



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

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January 9, 2006

Mr. Don Kowal,
Executive Secretary,
Pacific Salmon Commission,
600-1155 Robson Street,
Vancouver, BC V6E 1B5.
January 5, 2006.

Re: Report of the Expert Panel on the Future of the Coded Wire Tag Recovery
Program for Pacific Salmon.

Dear Mr. Kowal,

On behalf of the Confederated Bands and Tribes of the Yakama Nation, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation and the Confederated Tribes of the Warm Springs Reservation of Oregon, I want to thank the members of the Expert Panel for their report. The members of this Commission support the Report's Peer Reviewed conclusions and recommendations regarding the Future of the Coded Wire Tag Recovery Program for Pacific Salmon.

We recommend that the Pacific Salmon Commission, along with the participating management agencies of the PST process, develop an implementation plan by the end of this current meeting cycle for the Expert Panel Report's Peer Reviewed recommendations, especially the creation of a funding strategy for the "Grand Experiment." We view this implementation plan as a critical step in protecting and conserving our shared salmon resource. It will help ensure the protection of the CWT recovery program as an effective and efficient monitoring and evaluation tool for harvest management programs coastwide, and it is a crucial step in protecting the hundreds of millions of dollars invested in salmon recovery.

The need for this Expert Panel Report regarding the coded wire tag recovery program arose from the unilateral implementation of a mass marking and mark selective fishing program for hatchery produced Chinook and coho salmon. These programs have since been federalized through a legislative rider on federal appropriations bills, without benefit of Congressional hearings or research into the real costs of mass marking and mark selective fishing. The unilateral implementation of a mass marking and mark selective fishing program for hatchery Chinook and coho salmon puts salmon restoration programs and monetary investments in these programs at risk. The tribes, the State of Alaska, and Canada have made their views known on this issue for several years.

The Pacific Salmon Treaty's Memorandum of Understanding (MOU) requires the U.S. and Canada to, among other things, "maintain a coded-wire-tag and recapture program designed to provide statistically reliable data for stock assessment and fishery evaluation." The Pacific Salmon Commission (PSC), the body responsible for implementing the Treaty, has recognized that selective fisheries for marked hatchery coho and Chinook salmon can impact the coastwide coded wire tag (CWT) program. The tribes, states, and federal fishery agencies have invested an extensive amount of money and effort into the various components of the coded wire tag program. It is evident that, despite some short-comings of the system, the current system is the only available means of monitoring and evaluating the harvest management annexes of the Pacific Salmon Treaty (PST). It is also obvious that the unilateral implementation of mass marking and mark selective fishing programs undermines the continued viability of this management tool.

The recognition of the inherent and costly problems of utilizing the adipose fin clip as a visual mark for mark selective fishing for hatchery produced salmon is not a concern recently identified; technical concerns and issues regarding the impact of clipping the adipose fin as a visual marker for mark selective fishing were identified as a critical issue nearly fifteen years ago:

The Chinook Technical Committee (CTC) discussed the proposal and is strongly opposed to the use of adipose clips to mass-mark hatchery fish. This practice would render the CWT program nearly useless as a management tool. (CTC 1991)

Since then, we have learned that the costs and problems associated with the unilateral implementation of mass marking and mark selective fishing, especially for Chinook salmon stocks, are worse than those predicted by the CTC in 1991.

Comments regarding specific Findings and Recommendations

The Columbia River treaty tribes agree that, as stated in the report, the only tools currently available for estimating age and fishery specific exploitation rates on individual stocks are through the use of CWTs. As stated clearly in **Finding 1**: "*There is no obvious viable short-term alternative to the CWT system that could provide the data required for cohort analysis and implementation of PST management regimes for coho and Chinook salmon*".

Regarding problems with the existing tag recovery programs, we support most of the Expert Panel's findings. In addition, with regard to **Finding 5**, the Columbia River Treaty Tribes are one of the only parties involved in the PSC process that have verified the assumptions of using a hatchery indicator tag program (Priest Rapids Hatchery) to represent a natural stock component (Upriver Bright, URB Chinook). The tribes now have a time series of replicate tag groups from the natural component of Hanford Reach fall Chinook. The results indicate that the hatchery and natural groups have similar patterns of exploitation at age.

