**FINAL Meeting Notes**
**Lewis River License Implementation**
**Aquatic Coordination Committee (ACC) Meeting**
**March 9, 2006**
**Ariel, WA**

## ACC Participants Present (20)

Craig Burley, WDFW (via teleconference)
Jim Byrne, WDFW
Jeff Creagan, Three Rivers Recreational Area
Diana Gritten-MacDonald, Cowlitz PUD (via teleconference)
Adam Haspiel, USDA Forest Service
Janne Kaje, Steward & Associates (via teleconference)
Eric Kinne, WDFW
George Lee, Yakama Nation
Curt Leigh, WDFW (via teleconference)
Erik Lesko, PacifiCorp
Jim Malinowski, Fish First
Kevin Malone, Mobrand Jones & Stokes
Kimberly McCune, PacifiCorp
Todd Olson, PacifiCorp
Lee Shefcheck, Swift Communities Action Team (S.C.A.T)
Frank Shrier, PacifiCorp
Karen Thompson, Gifford Pinchot National Forest
Richard Turner, NMFS
Steve Vigg, WDFW (via teleconference)
Shannon Wills, Cowlitz Indian Tribe (in person in the AM, via teleconference in the PM)

## Calendar:

| | | |
|---|---|---|
| March 20, 2006 | TCC Meeting | Longview, WA |
| April 13, 2006 | ACC Meeting | Merwin Hydro |

| **Assignments from March 9th Meeting:** | **Status:** |
|---|---|
| Malone: Frame the question to the ACC and cite information he used (such as the HSRG website). Kimberly McCune (PacifiCorp) will email to the ACC for their further comment. | **Complete – 3/14/06** |
| Malone: Draft language for the ACC review and comment on the topic of adaptive management to achieve a balance of flexibility versus structure for decision making. | **Complete – 4/11/06** |
| Olson: Follow up with Michelle Day (NMFS) and LouEllyn Jones (USFWS) and Rich Turner (NMFS) to confirm the process after the 4/11/06 submittal. | **Complete** |
| Olson: Follow up with Adam Haspiel (USDA Forest Service) regarding conditions around contracting and fund distribution. | **Pending** |

| Assignments from February 9 Meeting: | Status: |
|---|---|
| McCune: Incorporate all requested meeting note changes to 1-9-06 notes and email to the ACC for an additional 7-day review period. | **Complete – 2/9/06** |
| McCune: Email H&S Plan public comments to the ACC for their review. | **Complete – 2/9/06** |
| McCune: Email the Merwin Trap Facility Design Criteria Document to the ACC as recommendations by the engineering subgroup. | **Complete – 2/14/06** |
| Lesko: Speak with the hatchery folks regarding George Lee's concerns of spring Chinook and get back to Lee at a later date. | **Complete – 4/13/06** |
| Olson/McCune: Send out a package of the funding proposals to include PacifiCorp's evaluation during the week of 2/13/06. | **Complete – 2/20/06** |
| Olson/Shrier: Send out questions to Adam Haspiel (USFS) and Karen Thompson (USFS) relating to further clarification needed on the funding requests. | **Complete – 2/23/06** |
| Haspiel: Double check if fish carcass can be dropped in Smith Creek and report back to ACC. | **Complete – 3/10/06** |
| McCune: Email information to the ACC from Karen Thompson (USFS) regarding Title 2 funds. | **Complete – 2/9/06** |

**Opening, Review of Agenda and Meeting Notes**

Frank Shrier (PacifiCorp) requested each participant introduce themselves the group. In addition, he reminded the citizens in attendance of the meeting protocol and that time for their comments will be provided before lunch and after the afternoon break. Shrier asked the citizens in attendance, Lee Shefcheck (S.C.A.T) and Jeff Creagan (Three Rivers Recreational Area) to introduce themselves and why they were here.

Shefcheck communicated to the ACC that he was here for general information as far as what the ACC is doing, to share the intent of the S.C.A.T group, to see where the ACC is going and how S.C.A.T can help ACC efforts.

Shrier conducted a review of the Agenda for the day and asked if the ACC would like any changes. Kimberly McCune (PacifiCorp) requested confirmation from Adam Haspiel, USDA Forest Service if he had double checked if fish carcass can be dropped in Smith Creek. He had done so and confirmed that fish carcass *cannot* be dropped into Smith Creek due to the Mt. St. Helens Monument requirements.

Shrier requested any comments and/or changes to the ACC 2/9/06 draft meeting notes. The meeting notes were adopted without changes at 9:20am and will be posted to the Lewis River website.

**Draft Hatchery & Supplementation (H&S) Plan Discussion**

Kevin Malone (Mobrand Jones & Stokes) led a presentation to the ACC, which is further outlined in a detailed Memorandum, dated March 3, 2006 (Attachment 1).

The first topic Malone reviewed with the attendees is **Hatchery Production Targets (Section 8.4, 8.4.1 and 8.4.2)**. Malone reviewed the primary concerns of both the public and Settlement Party comments (Attachment 2), and further commented on the intent of

the Lewis River Settlement Agreement (SA), relating to Sections 8.4, 8.4.1, & 8.4.2 and how to interpret the numbers in the SA.

