

State, Federal and Tribal Fishery Agencies Joint Technical Staff

*Columbia River Inter-Tribal Fish Commission
Idaho Department of Fish and Game
Nez Perce Tribe
Oregon Department of Fish and Wildlife
Shoshone-Bannock Tribes
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February 10, 2005

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Gentlemen:

As you know the representatives of the undersigned state, federal, tribal fishery agencies have been working with the Corps of Engineers and NOAA fisheries Science Center staff, since June of 2004 to reach agreement on a fall Chinook transportation and passage evaluation. The fishery agencies expended considerable effort in developing a proposed fall Chinook evaluation. They recognize that the management of fall Chinook passage is a critical near-term issue affecting the operation of federal hydrosystem and the well being of Snake River fall Chinook. Available data indicate that the present passage strategy of maximizing transportation of juveniles may not be prudent. We believe that a key to resolving these critical management issues is the establishment of a collaborative process between the fishery co-managers and the federal operating agencies. In order to avoid controversy and contention in future fall Chinook passage and mitigation implementation decisions, the fishery co-managers must be full and active participants in the design, implementation, analysis and reporting of fall Chinook

evaluations. To date, we believe that this has not occurred. The Corps of Engineers process for addressing the fall Chinook evaluation has thus far been frustrating, and disappointing. In our view, the COE process has not provided an adequate role for the fishery co-managers.

The COE unilaterally selected a group of consultants, and unilaterally developed questions to pose to those consultants regarding the fall Chinook evaluation and the review of the two proposals (one by tribal, state, and USFWS co-managers, the other by the NOAA Science Center). A collaborative process would have resulted in the development of questions and selection of consultants with the co-managers. We have attached our technical comments on the NOAA third revised proposed fall Chinook evaluation and the COE consultants review. Our comments can be summarized into the following three points.

- The consultants report indicates some misunderstanding on portions of the agencies' and tribes' proposal.
- The NOAA proposal is inadequate to address the prevailing management questions. The agencies and tribes are not in agreement with the NOAA proposal.
- The COE process has thus far not included adequate collaboration with the fishery co-managers.

Given the lack of adequate collaboration with the state and tribes, the failure to reach agreement with the co-managers on an evaluation, and the remaining short time frame, we recommend that the COE fund the following actions in 2005 in order to resolve these issues.

Fund a Fall Chinook Technical Workshop

In earlier correspondence, the agencies and tribes recommended that the COE fund a Technical Workshop examining various hypothesis based upon a weight-of-evidence approach, and facilitated by a contractor agreed upon by the co-managers to address the issues surrounding fall Chinook passage management, development and evaluation of hypotheses, study design options, and analytical methods. This approach will bring together the researchers, their data, their hypotheses and an open technical exchange bringing all of the data together and the evidence for various hypotheses. This will be necessary to define future research directions.

Establish and fund a Technical Fall Chinook Collaborative Committee

Establish and fund a Technical Collaborative Fall Chinook Committee comprised of representatives of the fishery co-managers. This committee in 2005 would be tasked with developing an agreed upon study design and implementation plan for a fall Chinook evaluation in 2006, addressing the recognized analytical and methodology issues and the results of the previously discussed fall Chinook workshop.

Sincerely,



Dave Statler, NPT



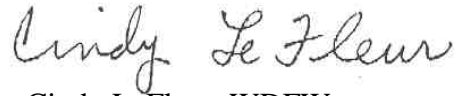
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Fishery Co-Manager Technical Comments Regarding

1. “A Review of Two Transportation Proposals” By J. Skalski, M. Schiewe and A. Giorgi, January 11, 2005 2. NOAA Revised Fall Chinook Evaluation Proposal

Following are: First, fishery co-manager comments on the Skalski, Giorgi and Schiewe review of the proposals and response to the three questions developed by the COE; Second, fishery co-manager comments on the revised NOAA fall Chinook evaluation proposal.

Comments on “A Review of Two Transportation Proposals”

The COE, BOR and BPA engaged three consultants to review the two proposals for the fall Chinook transportation evaluation. The stated intent of the COE was to obtain the review of the two proposals by “outside independent consultants”. In addition the COE unilaterally developed specific questions for the consultants’ response. The ad-hoc process implemented by the COE for evaluating the two proposals is significantly flawed and therefore limits the application of the consultant’s review of the two proposals. The three reviewers were selected unilaterally by the COE, BPA and BOR without discussion or agreement of the fishery management agencies and tribes. Each of these consultants has a long-term contractual and or professional association with NOAA fisheries. The questions posed by the COE are subject to various interpretations as to whether they are strictly technical study design questions or management questions. In a truly collaborative approach, both the development of the questions and the selection of consultants would have been accomplished through discussion and agreement with the state, tribal and federal fishery agencies. In a recent letter to Witt Anderson, COE, the agencies and tribes recommended a collaborative, structured, disciplined, scientific, weight-of-evidence approach to identifying hypothesis regarding fall Chinook passage management (attached). A weight-of-evidence approach is effective because it has demonstrated that it can provide a foundation for development of future research projects.

Specific Comments

Page 3, paragraph 1- The report states that the review is based on several considerations, first technical forums such as AFEP meetings and the NOAA/Northwest Power and Conservation Council Summer Flow Symposium. The state, tribal and federal fishery managers advised the NPCC that the Summer Flow Symposium devised and implemented by NOAA and the NPCC was inadequate to address fall Chinook passage requirements (letter attached). For instance, due to the short planning timeframe and competing commitments, CRITFC was unable to participate in the NPCC workshop. The agencies and tribes have discussed the inadequate collaboration of the AFEP process.