Regarding the implementation of mark-selective fisheries on Chinook, the Columbia River Treaty Tribes are not optimistic about the implementation of mark selective fisheries as a tool to protect stocks of concern. The Expert Panel's Report appears to support these concerns. There

are a number of unknowns involved with mark selective fisheries. However optimistic the proponents of these harvest management tools may be on these unknowns, we remain unconvinced of the practical implementation of these types of fisheries. I want to emphasize that the tribes have long used *selective* fisheries, such as time and area restrictions, gear restrictions, and voluntary fishery closures as conservation measures to protect weak stocks and we will continue to use such effective tools. In contrast, we view mark-selective fisheries simply as a tool to target hatchery produced fish, and therefore support status quo hatchery production practices, not conservation.

The primary issue of concern is maintaining the viability of the CWT program for its multiple purposes, including conservation. Mark-selective fisheries are likely to bias the exploitation rates that are derived from the CWT recoveries. Due to intensive efforts directed to marked stocks, the unmarked recoveries estimated in these models are inaccurate and biased low. In a workshop jointly held by Washington Department of Fish and Wildlife (WDFW) and the tribes in October 1999, it was pointed out that:

“BPERs (Base Period Exploitation Rates) are estimated from CWT data collected under conditions where all legal fish brought to the vessel are assumed to be retained. A fish was encountered only once; when it was caught, it was removed from the population. Under mark-selective fisheries, an unmarked fish is supposed to be released. Some of the unmarked fish will die, others survive and will become susceptible to recapture again. When discrete equations are used to model impacts of mark-selective fisheries on unmarked fish, this potential for multiple recapture during a model time period is ignored. Drop off and release mortality are underestimated and exploitation rates are biased low as a result. The likelihood of recapture will increase the longer the time period represented in discrete models (the time strata commonly modeled is monthly for coho, quarterly or yearly for chinook). The higher the exploitation rate, the greater the bias”.

The Selective Fishery Evaluation Committee’s Analytical Work Group (SFECAWG), established by the PSC, has investigated several methods (SFEC 2002) to address these biases and develop estimates of harvest impacts that are comparable to the current CWT system. Although a couple of theoretical approaches have been outlined, in reality these systems may not prove to be practical (JCDAW 2003). This has been reiterated in the report of the expert panel in **Findings 7 and 8, 9 and 10**, where the practical limitations of the Double Index Tag (DIT) program are discussed.

An issue that remains unresolved by the SFEC is correcting for multiple encounter bias. Simulations performed by our staff and others (Lawson and Sampson 1996, Zhou 2002), show that there are a higher incidence of unmarked mortalities than the management models predict. These estimates are directly related to the duration of the marked selective fisheries. In addition, the impacts increase non-linearly when unmarked stocks are at critically low abundances (an issue that is pertinent to some of the Snake River stocks).

While a number of technologies are being developed as potential replacements for the CWT system, it is premature to assume that a coast-wide sampling system for these technologies can

be implemented in the same manner as for the CWT system. While **Findings 18 and 19** suggest that new technologies show potential in identifying stocks, we believe substantial research needs to be conducted before we proceed down that route. It is clear from **Findings 12 through 16** that technologies such as allozymes, micro-satellite markers or SNPs in Genetic Stock Identification (GSI) techniques have numerous logistical limitations and cannot entirely replace the CWT system.

In addition as pointed out in **Finding 12**: “*Although such combination of technologies may be theoretically possible, their combined use could have substantial increased costs and would require a degree of interagency coordination and collaboration that exceeds that which was necessary to develop the CWT system.*” The practical limitations imposed by the costs and coordination between agencies implementing these new technologies may be extremely difficult to overcome and we think we should be extremely cautious before disregarding the CWT system that is currently in place.

The tribes believe that the region must carefully consider how the GSI technology will fit into current management issues. At the very least, the Pacific Salmon Commission should plan to work on GSI technologies in very close coordination with our current CWT system. In particular, we are not sure how **Recommendations 12, 13 and 14** would be implemented. The first step is to work out issues of sampling, coordination and assignment errors in these GSI techniques as stated in **Findings 12 through 16**.

In addition, with regards to **Recommendation 7** and **Table 4**, the tribes are unclear as to what the appropriate methods for an intended mark selective fishery is supposed to convey, other than the need to develop more intensive sampling methodologies when mark selective fisheries are prosecuted by an agency. It is clear from Zhou (2002), JCDAW (2003) and **Findings 7 through 10** that mark-selective fisheries (MSF) will result in a loss in precision as far as exploitation rates are concerned, regardless of any method identified. The tribes continue to hope that the agencies involved will be cautious about implementing an untested method of fishing.

