the last several years of limited budget increases.

Cost sharing

Organization	Item or service provided	Amount (\$)	Cash or in-kind?
ODFW - Columbia River Sampling:			cash
Sport Fish Restoration	Columbia River Sport Creel Program	165,000	cash
Sport Fish Restoration	Columbia River selective fisheries sampling	65,000	cash
Corps of Engineers	CWT marking and recovery at Bonneville Hatchery	156,000	cash
NMFS - Pacific Salmon Treaty	Columbia River commercial and sport fisheries sampling	35,000	cash
State of Oregon	Sport and commercial fisheries sampling, spawning ground surveys, hatchery sampling.	175,000	cash
State of Oregon	Fish ticket processing, data analysis, run reconstruction, supervisory duties	90,490	cash
WDFW - Columbia River Sampling:			cash
WDFW	Mass marked coho sampling assistance	40,000	cash
WDFW	CWT Recovery Project supervision	17,000	cash
WDFW	Lab CWT recovery	142,000	cash
WDFW	Data management	33,700	cash
WDFW	Buoy 10 and coastal sampling	125,000	cash
Tacoma Power	Tributary sampling	261,000	cash
NMFS	Buoy 10 and coastal sampling	265,000	cash
WDFW/Tacoma Power/Grant Co. PUD	Hatchery CWT sampling	74,000	cash
NMFS - Pacific Salmon Treaty	Fall chinook evaluation in Cedar Creek	63,000	cash
Pacific Corp.	Lewis River wild fall chinook stock assessment	153,000	cash

Organization	Item or service provided	Amount (\$)	Cash or in-kind?
ODFW-Ocean Salmon Sampling			cash
NMFS - Pacific Salmon Treaty	Pacific Salmon Treaty	69,030	cash
Anadromous Fish. Conservation Act	Ocean salmonid fishery monitor/mgnt.	142,026	cash
Sport Fish Restoration	Ocean salmonid fishery monitor/mgnt.	124,812	cash
Sport Fish Restoration	Partial ocean fishery sampling-partial help	217,620	cash
Sport Fish Restoration	Ocean sport "selective" coho fishery	61,824	cash
State of Oregon	Ocean fishery sampling-partial	161,447	cash
ODFW-Clackamas Tag Lab			cash
NMFS - Pacific Salmon Treaty	Partial funding of operations	15,581	cash
NMFS (Ocean salmon management)	Partial funding of operations	51,417	cash
State of Oregon	Supervisory and data management	77,069	cash
Miscellaneous Sources	Funding for extraction of federal and tribal tags	8,074	cash
PSMFC-Regional Mark Processing Center:			cash
USFWS - Pacific Salmon Treaty	Partial funding of operations	250,000	cash
NMFS (Anadromous Grant)	Partial funding of operations	67,000	cash
Pacific States Marine Fisheries Commission	Partial funding of operations	32,500	cash
**This listing does not include related federal and tribal hatchery and spawning ground tag recovery sampling	Examples include USFWS hatcheries (Spring Cr, Carson, Little White Salmon, Klickitat spawning grounds, Yakima River spawning grounds, and Umatilla hatchery and spawning grounds.		cash
			cash
			cash
Total cost-share		\$3,138,590	

Out year budget totals

	FY 2004	FY 2005	FY 2006	FY 2007
Planning & design phase	0	0	0	0

	FY 2004	FY 2005	FY 2006	FY 2007
Construction/impl. phase	0	0	0	0
O & M phase	0	0	0	0
M & E phase	3,001,143	3,175,541	3,410,125	3,555,487
Total budget	\$3,001,143	\$3,175,541	\$3,410,125	\$3,555,487

Other budget explanation

Part 1 of 2 complete!

Press Alt-C to calculate totals on the document. If any totals don't match, you'll see a message. Then save this document, and open "narrative.doc" to begin Part 2, which includes Sections 9-10.