Page 4, Section III - In Section III, the reviewers misinterpreted the study design of the Joint agencies and tribes, USFWS/Nez Perce proposal. They refer to a Nez Perce Study component and a CSS component as two separate activities. This is incorrect. A careful reading of the joint agencies’ and tribes’ proposal indicates one release protocol, which we refer to as the Nez Perce approach. This release strategy is currently being utilized by the Nez Perce in ongoing subbasin

SAR studies. This approach establishes the two study categories at the time of tagging – one group to mimic the run-at-large under the current transportation program and the other group to mimic what the run-at-large would experience if all collected fish were bypassed instead of transported. There would be equal numbers of smolts PIT tagged in each study category. The mimic-bypass category would also be used in the estimation of in-river reach survivals. In years without spill, these two groups would provide a test of whether higher SARs would occur if collected fish are transported or simply bypassed at each collector dam. Both release groups will include fish that have passed collector dams undetected. In years with spill, there would be more fish undetected passing the collector dam for each study category. The overall SAR from initial smolt release to adult return indexed at Bonneville and Lower Granite Dam adult ladders for the two study categories would be the most basic parameter computed. For this SAR estimate, it doesn't matter whether the fish outmigrate as subyearlings or yearlings or at times when the PIT tag detectors at the dams are not operated. The reviewers mistakenly reported that the joint agencies' and tribes' approach would compare SARs of transported versus non-detected fish.

The primary analysis will center on estimation of T/I's and SAR, and we will base inferences on effectiveness of transportation and flow on these metrics. Secondary to that analysis, if critical assumptions are met, the joint agencies and tribes, USFWS/Nez Perce proposal included an analytical activity that would partition the mimic-transport and mimic-bypass categories into study groups T_0 , C_0 , and C_1 . The separation by code technology will be utilized to direct those marks to transportation, while the bypass group will be bypassed to the river. The bypassed mark group is analyzed utilizing the CJS methodology to estimate the population size arriving Lower Granite Dam and estimate the various reach survivals needed to convert detection data to Lower Granite Dam equivalents, and finally to estimate the parameter D. Difficulties in obtaining unbiased estimates of reach survival and D when an unknown proportion of the population may overwinter in downstream reaches were acknowledged. The agencies and tribes proposed that in implementing a collaborative technical approach they could develop an agreed upon analytical method for addressing the over-wintering effect. The smolts in the mimic-transport category that actually were detected and transported would be divided by corresponding reach survival needed to convert the data to Lower Granite Dam equivalents and create the T_0 group. The smolts in the mimic-bypass category that actually were detected and returned-to-river would be divided by corresponding reach survival needed to convert the data to Lower Granite Dam equivalents and create the C_1 group. The mimic-bypass category fish would also provide the estimate of the number of PIT tagged smolts not detected at any collector dam (Lower Granite, Little Goose, Lower Monumental, and McNary dams) and population size arriving Lower Granite Dam, which together would be used to create half of the C_0 group. Since the two study categories (mimic-transport and mimic-bypass) would contain the same number of smolts released and be thoroughly mixed within the production release at the hatchery or acclimation pond, it was planned to double the estimated number of smolts estimated in the C_0 group from the mimic-bypass category fish to account for fish in both the mimic-transport and mimic-bypass categories that pass the collected dams undetected, thus creating a larger overall C_0 group. If overwinter proportions of the population were non-negligible and a method to properly adjust for them was not possible, it was realized that these partitions to three study groups in Lower Granite Dam equivalents would not be possible. In that case a simpler approach using comparisons of T/Is and SARs across years may be required. The joint agencies' and tribes' proposal does not consider each hatchery release as a single release group and then use the electronics at the dams to route

detected fish into transport and return-to-river groups as is done in the CSS. Instead the proposal is to work within the framework of the Nez Perce release strategy to attempt to further partition the study fish into route of passage groups. This is an unfortunate mis-interpretation of the reviewers.

In Section IV the reviewers failed to comprehend the actual joint agencies and tribes proposed analysis, mistakenly reporting that the proposed analysis included a complicated censoring of recapture data that would produce wildly askew estimates, which Skalski et al. constructed in Table 1 to illustrate their point. The joint agencies and tribes proposed analytical methodology is simply the standard CJS method in which only marks that are detected in the same year as they are released, as sub-yearlings are utilized in the CJS methodology. Marks that are detected as sub-yearlings and detected at a downstream site the following year are only utilized as sub-yearlings to the site to where they were last detected in the same year as they were released. The example created by Skalski et al. in Table 1 makes it apparent that the reviewers failed to understand this simple concept. In the following discussion we illustrate in Tables 2 and 3 that the agencies and tribes methodology results in estimates that differ little from the standard CJS estimates, contrary to the misguided conclusions of the reviewers.

Skalski et al. provided an example that completely misrepresents the agencies and tribes proposal without actually explaining the “censoring” method that they used to construct their example. In order to understand the Skalski et al example we constructed the number of fish in each capture history that would be required to produce the Skalski example results Table 1 also showing the number of fish that would be included under varying overwintering survival scenarios. Table 2 shows the relatively small numbers of fish that are affected in each capture history. Based upon fish in each capture history in Table 2, the agencies and tribes proposed methodology is applied, producing survival estimates under assumed varying over wintering survival rates. Table 3 presents the resulting survivals and illustrates that applying the proposed agencies and tribe’s methodology produces resulting survivals nearly identical to the standard CJS method presented by Skalski et al. The only difference in the agencies and tribes method from the standard CJS method was due to the considering fish detected as yearlings as “removals” at the last location seen as a subyearling. But by not having the ability to apply a corresponding “removals” on the undetected fish will cause a bias relative to simply handling these fish as last detected as a subyearling but still returned-to-river for estimation purposes. The latter approach provides the reviewers “Standard CJS” when residualism occurs. But as we showed in Table 2, the bias impact of considering these fish as “removals” was fairly negligible in practice. This is because the number of fish that actually will be seen in the following year is relatively small compared to the remaining fish seen migrating out as subyearling smolts (tallies for affected capture histories are shown in Table 2 in bold type), the effect of our planned adjustment was also small.

This treatment of the mark recoveries is an analytical step which can be carried out or not, if it is found to bias the survival estimate it would be excluded from the analysis. However, based on the CJS with censoring results presented by the reviewers as their interpretation of our adjustment, it is obvious that the reviewers erroneously thought we were doing something different in our proposal (see Table 1). They show major impacts of their censoring method even when applied to a case when no residualism is present. In our analysis, if residualism is not

present, then there would not be any fish detected as a yearling, and so no adjustment would have ever been made.

Table 1. Results of CJS with Censoring as shown in the Skalski Review Team Document.