Janne Kaje (Steward & Assoc.) communicated to the ACC that he wanted to make sure it's clear that juvenile production can be increased or decreased, however an increase will not be beyond the physical capacity of the hatcheries that they can produce. He further expressed that if juvenile numbers are not enough then we need to do what is required to produce the adult target in the SA within the capacity of the hatchery facilities.

There was general discussion about increasing juvenile survival, hatchery capacity limit and increase of production flow as determined by the ACC.

Craig Burley (WDFW) expressed that an adaptive management plan is needed now rather than in the future. He further indicated that it seems appropriate to make adjustments rather than waiting five years and there may be opportunities to make improvements as we go along (see Item 5 in Attachment 1).

Kaje said that 100,000 juveniles seems like a small number when trying to kick start a population in the upper basin. He requested further clarification regarding how good the juvenile collection facilities are going to be.

Malone responded that it's difficult to know how effective the juvenile collection was going to be, that we should see what happens in year five after the facilities are in. Kaje requested the addition of more detailed explanation into the H&S Plan relating to the logic behind arriving at the 100,000 number and how we might adapt that in the future.

Todd Olson (PacifiCorp) asked Kaje if he had given consideration to what that larger number might be. Kaje said that he can't say how many but considering the size of the basin it seems that perhaps 250,000 juveniles may be a more appropriate number, but he doesn't know the right number.

George Lee (Yakama Nation) expressed that he was hoping that the ACC will seriously make good faith effort on the Supplementation program. Lee agreed that 100,000 does seem like a low number. He further communicated that the discussion so far seems more focused on current hatchery practice.

Burley said that it may be helpful to talk about issues surrounding juvenile collection. He suggested to the ACC that in order to make the process successful the ACC should consider a phased approach for a reintroduction program; a way to get from where we are now to our goal and identify the key triggers in order to be successful.

Malone said the draft plan was assembled under the assumption that juvenile production could not exceed the numbers presented in the Settlement Agreement. In addition, it was assumed that all juveniles released in the Upper Basin should go through acclimation. Data collected by the Yakama Tribe showed large losses (lower survival) for fish released directly into the river versus those acclimated. So although we could increase juvenile releases in the Upper Lewis in the future, it would be critical that the collection efficiency of the Swift bypass system be high.

Burley communicated that he wants that kind of language in the H&S Plan, so later the ACC can deliberate the numbers as we proceed through the collection evaluation.

Rich Turner (NMFS) said that he is concerned about placing too many coho (ESA listed) above Swift if collection efficiency is low. He concurs with Burley regarding the phased approach: come back to the ACC and evaluate the next step.

Curt Leigh (WDFW) requested that within the H&S Plan certain language is added to bring to the attention of the ACC what areas in the Plan deviate from the SA, then the ACC can determine if this is acceptable. Olson clarified that PacifiCorp does not want to stray from the intent of the SA.

Leigh expressed that he does not have an issue with the initial production and release methods as proposed by Malone in his plan for steelhead in the Plan, but he wants the Plan to specifically identify why and where it deviates from the SA, then the ACC must have opportunity to review, discuss and maybe approve those deviations. Olson suggested highlighting this topic as a summary within the H&S Plan where the action deviates but the intent is to conform to the SA.

Lee asked if the ACC has formally identified the two acclimation pond sites. Shrier said we have not and that we are somewhat limited by the access, however the decision as to how many sites was not made during the negotiations and it remains to be seen how many possible sites exist that meet the criteria of 1) as high up in the basin as possible,; 2) accessible by fish truck; and 3) in close proximity to useable habitat.

Lee requested that the ACC consider the cultural issues when considering the selection of acclimation pond sites.

The second topic Malone reviewed with the ACC was **Integrated Versus Segregated Hatchery Program**, which is further outlined in more detail in a Memorandum to the ACC dated March 3, 2006 (Attachment 1). Malone reviewed the approach to a segregated program.

Their was general discussion regarding integration of natural fish, adaptation of natural brood stock, HSRG guidelines, hatchery stock, establishing self sustaining runs in the upper basin, success of reintroduction effort and dominating the upper basin with hatchery fish.

Shrier suggested that a separate session may be needed with the ACC to discuss the integration process in more detail. Olson requested Malone to frame the question to the ACC and cite information he used (such as the HSRG website). Kimberly McCune (PacifiCorp) will email to the ACC for their further comment.

The third topic reviewed and discussed was **Adult Hatchery and Natural Production Targets.** Their was general discussion regarding ocean recruits and whether jacks are included in the count, catch plus escapement, value of jacks versus adults, proportion of jacks in natural spawning population, intent of SA negotiation relating to the definition of adult recruits, minimum and adult nutrient returns, lifecycle modeling, in-river

escapement values, adult equivalent run size hooking mortalities, age two survival and SAR values.

The fourth topic reviewed and discussed was **Ocean Recruits and Jacks,** which is further outlined in more detail in a Memorandum to the ACC dated March 3, 2006 (Attachment 1).