Thus we strongly agree with **Recommendation 6**: “*To provide greater assurance that stock conservation objectives will be achieved, future fishery management regimes should compensate for increased uncertainty of fishery impacts on unmarked natural stocks due to degradation of the CWT system and non-landed mortality impacts related to MM and MSFs.*” The tribes believe the MSF proposing agency that causes this increased uncertainty should bear the burden and incur the largest reduction in the overall exploitation rate in order to guarantee that the conservation objectives are met for that stock.

As far as direction the PSC should take regarding this report, we strongly support **Recommendation 8**: “*The PSC should explore the interest of fishery agencies in participating in a Grand Experiment to improve the basis for harvest management decisions coast-wide through an intensive program conducted over a short period of time.*” If interest is sufficient, the various PSC technical committees (Chinook, Coho and Selective Fishery Evaluation) could prepare the specifications of the experiment, including addressing the feasibility and the experimental design. Implementation and funding regarding this experiment could be made available through the Northern and Southern Funds as well as from external sources such as National Science

Foundation (NSF) or National Research Council (NRC), and other private sources. Finally, if such an undertaking did proceed oversight on analyzing these results should rest with those specific technical committees.

Finally, our staff is already working on issues related to **Recommendation 4**, including making a presentation to that effect in **Western Division AFS meeting in San Diego in 2003**. Our staff is also currently working on issues related to **Recommendation 5**.

In conclusion, the tribes reiterate that experimental results on mark selective fishing on Chinook and coho, to date, have given a very wide range of results. It is premature to assume that all the findings and recommendations will be addressed soon, and it is premature to assume that mark selective fisheries are indeed the appropriate management tool for rebuilding depressed stocks. Again, it is important to remember that mark selective fisheries were proposed and are now being used not as tool to conserve weak and rebuilding salmon stocks, but merely as a tool that would allow hatchery fish to be caught – and allow hatchery production programs to remain unchanged, even though an obvious need exists to change hatchery production programs in order to aid in the restoration and rebuilding of salmon stocks.

Mark selective fisheries should not be implemented in the future until all of the issues identified in the peer reviewed Expert Panel Report are resolved through the agreement of the tribes, states, and federal fishery agencies. Unfortunately we again sense that some parties are rushing into the utilization of mark selective fisheries without taking the time for serious consideration of the possible negative effects. More effort should be paid to the other components for recovery of depressed or endangered populations, namely through the use of supplementation programs, habitat conservation and restoration programs, and hydropower system and flood control modifications; these efforts which would address the underlying problems limiting salmon production and productivity in a much better way than mark selective fisheries.

I look forward to working with you, members of the Pacific Salmon Commission and with the tribes, states and federal fishery management agencies to develop an implementation plan for the recommendations provided by the Expert Panel.

Sincerely,

A handwritten signature in black ink that reads "Olney Patt, Jr." The signature is written in a cursive style with a large, stylized initial "O".

Olney Patt
Executive Director

References

- CTC. 1991. Letter from CTC Co-Chairs to the Chair and Vice-Chair of the Pacific Salmon Commission regarding the de-sequestration of the adipose fin clip as a marker for the coded wire tag. *See Pacific Salmon Commission's Report of the Expert Panel on the Future of the Coded Wire Tag Recovery Program for Pacific Salmon.* November 2005.
- JCDAW (Joint Coho DIT Analysis Workgroup). 2003. Analysis of Coho Salmon Double Index (DIT) Data for the Brood Years 1998-2000. Northwest Fishery Resource Bulletin Project Report Series No. 12. Olympia, Washington, USA.
- Lawson, P. and Sampson, D. 1996. Gear-Related Mortality in selective Fisheries for Ocean Salmon. *North American Journal of Fisheries Management* 16: 512-520.
- SFEC. 2002. Investigation of methods to estimate mortalities of unmarked salmon in mark selective fisheries through the use of double index tag groups. TCSFEC (02)-1. pp. 87.
- Zhou, S. 2002. Uncertainties in estimating fishing mortality in unmarked salmon in mark-selective fisheries using double-index tagging. *North American Journal of Fisheries Management* 22: 480-493.