Parameter	Actual Value ¹	No Residualism Case ¹ (Review Team Table 3)		Residualism Case ¹ (Review Team Table 4)	
		Standard CJS	Censored CJS	Standard CJS	Censored CJS
$S_1 \cdot (1 - R_1)$	0.95	0.9500 (0.0065)	0.5273 (0.0016)	0.7600 (0.0071)	0.3726 (0.0015)
$S_2 \cdot (1 - R_2)$	0.95	0.9500 (0.0118)	1 (n/a)	0.8550 (0.0152)	1 (n/a)
P_1	0.25	0.2500 (0.0022)	0.9504 (0.0022)	0.2500 (0.0028)	0.5099 (0.0026)
P_2	0.25	0.2500 (0.0030)	0.5839 (0.0025)	0.2500 (0.0042)	0.6672 (0.0030)
$S_3 \cdot P_3 \cdot (1 - R_3)_{\text{Lambda}}$	0.2375	0.2375 (0.0028)	1 (n/a)	0.1663 (0.0029)	1 (n/a)

¹ Residual level is $R_1 = R_2 = R_3 = 0$.

² Residual level modeled is $R_1 = 20\%$ above LGR, $R_2 = 10\%$ between LGR and LGS, and $R_3 = 30\%$ between LGS and LMN. Subyearling Chinook reach survivals set at 95%; collection efficiencies set at 25% for both subyearlings and yearling Chinook.

Table 2. Tallies by capture history code entered into the MARK program to estimate reach survivals and collection efficiencies. Data for capture histories affected by “removal” adjustment are shown in bold type. Standard CJS method.

Capture History	No Residualism ²	Residualism at level of Skalski’s example ¹			
		No OW survival ³	20% OW survival ³	50% OW survival ³	80% OW survival ³
1100			-95	-238	-380
1110			-61	-152	-244
1010			-183	-457	-731
1111	1340	675	675	675	675
1011	4019	2026	2026	2026	2026
1101	4019	2026	2026	2026	2026
1001	12057	6077	6077	6077	6077
1110	4301	3386	3325	3234	3142
1010	12903	10158	9975	9701	9427
1100	14090	12913	12818	12675	12533
1000	47271	62739	62739	62739	62739

¹ Residual level modeled is $R_1 = 20\%$ above LGR, $R_2 = 10\%$ between LGR and LGS, and $R_3 = 30\%$ between LGS and LMN. Subyearling Chinook reach survivals set at 95%; collection efficiencies set at 25% for both subyearlings and yearling Chinook.

² Residual level is $R_1 = R_2 = R_3 = 0$.

³ Percent of overwintering (OW) survival assumed in making adjusted reach survival estimates.

Table 3. Survival and collection efficiency estimates for standard CJS method with “removal” adjustment for residualism under varying levels of overwinter survival.

Parameter	No Residualism ²	Residualism at level of Skalski’s example ¹			
		No OW survival ³	20% OW survival ³	50% OW survival ³	80% OW survival ³
$S_1 \cdot (1 - R_1)$	0.94998 (0.00648)	0.76000 (0.00709)	0.75715 (0.00704)	0.75286 (0.00698)	0.74860 (0.00692)
$S_2 \cdot (1 - R_2)$	0.95000 (0.01176)	0.85500 (0.01523)	0.84962 (0.01508)	0.84150 (0.01484)	0.83318 (0.01460)
P_1	0.25001 (0.00220)	0.25000 (0.00278)	0.25094 (0.00278)	0.25237 (0.00279)	0.25381 (0.00280)
P_2	0.25001 (0.00296)	0.25000 (0.00417)	0.25285 (0.00419)	0.25723 (0.00424)	0.26178 (0.00428)
$S_3 \cdot P_3 \cdot (1 - R_3)$	0.23751 (0.00283)	0.16627 (0.00292)	0.16880 (0.00296)	0.17274 (0.00302)	0.17688 (0.00309)

¹ Residual level modeled is $R_1 = 20\%$ above LGR, $R_2 = 10\%$ between LGR and LGS, and $R_3 = 30\%$ between LGS and LMN. Subyearling Chinook reach survivals set at 95%; collection efficiencies set at 25% for both subyearlings and yearling Chinook.

² Residual level is $R_1 = R_2 = R_3 = 0$.

³ Percent of overwintering (OW) survival assumed in making adjusted reach survival estimates.

Page 17, Section V - In Section V of the review, the authors comment that both proposals do not lay out an experimental design for incorporating years of spill and no-spill conditions. That is true, but since we do not know for sure whether spill will be provided by 2007 or the magnitude of the spill when it is provided, it appears somewhat premature to devise a multi-year experimental design for this initial proposal submittal. As more information will be forthcoming this year, we felt that development of a regionally approved design would need to be pursued over the next year. The initial intent was simply to develop the best design for implementation in 2005 under the no-spill R_1 condition expected for that year. The reviewers pose important questions regarding type of experimental design, replication, constraints of flow, and power operations that need to be considered in setting up a regionally approved approach to addressing management questions of how transportation, bypass, and spill may be tweaked to provide overall improvements in fall Chinook survival through the hydrosystem and returns as adults. The agencies and tribes have proposed a formal collaborative process to address and reach agreement on these issues.

The reviewers discuss the need to incorporate harvest information in the SAR estimation since fall Chinook harvest in the ocean and lower Columbia River may be sizeable before the returning adults even arrive and pass Bonneville Dam. They suggest double tagging with CWTs and PIT tags to investigate harvest benefits. They also present the concern for straying of fall Chinook into Lyons Ferry Hatchery since fish released from Big Canyon Creek and Captain John Rapids acclimation ponds were reared there, and recommend terminal monitoring at that site in addition any upstream adult traps at the various acclimation ponds being used in the study. The inclusion of harvest data into the calculation of SARs should be discussed and agreed upon through the US V Oregon process and parties the Lower Snake River Compensation Plan activities which both

conduct index marking with use of CWTs and the monitoring of the adult traps at the appropriate hatcheries and acclimation ponds.