The ACC in attendance approved that jacks will not be included in the count in accordance with the January 12, 2006 Final ACC Meeting Notes as follows:

> *The ACC, with the exception of American Rivers and Trout Unlimited, was in agreement that jacks are not adults and therefore should not be included in the ocean recruit estimate. Olson agreed to not include jacks in determining the benchmark, however he indicated that there is value to having jacks included in a separate analysis to give biologists insight on the larger global view as they provide some contribution.*

Burley requested specificity within the H&S Plan regarding which methodologies are being used to perform the calculations i.e., identify the specifics of the math and equations so the ACC is comfortable with the analysis including how the data was/is collected.

Regarding steelhead, there was general agreement that it might make sense to add an additional 50,000 winter steelhead to the goal given that SARs are considered to be only 2.5% rather than the 6% stated in the Fish Planning Document. However, Malone thought that, as it relates to hatchery capacity, we will have to wait until that capacity is determined. It may be that some other species may need to be reduced to make room for the additional steelhead.

There was general discussion regarding survival benefits of hatchery fish, manipulation of wild fish and sub-yearling survival rate.

Break <10:30am>
Reconvene <10:45am>

The fifth H&S Plan topic discussed was **Adaptive Management Draft Plan,** which is further outlined in more detail in a Memorandum to the ACC dated March 3, 2006 (Attachment 1).

Shrier suggested adding more detail regarding adaptive management directly from the SA addressing the topic of the phased approach to adaptive management. Burley suggested the inclusion of an outline in the H&S Plan illustrating what is meant by adaptive management, where we anticipate the ACC making decisions, describe that we do have annual management and that we don't have to wait five years before we can take action. He further expressed that it is critical to include in the outline that we are annually using adaptive management and be explicit that the ACC will have a role to play in the adaptive management. In addition, Burley said that the concept of adaptive management allows the ACC to take action when new information is received along the way. He does not want to constrain the process by requiring a specified amount of data before the ACC can

take action. The section should also identify key questions and information that should be gained through the Monitoring and Evaluation program.

Olson suggested that Malone draft language for ACC review and comment on the topic of adaptive management. We should try to achieve a balance of flexibility versus structure for decision making.

The 6th and final topic reviewed was **Recommendations,** which is further outlined in more detail in a Memorandum to the ACC dated March 3, 2006 (Attachment 1).

Leigh recommended to the ACC that we should be solely focused on meeting the goals of the SA and how the H&S Plan can facilitate these goals. Olson agreed with Leigh in that all recommendations and considerations be focused to the goals of the SA. Olson suggested adding into the H&S Plan that if "X" happens the ACC could consider "Z" at the appropriate time, rather than saying these are recommendations. The ACC agreed that the draft section "Recommendations" will be removed from the H&S Plan and that previously identified actions could be brought into the Adaptive Management section.

Olson communicated to the ACC that revisions to the H&S Plan need to be complete and sent to the Services by April 11, 2006.

Burley said that based on the risk analysis we may not hit our targets, but with the H&S Plan we can see what happens. Our best chance to hit these targets is to adaptively manage going forward based on the assumptions and risks. Monitoring and evaluation are extremely important as we make decisions going forward.

Olson said that we would keep these issues in mind as we look to the future aquatic projects if we are trying to increase fish production.

Olson communicated to the ACC that according to the SA we are to submit a draft to the Services by 4/11/06. PacifiCorp would also copy the ACC. Given revisions are needed to the Plan and further discussion needed, we could, as a group decide to request an extended review period from the SA parties (needed as the schedule is set in the SA) or work with the Services to continue ACC involvement once we submit the final. The latter was Olson's preference as his interest was to not get in the habit of extending SA deadlines.

Olson said he would follow up with Michelle Day (NMFS) and LouEllyn Jones (USFWS) to confirm the process after the 4/11/06 submittal.

**Public Comment Period**

Jeff Creagan (Three Rivers Recreational Area) communicated to the ACC that if the ACC has interest in acclimation sites along properties owned by Creagan and/or easements, he is interested in supporting our efforts.

Shrier said that access is a considerable constraint for us related to the juvenile acclimation sites above Swift.

Lee Shefcheck (S.C.A.T.) said that the things the ACC is doing are wonderful (and he is a sports fisherman). He also communicated that we in the area are all in this together and all want to accomplish a unified effort. He explained that one intent of the S.C.A.T group was to get everyone on the same page with common vision and goals. They are willing to work with the ACC regarding resource protection such as conservation easements and that they want to be a part of the process.

Lunch <12:35pm>
Reconvene <1:00pm>

**Aquatic Fund Proposal Discussion**

Olson reviewed the February 17, 2006 document that outlined the proposals selected for funding by the Utilities. The current objective of the funding process is to make the selection of projects to be funded by mid April. ACC comments on the six aquatic project proposals are due by March 20, 2006. Comments are requested in writing, via email is fine.

Olson said that in May 2006, following our first cycle through the funding process, we should stop and review the funding process with the ACC and make changes, if necessary.

Byrne communicated that he would like to use some of the funds in 2006 toward the acquisition of land and/or easements in riparian areas.

Olson replied that distribution of 2005/2006 funds will be after contracts are established with the ACC selected recipient and recipient will invoice PacifiCorp on a monthly or milestone basis. The funds will be dedicated but may not be issued immediately. Olson further expressed that the funding process has been established and the next time to apply for funds is summer 2006.

Shrier said that we have to be open to Byrne's suggestion for the next go-around of available funds and perhaps make some modifications to the funding process for acquisition of easements.