Lastly, the reviewers question whether jacks should be omitted from the calculation of SARs. In the USFWS/Nez Perce proposal jacks were not excluded in the SAR calculations, and in particular, both the jacks from smolts that outmigrated as subyearlings and the mini-jack to jack sized fish that return in the fall from the smolts that outmigrated as yearlings in the spring should be included. Many of these latter fish are potentially of jack size when returning after upwards of 4 to 6 months in salt water. Therefore, it seems prudent to consider grouping the returning adults by combined “freshwater.saltwater” age as 0.1 and 1.0 age returns; 0.2 and 1.1 age returns; 0.3 and 1.2 age returns; 0.4 and 1.3 age returns; etc. The jack and mini-jack data should be considered since there is some indication that yearling out-migrants have a greater proportion of return as mini-jacks. The data should be considered since it does have implications for long-term production and management programs.

Comments on NOAA revised proposal

Subsequent to the original submittal of the joint agencies’ and tribes’ proposal and the NOAA proposal in August of 2004, NOAA submitted an additional proposal in October of 2004, and revisions of their August proposal in November of 2004 and again in December of 2004. The most recent revised NOAA proposal closely resembles the original August proposal submittal by the agencies and tribes for a fall Chinook evaluation. Like the agencies and tribes original proposal, the third-edition NOAA proposal has proposed marking two groups of subyearling Chinook, one group to be transported and one to be bypassed, and releasing them upstream of Lower Granite Dam. The result would be estimates of Smolt-to-Adult (SAR) returns for transported juvenile fall Chinook and bypassed juvenile fall Chinook. At this point the twice-revised NOAA proposal has been modified to resemble the original joint agencies and tribes proposal. We are disappointed that the agencies and tribes were not provided the opportunity to revise their original August proposal, as NOAA was given the opportunity to revise their proposal. Although NOAA has made an attempt to adopt the Joint agencies and tribe’s proposal into their own proposal, there are several aspects of the NOAA proposal that remain problematic. Specifically, a collaborative process that provides a central role for the fishery agencies and tribal co-managers for implementation, analysis and reporting of the results and conclusions that provides a central role for the fishery agencies and tribal co-managers is not included in the proposal. It is clear from the review and discussion of proposals that the Corps of Engineers and the state, tribal co-managers have very different views on the definition of collaboration. The joint agencies and tribes expectations regarding true collaboration and a meaningful role for the tribal, state and federal salmon managers are outlined in the letter preceding these comments.

The NOAA proposal has a large part of its discussion devoted to a manuscript in press by William Connor et al., which places significant emphasis upon overwintering fall Chinook based upon scale pattern analyses. The fishery agencies and tribes recognize that there are several fall Chinook out migration strategies. It is important to configure the system so that the hydro system operation does not select against the sub-yearling out migrants. However the NOAA proposal does not address questions that have been raised regarding the apparent disconnect between results of PIT tag studies that have been done in the Snake River and results of this scale study. Some of these questions were presented at the SRWG meeting in Walla Walla, but have

subsequently been ignored by NOAA and the COE. These summaries of the Connor et al. scale data have shown that there is large year-to-year variability in the estimated proportion of sub-yearling migrants for both hatchery and wild fish (Figures 1 and 2). The patterns over time in the scale estimates are dissimilar to the patterns based upon PIT tag detections for fish released in the upper and lower Snake River (Figure 3). In addition, the scale analysis methodology has not been validated using fish with known detection histories. These questions should precipitate significant caution regarding potential management or research implications of the Connor et al. analyses. Further, the emphasis on the overwintering fish may be misplaced since the vast majority of the fall Chinook juvenile population, both presently and historically, out-migrate as sub-yearlings. It has been estimated that 98% of wild fall Chinook from the Snake River and 47% from the Clearwater River migrate as sub-yearlings according to PIT-tag studies conducted by William Connor, USFWS (Connor et al. 2002). In the manuscript by Connor et al. and cited by NOAA, scale analysis indicated that on average 59% of wild fall Chinook juveniles out-migrate as sub-yearlings. Although the scale data indicate complexity in out-migration strategy it reaffirms the importance of the sub-yearling outmigration strategy. The results from this scale analysis and past PIT tag studies by Connor display an apparent disconnect (Figures 4 and 5). These apparently conflicting results could be the result of several things including the present passage management program causing large mortality rates on sub-yearling migrants, or that the Connor et al. juvenile PIT tag results do not represent the Snake River fall Chinook ESU. At this time, there is not sufficient data to understand the effects of hydrosystem operations on the proportion of the overall Snake River fall Chinook ESU that migrate as yearlings or the relative importance of yearling migrants for achieving recovery goals for the ESU. However, continued scale sampling and comparisons with PIT tag results, as was put forth in both proposals, should help to inform the scientific understanding of these issues.

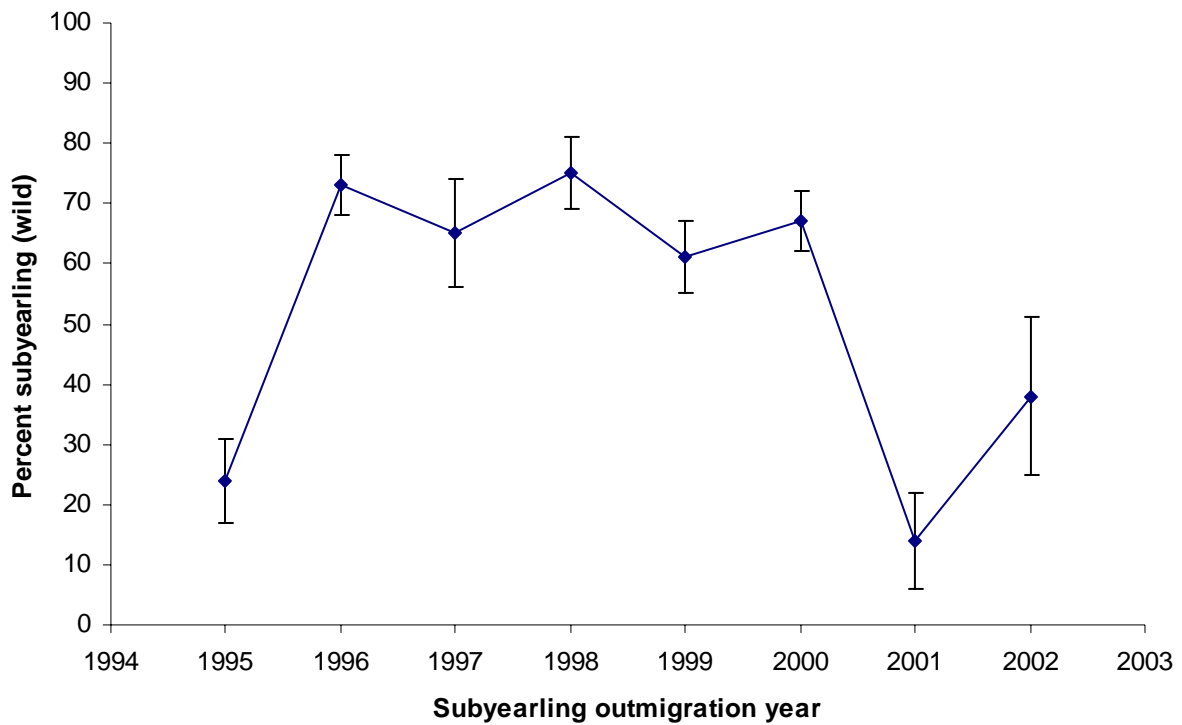


Figure 1. Percentage of wild fall Chinook adults collected at Lower Granite Dam that were estimated to have migrated to the ocean as subyearlings based upon scale pattern analyses (data from Connor et al. *in press*).

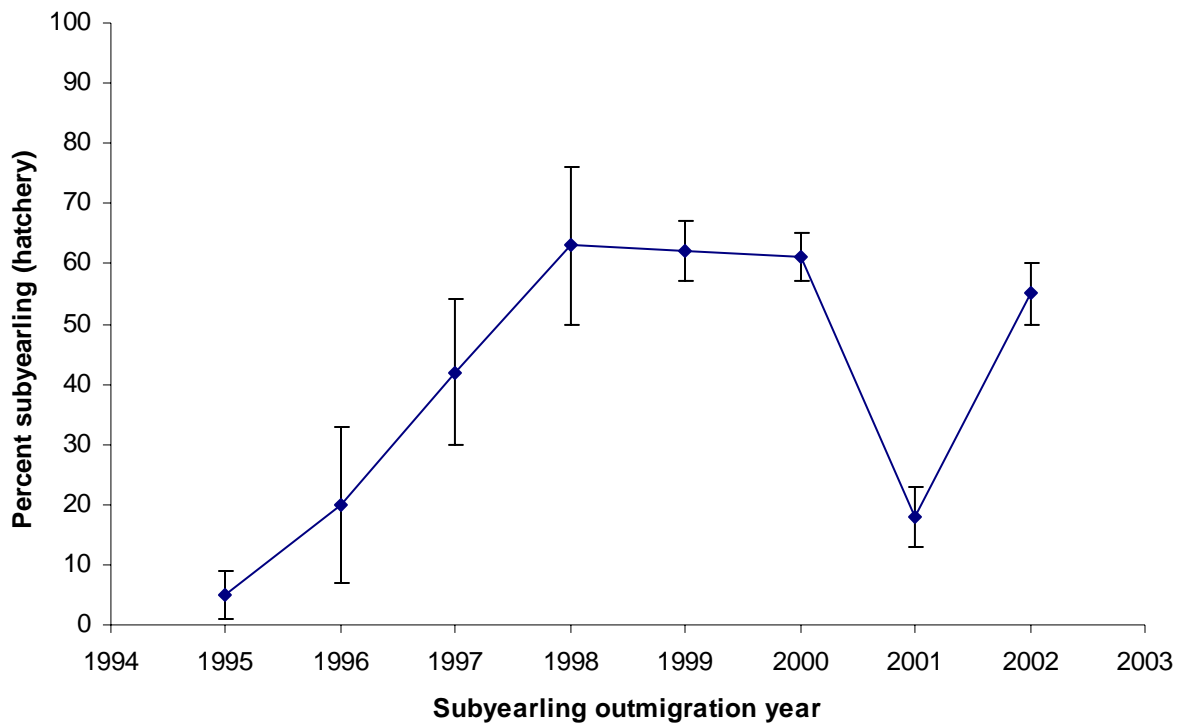


Figure 2. Percentage of hatchery fall Chinook adults collected at Lower Granite Dam that were estimated to have migrated to the ocean as subyearlings based upon scale pattern analyses (data from Connor et al. *in press*).