Olson said that the appropriate time for consideration of changes is May 2006. Shrier said that the funds that are not dedicated to approved projects can be carried over with interest and applied for in the next go-around.

Shannon Wills (Cowlitz Indian Tribe) is currently reviewing the Proposals and will hold comment at this time. Wills further commented that she is in favor of giving the funds to the recipients who have been awarded the funds, rather than holding the funds back for another purpose.

Olson encouraged all attendees to submit comments on or before March 20, 2006 so we are ready to finalize at the April 13, 2006 ACC meeting.

**Update on Relicensing Process**

Shrier communicated that he had spoke with Ann Ariel-Vecchio (FERC) regarding the new license schedule. FERC will issue a new schedule with the Final EIS (FEIS) which is targeted for the end of March. NMFS and FWS will be asked to submit their Biological Opinions and WDOE will be asked to submit their final 401 WQ Certifications within 30 days of issuance of the FEIS. Ariel-Vecchio said the usual process time for the FERC Order is 73 to 103 days following the FEIS. Assuming FEIS issuance on March 31, 2006, the FERC Order should be issued at somewhere between June 12 and July 12, 2006. PacifiCorp and Cowlitz PUD will have 30 days to respond to FERC following that issue date. Regardless of how long it takes the Utilities to accept, ISSUANCE OF THE LICENSES is the key date for the implementation schedule.

The draft 401 comments are due to WDOE March 15, 2006.

**Study Updates**

Shrier provided the following study updates:

*Spawning Gravel Study* – Final results are due March 31, 2006, which includes a draft Plan

*Yale Entrainment Study* – Has been going as planned until recently as the reservoir is too low for hydroacoustic equipment to work. The hydroacoustic is off for now.

*Merwin Tailrace* – Damaged antenna are all repaired, as per a conversation within the Engineering subgroup, PacifiCorp may want to tag a portion of late returning wild winter steelhead to observe a 'Unit 1 off' condition for the winters. We are still trying to arrive at adult trap efficiency, may go back to modeling different ATEs to see what is needed for a successful program.

*Limiting Factors Analysis* – The selected consultant, Meridian Environmental is currently working on the LFA study Plan, which will be sent to the ACC soon for review.

**Facility Design Criteria**

Shrier communicated to the ACC that the engineering subgroup had been working to arrive at engineering/design recommendations for the Merwin Collection and Transport facility. The current idea is to design the facility to handle the greatest number of fish we have seen in 1 day the last 10 years. Handling of surplus fish is one issue that the subgroup has not come up with a final determination. Traffic in and out of confined space is one of our constraints, bio-waste and drain field are also logistics they are still working on. PacifiCorp is ready to proceed with 30% design for the sorting facility.

**New Topics/Issues**

Olson communicated to the ACC that PacifiCorp expects to provide a copy of the Draft 2005 ACC/TCC Annual Report for their 30-day review in approximately two weeks.

**Agenda items for April 13, 2006**

- Further discussion - Draft Hatchery & Supplementation Plan comments
- Aquatic Fund Proposal Discussion (is change in process required)
- Study Updates
- Update on Relicensing Process
- Annual Report - 2005

**Next Scheduled Meetings**

| | |
|---|---|
| April 13, 2006 | May 11, 2006 |
| Merwin Hydro Facility | TBD |
| 9:00am – 3:00pm | 9:00am – 3:00pm |

**Meeting Adjourned at 2:10p.m.**

**Handouts**

- Final Agenda
- Draft Meeting Notes 2/9/06
- Jones & Stokes Memorandum (Kevin Malone, dated 3/3/06) – Response to comments on Draft Lewis River Hatchery and Supplementation Plan

Jones & Stokes

# Memo

**To:** Lewis River Aquatics Coordination Committee

**From:** Kevin Malone

**CC:** Frank Shrier, Erik Lesko, Diana Gritten-McDonald, Lars Mobrand, John Barr

**Date:** 3/3/06

**Re:** Response to Comments on Draft Lewis River Hatchery and Supplementation Draft Plan

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## Response to Comments

We have reviewed the initial comments submitted by the ACC on the Lewis River Hatchery and Supplementation Draft Plan (Draft Plan). Based on this review it is evident that discussion is needed with the ACC on interpretation of the Settlement Agreement used in constructing the Draft Plan. Comments received to date from the various parties differ in regards to what they believe was the "intent" of certain actions or performance criteria included in the Settlement Agreement. The major areas of the Draft Plan where we believe more discussion and clarification is needed before proceeding with the next version of the Draft Plan are presented below.

## 1. Hatchery Production Targets (Section 8.4, 8.4.1 and 8.4.2)

In section 8.4 of the Settlement Agreement it states:

*Each year, the Licensees shall provide for the production of spring Chinook salmon smolts, steelhead smolts, and coho salmon smolts at levels specified below ("Juvenile Production"). The licensees shall use the Juvenile Production to provide (1) juveniles for the supplementation program under Section 8.5, and (2) juveniles for harvest opportunities…*

The Settlement Agreement identifies the following juvenile production targets for each species (Table 1).