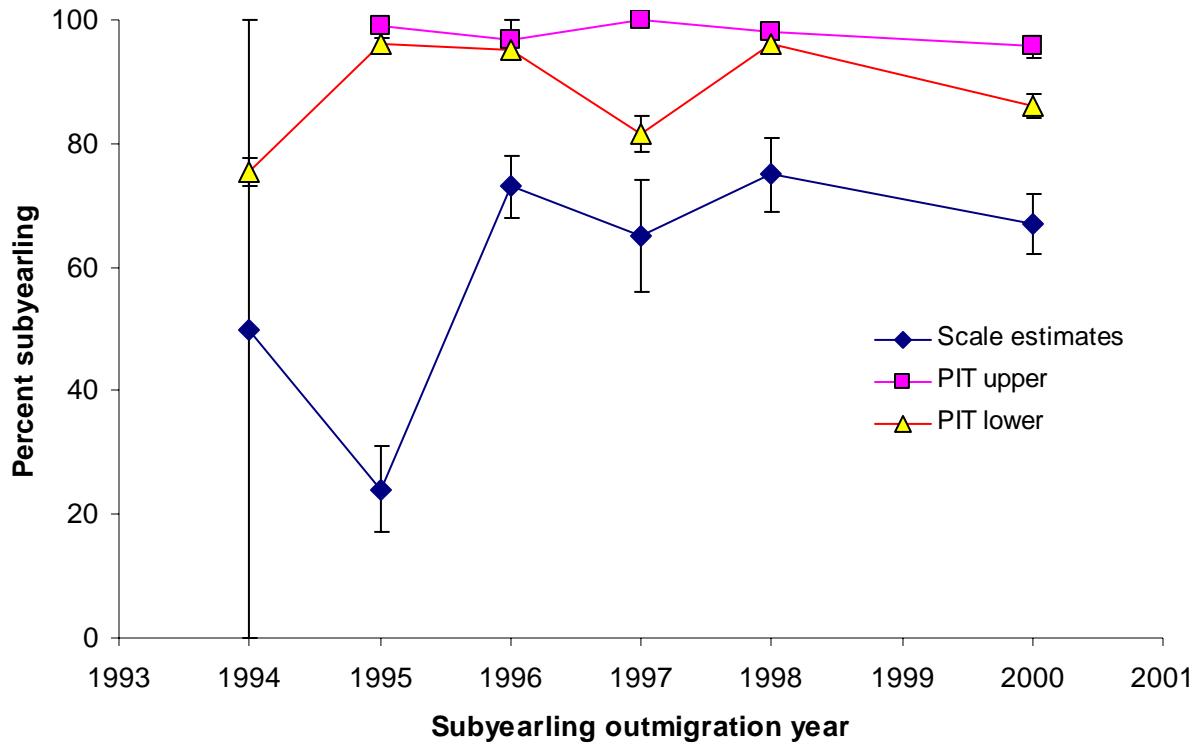


Figure 3. Percentage of wild fall Chinook adults collected at Lower Granite Dam that were estimated to have migrated to the ocean as subyearlings based upon scale pattern analyses (data from Connor et al. *in press*) and the estimated percentage of subyearling migrants based on PIT tag detections for fall Chinook released in the upper and lower portions of the free-flowing Snake River (data from Connor et al. 2002) over subyearling outmigration years 1994 through 2000.

LGR scales vs. PIT tagged in upper Snake (BY 94-97, 99)

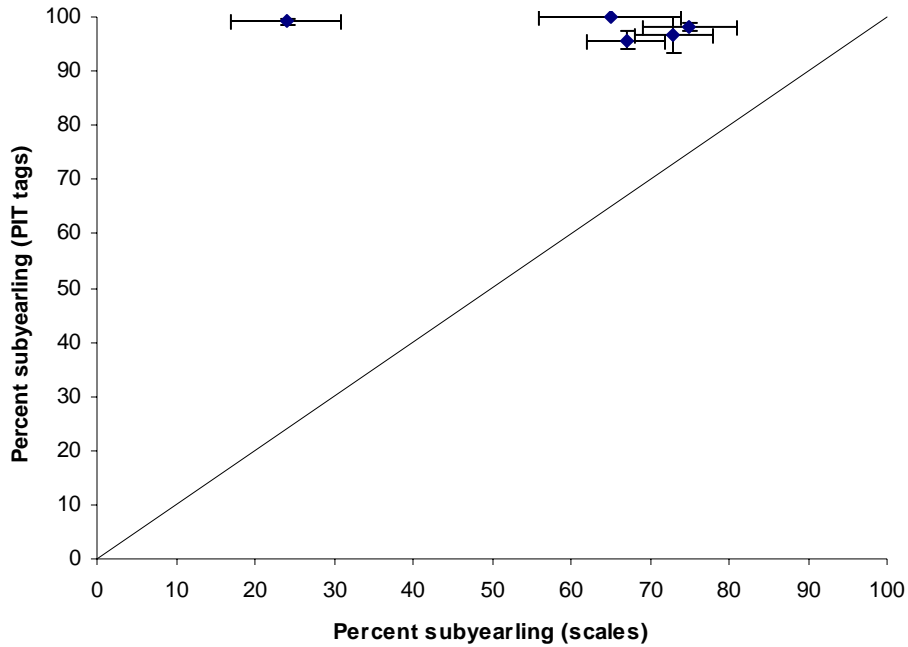


Figure 4. Percentage of wild fall Chinook adults collected at Lower Granite Dam that were estimated to have migrated to the ocean as subyearlings based upon scale pattern analyses (data from Connor et al. *in press*) versus the estimated percentage of subyearling migrants based on PIT tag detections for fall Chinook released in the upper portion of the free-flowing Snake River (data from Connor et al. 2002) for brood years 1994-1997 and 1999.

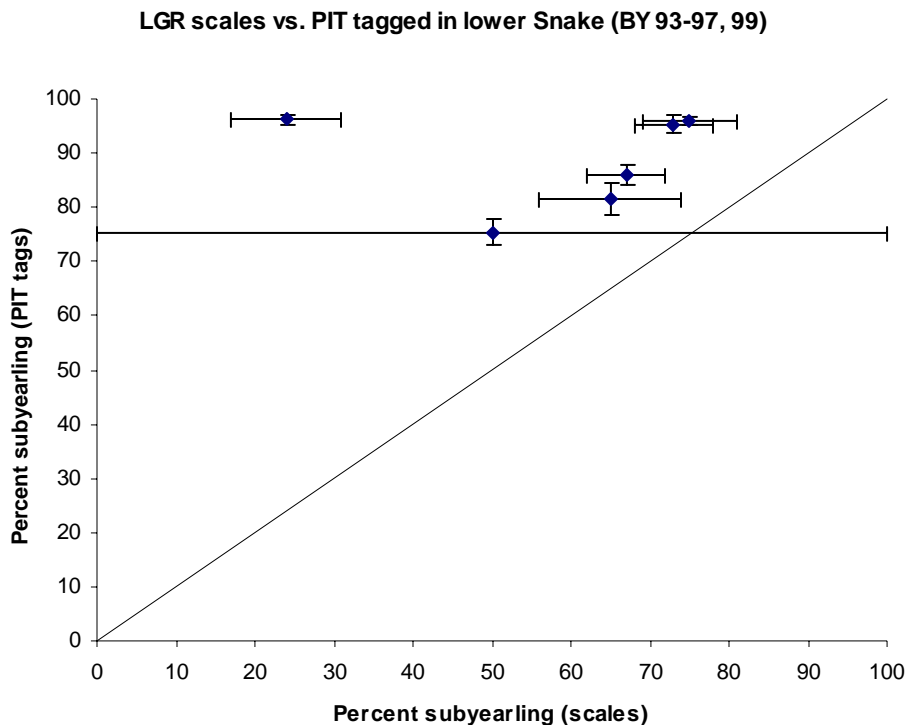


Figure 5. Percentage of wild fall Chinook adults collected at Lower Granite Dam that were estimated to have migrated to the ocean as subyearlings based upon scale pattern analyses (data from Connor et al. *in press*) versus the estimated percentage of subyearling migrants based on PIT tag detections for fall Chinook released in the lower portion of the free-flowing Snake River (data from Connor et al. 2002) for brood years 1994-1997 and 1999.

Specific Comments

- The study is inappropriately limited to non-representative groups of hatchery fish.** The NOAA test groups do not represent present hatchery production or wild migrants. The primary comparison in the NOAA proposal will be SARs between PIT tagged fish in two study groups – “transport strategy” and “in-river strategy” groups. These two groups are the same as the “mimic-transport” and “mimic-bypass” groups planned in the USFWS proposal. The type of hatchery fall Chinook used within these two study groups differed between proposals. NOAA plans to have hatchery fish reared to smaller size to try to mimic the smaller-sized wild fall Chinook, while USFWS planned to utilize the full size range of production fish to provide inferences to the major production of fall Chinook in the Snake River basin above Lower Granite Dam. The cited Conner unpublished data (2004) looked at two size groups of fish from Lyons Ferry released in June of 1997 and concluded that the smaller fish had higher SARs, but is this simply a one-year result, or does this indicate a general trend in survival versus hatchery size. Since the NOAA proposal is heavily weighted toward the notion of smaller hatchery fish being more like wild fish with regards to in-river timing and survival, but there is little evidence that the size effect carries over into SARs.

2. **The NOAA proposal places emphasis on the issue of over-wintering fall Chinook, but does not propose to investigate the actual proportion that hold over, or the cause of the hold over. NOAA seems to be proceeding with the unvalidated assumption that the overwintering proportion of the total population is significant.** The added complexity raised by nature of some fall Chinook subyearling holding over to yearlings before completing their seaward migration is raised in the NOAA proposal. Reading of scales on returning adults from the run-at-large collected at Lower Granite Dam by Conner over 6 years (1998-2003) showed 41% of wild and 51% of hatchery fall Chinook returns had scales with a ocean entry check indicative of yearling entry. These findings have caused great consternation on how to proceed with fall Chinook studies. If, as the Conner report suggests, the holdover proportions may be large, then use of the CJS methods for estimating population size at Lower Granite Dam and reach survival through the hydrosystem would be adversely impacted. If the holdover proportion is negligible in some year and only high when summer flows are lower than usual, then it would be important for any proposal to attempt to quantify the holdover proportion. In the USFWS proposal, we planned to use the “mimic-bypass” group to obtain the survival components for use in estimating a Lower Granite Dam population, converting detections at Little Goose, Lower Monumental, and McNary dams to Lower Granite Dam equivalents for partitioning the Lower Granite population into study groups C_0 , C_1 , and T_0 , and computing D . If a significant holdover proportion occurs between the dams, then the CJS method would not provide valid estimates for use in these estimations. So it is imperative that the magnitude of residualism is investigated in future fall Chinook studies.
3. **Although NOAA states they will compute reach survival estimates, and state that overwintering could bias the estimate, they do not explain how they will address that bias.** In the “Background” section of the NOAA proposal, they state that they will compute reach survival estimates from release to Lower Granite Dam and to dams downstream, but they do not discuss that the estimates may have severe bias if a significant level of residualism occurs in a given year. They discuss the problem of estimating a population size at Lower Granite Dam and estimating the number of fish never detected at a collector dam when residualism occurs, but they fail to tie this problem to the lack of unbiased reach survival estimates. However, in the “Approach” section they do not make any further mention of computing reach survival estimates, so it is unclear what they are proposing to do regarding estimation of in-river reach survival.
4. **The NOAA proposal infers that non-listed fish do not require evaluation.** In the NOAA proposal, they finally acknowledge the “value of determining the effects of hydropower system operations on hatchery production fish released either at hatcheries or acclimations sites.” They also state that they could expand the design to include production hatchery fall Chinook, but only if additional funding, tags, and fish were available. In their “Collaboration” section, they reiterate the value of including hatchery fall Chinook releases from the Nez Perce tribal and IDFG/IPC facilities, however, it appears that expanded studies to cover hatchery production would need to be funded outside the COE process by other entities. It appears that the COE may have an issue with studying non-listed fish, and resolution of this issue may be required before the COE would add hatchery production fish in the future.

ATTACHMENT #1 (Letter to Witt Anderson)

State, Federal and Tribal Fishery Agencies Joint Technical Staff

*Columbia River Inter-tribal Fish Commission
Idaho Department of Fish and Game
Nez Perce Tribe
Oregon Department of Fish and Wildlife
Shoshone-Bannock Tribes
US Fish and Wildlife Service
Washington Department of Fish and Wildlife*

September 8, 2004

Mr. Witt Anderson
Chief District Support Team
Department of the Army
Corps of Engineers, Northwestern Division
PO Box 2870
Portland, Oregon 97208-2870

Dear Mr. Anderson:

Thank you for your August 4, 2004 response to the state, federal and tribal salmon managers regarding our June 29, 2004 request to implement a spread-the-risk policy for fall chinook.

We appreciate your stated commitment to a strong collaborative approach to the management questions surrounding fall chinook passage management options. The agencies and tribes have developed and submitted a joint collaborative proposal for a fall chinook transportation and in-river migration evaluation study for FY 2005 through the Corps of Engineers Anadromous Fish Evaluation Program (AFEP) research process, with US Fish and Wildlife Service as the project leader. We believe that our collaborative proposal will produce results critical for future management decisions regarding fall chinook passage management.

Our joint proposal is an important first step towards determining future fall chinook passage management strategies that maximize smolt-to-adult survival in an effort to achieve recovery of this stock. However, as stated in our June 29, 2004 letter, there is a need to assess the current management paradigm given data collected to date. While research has been conducted on some aspects of fall chinook passage and life history, there are many facets to fall chinook passage that must be considered in fall chinook passage management decisions. All of the various available information should be brought together to begin to provide a common base of understanding and

a framework for development of future research that will lead to appropriate management decisions.