Table 1. Summary of juvenile production targets (Table 8.4 of the Draft Plan).

| Smolt Production | Spring Chinook | Steelhead | Coho | Total |
|---|---|---|---|---|
| Years 1-3 | 1.35 million | 275,000 | 1.8 million | 3.425 million |
| Years 4-5 | 1.35 million | 275,000 | 1.9 million | 3.525 million |
| Years 6-50 | 1.35 million | 275,000 | 2.0 million | 3.625 million |

Per the Settlement Agreement, the Draft Plan uses the data in Table 1 as the initial starting point for hatchery production. The Draft Plan does not make any adjustments to these juvenile numbers until year 5 of the license, and only at the direction of the ACC and Services. At the 5-year mark, data on total adult/jack production, as measured by the ocean recruits analysis, would be available for at least 1-brood year for all species. The Draft Plan "implies" that it is likely that total juvenile hatchery production would not be altered at the 5-year mark as a single brood year of data would not be sufficient evidence to support any changes, at least based on the ocean recruits analysis (in fact, we assume that it will take about 5-brood years of data to justify program changes). This fits well with SA 8.2.6, which calls for a comprehensive periodic review every 5 years at which point new direction may be taken based on review results. Based on the comments received on this issue, we have several questions that should be addressed by the ACC:

- We interpreted the numbers in Table 1 to be the agreed upon level of juvenile production required for at least the first 5-years of the license. That in developing these numbers, the parties to the Settlement Agreement believe that their analysis showed that this level of production would achieve the hatchery adult targets. Are these correct assumptions?

- Commenters noted that with the listing of coho in the lower river and other ESA issues, that the Draft Plan should not simply release the maximum number of juveniles as shown in Table 1. A better approach may be to reduce the quantity of fish released, but look for ways to increase quality. The Draft Plan proposes to keep juvenile production at identified levels, but also decrease rearing densities (especially for spring Chinook) in an attempt to improve survival. Discussion is needed as to when this approach could be changed given Settlement Agreement directive.

- Commenters note that the hatchery adult targets (86,000 adults), and the 3.4 million juveniles released to meet them, pose unacceptable risks to lower basin wild stocks due to competition, predation, and crossbreeding. The Draft Plan does not propose to change these targets as it was assumed that the Parties had considered these issues as part of the Settlement Agreement, and concluded that impacts were acceptable. Again, ACC discussion is needed as to when approach should be modified given the Settlement Agreement identifies the hatchery targets.

- The Draft Plan assumes that hatchery juvenile production cannot exceed the levels identified in Table 1. This is why the Draft Plan identified the option of reducing early winter steelhead production to make room for the new late winter program. Is this a correct assumption?

- Other commenters noted that hatchery production could be increased over time to meet hatchery adult targets, however the Settlement Agreement set capacity of hatcheries based on facility upgrades and net pen additions. What flexibility is provided in the Settlement Agreement?

- We are assuming that the fish production and rearing strategies proposed in the Draft Plan will be accommodated by the hatchery remodel, and this level of production defines the Hatcheries Capacity Limit. Is this correct?

## 2. Integrated Versus Segregated Hatchery Programs

The Draft Plan proposes to run Segregated/harvest programs in the lower river and Integrated/Conservation/recovery programs in the Upper basin, as the Draft Plan sees different objectives for each. The definition of each type of program, taken from HSRP and APRE documentation, is provided below.

- **Segregated**: A hatchery program is considered Segregated if the manager's intent is for the population to represent a distinct population that is reproductively isolated from naturally spawning populations. The principle intent of a Segregated program is to create a hatchery adapted population that can be used to meet harvest goals. Hatchery broodstock (and programs) are considered genetically segregated if the broodstock is maintained only with hatchery origin (HOR) adults. Therefore, gene flow from the natural origin population (NOR) to the hatchery broodstock is actively managed against in a Segregated program. In addition, hatchery origin adults are prevented from spawning in the wild to prevent gene flow from the less well-adapted hatchery population to the native or wild population.

- **Integrated**: A hatchery program is classified as Integrated if the manager's intent is for the natural environment to drive the adaptation and fitness of a composite population of fish that spawns both in the hatchery and the wild (i.e. natural environment). In an Integrated program, the proportion of natural origin broodstock in the hatchery and the proportion of hatchery fish on the spawning grounds determine the influence the hatchery and natural environments have on the composite population. The larger the ratio of wild fish to hatchery fish in either environment, the greater the influence wild fish genetics and adaptation will have on overall population genetics. The greater the difference between the hatchery and natural stock components (e.g. run-timing), and the less natural the hatchery environment, the larger the ratio must be to reduce the effects of hatchery selection.

The two definitions in reality apply to any basin where both wild and hatchery fish are present, these definitions do not work as well in the Lewis as Upper basin wild anadromous salmonids have been extirpated.

The Draft Plan assumes, with the exception of late winter steelhead, that hatchery origin fish will be used as the broodstock source to re-establish fish production above Merwin Dam. We considered "mining" lower basin origin wild coho and spring Chinook to start the program, but given population status, historical influence of hatchery fish, environmental conditions these fish have adapted to compared to upper basin conditions, and the unknown effectiveness of fish passage facilities, that hatchery fish would instead be utilized.

The Draft Plan proposes to begin building stocks adapted to the Upper basin by first releasing hatchery fish, and then as adult fish return from these releases, prioritizing them for release back to the Upper basin. Additional hatchery origin fish would only be released in the Upper basin if natural origin returns to the Upper basin were below a threshold value. The Draft Plan attempts to balance the risks of fish not finding a mate to the genetic risks of hatchery fish spawning with naturally produced fish.

A major assumption inherent in the Draft Plan is that a locally adapted broodstock does not result from a single pass through the gravel (i.e. one generation), but develops slowly over time. In this case, it is assumed that the process takes at least 12-15 years (approximately 3-5 generations dependent on species). Based on this assumption, "wild or natural" fish would not be available to Integrate into the lower river hatchery program until this time, and therefore these hatcheries must continue as segregated programs with the primary goal of providing fish for harvest.

- Commenters suggest that integration should occur sooner than proposed in the Draft Plan. Our conclusion was that fish one generation removed from the hatchery environment, would provide little new genetic material (or survival benefit) to the hatchery component of the population. The logic being that if genetics change from these fish being exposed a single time to the wild, why wouldn't this same result occur if they were exposed one time to hatchery conditions (i.e. revert back?). Emphasis is placed on getting wild or natural adult fish back to the location (i.e. Upper basin) they originated from. Does the ACC disagree with this logic?

- If the hatchery programs are run as Segregated programs, HSRG guidelines suggest that adults from these programs must not make up no more than 5% of the natural spawning

population. Meeting this goal would reduce impacts to wild stocks in the lower river and address comments received on this issue. However, to reduce hatchery adult abundance in the lower river would likely require a reduction in hatchery release numbers. Would this action be acceptable?

- Commenters noted that lower river wild coho, Chinook, steelhead, could be used to Integrate the existing hatchery programs. Should this occur and for what purpose? Should S-type coho even be released in the lower river?

## 3. Adult Hatchery and Natural Production Targets

The Draft Plan provides a summary of expected fish benefits (adult production) for each species (see below). The Draft Plan notes that given the assumptions currently used in the analysis the only species that may achieve hatchery production targets is steelhead, and then primarily due to summer steelhead production. It should be noted that these numbers do not include adult production from Merwin and Yale, as these areas will just be starting production at year 12 of the license. Additionally, the SAR values used came from the Lewis River Fish Draft Planning Document (Appendix D, Table D-4). So these values should be familiar to the commenters.

Table 2. Expected outcomes of the Lewis River H&S Draft Plan spring Chinook program (Table ES-6 from H&S Draft Plan).

| Program/Phase | Average Adult Ocean Recruits |
|---|---|
| **Spring Chinook** | |
| Supplementation Years 12+ | ~1,500 |
| Segregated Harvest Program | ~7,600 |
| Total | ~9,100 |
| | |
| **Coho** | |
| Type-S Supplementation Years 12+ | ~6,900 |
| Type-S Segregated Harvest Program | ~19,700 |
| Type-N Segregated Harvest Program | ~21,000 |
| Total | ~47,600 |
| | |
| **Steelhead** | |
| Late-winter Supplementation Years 12+ | ~1,400 |
| Winter Segregated Harvest Program | ~800 |
| Summer Segregated Harvest Program | ~13,800 |
| Total | ~16,000 |

Commenters state that they are unable to support a Draft Plan where adult production targets are not met. First, the estimates should not be considered absolutes, but rather used to adjudge the risks associated with the Draft Plan in achieving adult targets. Second, the Cramer analysis (Appendix D, Table D-9, Lewis River Fish Draft Planning Document) reached a similar conclusion as the Draft Plan. Risks for spring Chinook were highest, followed by coho and then steelhead. We would point out however, that the SAR required for hatchery steelhead to achieve the goal was set at 4.8%. Commenters noted that steelhead SAR values are likely lower than this given the broodstock and harvest numbers presented in the HGMPs for Lewis River steelhead.

- Are the SAR assumptions inconsistent with previous analysis? If so, what data should be used?

- The Cramer analysis concluded that the risks of not meeting hatchery adult targets were medium. Does the ACC disagree with this conclusion? Is the Draft Plan inconsistent with the conclusion?

- The Draft Plan assumes the adult numbers are indeed targets and not absolutes (must always be met starting in year 1 of the Draft Plan). Is this assumption incorrect?

- If the Settlement Agreement sets the Hatchery capacity and fish passage facilities are constructed to meet passage criteria, what options are available to increase adult production?

## 4. Ocean Recruits and Jacks

Section 8.1 of the Settlement Agreement States:

*The Hatchery and Supplementation Draft Plan shall be designed to achieve the numeric Hatchery Targets provided for in Section 8.3 below and those targets shall be calculated in terms of ocean recruits of hatchery origin, taking into account harvest and escapement. For purposes of this Agreement, "Ocean Recruits" shall mean total escapement (fish that naturally spawned above Merwin Dam and hatchery fish) plus harvest (including ocean, Columbia River and Lewis River harvest).*

- The Draft Plan assumes the definition of ocean recruits includes so-called jacks, as they are fish that naturally spawn, are represented in naturally occurring stocks and may be captured in fisheries. Many commenters disagreed with this assertion, and suggested that only adults counted in the calculation. The ACC needs to provide the correct assumption.