We concur with you that a meeting to vet the existing data on fall chinook between all regional managers would be beneficial. To best accomplish this task, the agencies and tribes are requesting that the Corps of Engineers work with the Fish Passage Center to fund, organize, and implement a fall chinook workshop facilitated by ESSA this winter. The Fish Passage Center and the US Fish and Wildlife Service implemented a similar workshop addressing the comparative survival of juvenile spring chinook migrants during February 2004. The workshop was very successful and provided a synthesis of available spring chinook passage and survival information. Through this synthesis, the participants formed a common basis of understanding that was useful for both interpreting historical data as well as outlining critical research needs for the future. We are convinced that a similar workshop organized and implemented in the same way will be extremely helpful in providing a basis for research and management of fall chinook passage. Please contact Michele DeHart at the Fish Passage Center, 503-230-4288 or Howard Schaller at the USFWS, 360-604-2500 to discuss the comparative survival workshop. We look forward to working with the Corps of Engineers on this critical resource management issue.

Sincerely,



Russ Kiefer, IDFG



Bob Heinith, CRITFC



Dave Statler, NPT



Cindy LeFleur, WDFW



Ron Boyce, ODFW



Dave Wills, USFWS



Keith Kutchins, SBT

State, Federal and Tribal Fishery Agencies Joint Technical Staff

*Columbia River Inter-tribal Fish Commission
Idaho Department of Fish and Game
Nez Perce Tribe
Oregon Department of Fish and Wildlife
Shoshone-Bannock Tribes
US Fish and Wildlife Service
Washington Department of Fish and Wildlife*

October 18, 2004

Ms. Judi Danielson, Chair
Northwest Power and Conservation Council
450 West State
PO Box 83720
Boise, ID 83720-0062

Mr. Doug Marker
Northwest Power and Conservation Council
Fish and Wildlife Division Director
851 SW 6th Ave., Suite 1100
Portland, OR 97204-1348

Dear Ms. Danielson and Mr. Marker:

Re: November 9-10 Flow-Survival Symposium

It is our understanding that the Northwest Power and Conservation Council (Council) and NOAA Fisheries are planning a symposium for November 9 and 10, 2004 to examine how changes in operations of Libby and Hungry Horse dams may affect flow and survival in the mainstem Columbia below Chief Joseph Dam. We concur with the need for federal, state, and tribal scientists to explore the biological implications of changes in Libby and Hungry Horse operations during summer as anticipated in the Council's 2003 Mainstem Amendments to the Columbia Basin Fish and Wildlife Program (Program) and as discussed in the July 19, 2004 letter from NOAA Fisheries to the Council. We are concerned, however, about the Council organizing and structuring this symposium without the formal involvement of all of the regional fish managers with vested interest in this issue.

A strong body of work from the regional fish managers and the National Research Council exists on the topic of flow, survival and incremental water withdrawals in the Columbia River Basin State, Federal, and Tribal Anadromous Fish Managers Comments on the Northwest Power Planning Council Draft Mainstem Amendments as they Relate to Flow/Survival Relationships for Salmon and Steelhead, January 2003; The effects of mainstem flow and water velocity on salmon and steelhead populations of the Columbia River, Presentation to the National Research Council, IDF&G, ODFW, USFWS, FPC, March 2003; and Managing the Columbia River: Instream Flows, Water Withdrawals, and Salmon Survival, Committee on Water Resources Management, Instream Flows, and Salmon Survival in the Columbia River Basin, National Research Council, 2004). These works should be the starting point for framing the workshop (we have attached the former two documents and the web link for the latter document for your record. Link to NAS report: <http://www.ecy.wa.gov/programs/wr/cr/crinsr.html>).

The Council should formally consult with the affected fishery managers on the objectives, specific questions, analytical methods, and format of the symposium. The current list of questions posed for the symposium is extremely narrow in scope, and appears to be directed at addressing the questions based on an incremental analysis of the effects of flow on juvenile salmonid survival utilizing SIMPAS and other models. We believe an examination of these issues using only these deterministic single life cycle models is not sufficient, as these models are inadequate to address the complexities and uncertainties of the effects of summer flow on the entire life cycle survival of anadromous fish below Libby and Hungry Horse dams. Applying this approach, which is parallel to the contested method used by the Council, NOAA Fisheries, and Action Agencies to evaluate effects of summer spill reductions, will only promote additional controversy, resulting in a lack of regional support of findings from the symposium. The Council should strive to avoid creating additional controversy by facilitating a broader technical scope. Also, failing to include in the rigorous evaluation of changes in Libby and Hungry Horse operations the effects on resident fish above and below projects leaves out a decisive element needed for a comprehensive evaluation as is anticipated in the Council's Program.

Based on our review of the announcement for the symposium, it appears that symposium participants will be asked to share their responses on the questions that will be summarized in a briefing document developed by the Council. We recommend that the symposium be patterned after a decision analysis framework using a "weight of evidence" approach whereby the strengths and weakness of the various factors affecting survival including flow are evaluated for each life stage of fish below the projects. We specifically recommend that the format used in the Comparative Survival Study workshop conducted February 11-13, 2004, be followed to provide a scientifically sound basis for assessing effects of changes in Libby/Hungry Horse project operations on fish.

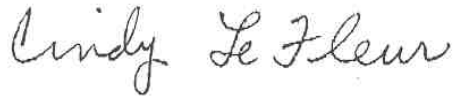
We stand ready to assist the Council in planning and conducting this important symposium that will increase the region's collective understanding of the implications of the Council's Program on fish and hope that our recommendations are useful in formulating the symposium. We agree that changes to the operations of Libby and Hungry Horse reservoirs need to be comprehensively examined to make sure that the modified operations proposed under the Council's program do not increase the risk to Columbia River anadromous or resident fish,

particularly pursuant to ongoing FCRPS consultation and expectations for further recovery planning. Flow augmentation is an extremely important component of anadromous fish recovery and restoration. Any changes to operations of Libby and Hungry Horse need to be comprehensively evaluated for compatibility with the NOAA Fisheries and USFWS BIOPs and to assure that the modified operations do not impede the progress towards recovery, achieving biological objectives and restoring sustainable fisheries.

Sincerely, STFA



Dave Statler, NPT



for Bill Tweit, WDFW



Ron Boyce, ODFW



Howard Schaller, USFWS



Keith Kutchins, SBT



for Sharon Kiefer, IDFG



Rob Lothrop, CRITFC

Cc: Bob Lohn NOAA Fisheries