- Note also that some commenters requested that jacks be included in the ocean recruits method, but not counted in adult hatchery targets, although said table is based on the ocean recruits analysis. How should we proceed?

## 5. Adaptive Management Draft Plan

The Draft Plan notes that the Settlement Agreement appears to provide sufficient guidance over the next 15-years to make the development of an adaptive management plan unnecessary. The Draft Plan assumes that every 5-years, the ACC will review the Draft Plan and make changes as needed. As Adaptive Management Plans are generally focused on larger time frames, it was assumed that year-to-year changes in fish management would best be made by the ACC in consultation with the Services, Tribes and WDFW.

Based on comments received, the Draft Plan will include an Adaptive Management component that identifies decision points where input will be needed from the ACC and services to select different management strategies. This plan would best be categorized as a rationale management plan, in that decisions would be made based on the data available at that time. However, it must be emphasized that over the next 5-years there will be very little data to support any major alteration to the Settlement Agreement. For example, complete adult returns from hatchery releases will only be available for one-to-two brood years, and fish passage facilities at Swift will not be built until year 4-5 of the license.

Additionally, we did provide some adaptive components in regards to possible hatchery configurations (Integrated or Segregated) that could be implemented in the future based on study results, but some

commenters disagreed that these would ever be desirable and that they could not support such an approach. It is difficult to layout an Adaptive Management Draft Plan if all parties must agree to the alternative management strategies that could be implemented in the future.

- We are proposing that in the next version of the Draft Plan that key decision points and possible pathway changes be identified for the next 5-years. This would be Phase 1 of an Adaptive Management Draft Plan. Would this be an acceptable approach?

- At year 5, the ACC would review study results from Phase 1, and the results of the Independent Review required by the Settlement Agreement to produce Phase 2 of the Adaptive Management Draft Plan.

## *6. Recommendations*

We developed the recommendations put forth in the Draft Plan. It should be noted however, that the recommendations are not included in the Draft Plan. Instead they were our suggestions as to actions that may be needed to achieve program goals.

- As noted in item 3, both the Draft Plan and Cramer noted that there was a medium-to-high risk that spring Chinook hatchery production would not achieve goals. Given the importance of this species, culturally, economically, and regulatory it was suggested that the Draft Plan put more emphasis on this species. Does the ACC disagree with this assumption and recommendation??

- There were split comments regarding whether programs should be changed to prevent impacts to harvest, or to wild fish. Our suggested change in coho production was an attempt to balance both. As S-type coho produced less fish to fisheries than N-type coho, it was suggested that the S-type program be eliminated once self-sustaining runs were established in the Upper basin. This action would reduce hatchery impacts on lower river fish populations, while at the same time freeing up hatchery space for other species such as spring Chinook. The adult production targets are for all coho combined, does the ACC believe that both S-type and N-type hatchery fish must always be released each year?

- WDFW noted that N-type coho might be used as the broodstock source for seeding streams in Merwin or Yale? The Draft Plan assumes that only S-type would be in the upper basin as per the Settlement…is this assumption incorrect? If so, what data or factors need to be considered to select one coho type over the other? Should S-Type coho even be released below Merwin Dam?

Attachment 2

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PORTLAND OFFICE
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

F/NWR5

February 8, 2006

Kim McCune, Project Coordinator
PacifiCorp
825 NE Multnomah Street, Suite 1500
Portland, OR 97232

RE: Comments on PacifiCorp and Public Utility District No. 1 of Cowlitz County's November 2005 Draft Lewis River Hatchery and Supplementation Plan

Dear Ms. McCune;

The National Marine Fisheries Service (NMFS) is providing comments and questions on PacifiCorp and Public Utility District No. 1 of Cowlitz County's November 2005 Draft Lewis River Hatchery and Supplementation Plan (Plan). We look forward to working collaboratively with you to develop the final Plan as some of the answers to our questions may lead to further comments.

**General Comments**

The Plan and the subsequent Annual Operating Plans require approval of NMFS and U.S. Fish and Wildlife Service (the Services) (Settlement Agreement [SA] Sections 8.2 and 8.2.3). The Plan has examples of where decisions are to be made by the Aquatic Coordinating Committee (ACC). These instances should also acknowledge that approval of the Services is required. One example is on page 15, 3.0 Supplementation Program, third paragraph, "The decision to pursue one approach over the other would be made in consultation with the ACC."

The initial Annual Operating Plan (SA Section 8.2.3) is supposed to be part of this Plan. Please explain how this is to be incorporated into this Plan. The initial Annual Operating Plan should be clearly set apart since it will be updated on an annual basis.

Within the next couple of years, NMFS expects to complete recovery plans for the Endangered Species Act-listed anadromous fish in the Lewis River basin. These will be helpful in later updates of the Plan.

At the beginning of our collaborative work through the ACC, it is timely for us to include a comment on our expectation of how the licensees should develop required plans (and non-required items) with the ACC. While we are happy with the overall coordination that has been occurring, we expect that a minor refinement of the consultation process will make future efforts even better and preclude possible future problems. The SA (Section 8.2.1) calls for the licensees, in consultation with the ACC, to produce and distribute a draft Hatchery and

Supplementation Plan to the ACC by the first anniversary of the effective date. With regard to "Consultation with the ACC," we think the process would be improved if the licensees engage in consultation with the ACC during the development phase prior to the required review time. This allows for early in-depth discussions and considerations which should make a better product and reduce comments on the drafts.

**Specific Comments**

Page iv, Executive Summary, 3rd paragraph: "Reintroduction efforts for Yale and Merwin are not scheduled until year 8 of the new license." This could be misread to imply that Merwin efforts start in year 8. It would add clarity to modify this sentence to something like: "year 8 and 12 of the new license, respectively." We are interpreting your use of "Reintroduction efforts" here as including the Habitat Preparation Plan identified in Section 7.4 of the SA. Thus the reason for the use of 8 years rather than 13. Is this correct?

Page v, Executive Summary, Hatchery and Natural Production Targets, 1st paragraph: The Plan proposes for the ACC to adjust hatchery production every 5 years. Why is it limited to 5 years? SA Section 8.1 states that the Plan will be carried out to adaptively manage the program and guide its management. Although SA Section 8.2.5 calls for Plan updates every 5 years[1], SA Section 8.2.3 calls for an Annual Operating Plan. Why not adjust hatchery production annually after enough data is collected? This needs more explanation and discussion.

Page v, Executive Summary, Table ES-2. Hatchery target floor levels for spring Chinook, steelhead and coho: The number under coho should be 12,558 not 12,588.

Page viii, Executive Summary, Harvest, 2: We believe the escapement goals for the Upper Lewis River basin that are listed were derived from habitat productivity/capacity models that rely on values that were filled based on professional judgments. Is this correct? If so, because these are judgments, the outcome may turn out to be different than predicted. Therefore, these goals may be adjusted in the future and the Plan should include such a possibility. Also, the Plan recommends that no harvest be allowed on spring Chinook, coho, or steelhead until escapement goals are met for that species. While that may be wise, given that the group will be learning as monitoring and evaluation of the reintroduction program occurs, there may be a different level at which harvest could occur (i.e., this could be at higher escapement goals than listed). This should be a decision that is made in the future once more is known about the productivity of the upper basin and the success of the reintroduction program.

Page ix, Monitoring and Evaluation, last bullet: Regarding "Habitat data both upstream and below Merwin Dam (mainstem Lewis River only)," does the "mainstem Lewis River only" apply just to the area below Merwin Dam? If so, please modify this bullet so that it is clear that habitat data will include tributaries in the area above Merwin Dam. If not, it should cover tributaries as there will be spawning and rearing of the reintroduced populations in such.

[1] or sooner if required by the Hatchery Genetic Management Plan (HGMP).

Page ix, Adaptive Management: There should be an adaptive management plan included now, even if it is limited to the use of the monitoring and evaluation by the ACC. This is a new program that should adapt quickly to new information. This Plan and the Annual Operating Plans (SA Section 8.2.3) should incorporate such a possibility.

Page x, Expected Outcomes, 1st partial paragraph: It would be helpful to add something like the following at the end of the paragraph for clarity: "Kokanee are not being monitored at this time because reintroduction of salmon and steelhead is not going to occur in Lake Merwin for over a decade."

Page 1, Introduction, 2nd paragraph: The Plan states that salmon and steelhead would be introduced into the habitat located between Merwin and Swift dams following the 13th and 17th anniversaries of the new licenses. Please modify this to incorporate (1) the Habitat Preparation Program which calls for fish placed there 5 years prior to the completion of the downstream collectors and (2) that the timing of the supplementation program in this area is up to the ACC and could be earlier than 13 and 17 years. If the ACC were to follow the same rationale as with above Swift, this would be one year prior to the completed construction of the downstream collectors.

Page 2, Introduction, 1st non-bullet paragraph: The same comment as above for Page v, Executive Summary, Hatchery and Natural Production Targets, 1st paragraph.

Page 5, Figure 1-3. Settlement Agreement anadromous fish reintroduction outcome goals: The box on "Phase I Reintroduction Outcome Goals" misses that the SA (Section 3.1.1) calls for this prior to the later of either (a) the 27th anniversary of the new licenses or (b) the 12th year after reintroduction. The 12th year was in case there was an unforeseen delay in the issuance of the new licenses. The boxes under the Goals not met that cover a limiting factors analysis should also include the approval of the Services as well as consultation with the ACC (SA Section 3.5.2).

Page 7, last paragraph: ". . . as the reintroduction of fish to Merwin and Yale does not begin until year 8 of the new license" could be rewritten as ". . . as the reintroduction of fish to Yale and Merwin does not begin until year 8 and 12 of the new license, respectively" or something similar to avoid looking like reintroduction to Merwin occurs in year 8.

Page 9, last paragraph: The Plan states that the earliest the decision on how best to operate the hatchery programs is likely between license years 12 – 17. Why is this? We would like further discussion on this. As we stated earlier, the group will be learning as we go and will be gaining information from the monitoring and evaluation program.

Page 9, 1. Convert the Segregated programs for native populations into Integrated: The decision to change the segregated programs to integrated programs should be based on the abundance of naturally produced fish from the upper basin. If returns increase to the point where there are enough adult returns, such that removing some of the adults for broodstock will not adversely affect the population, then natural fish should be integrated into those programs that produce fish for harvest. This could be done even before the 12-17 year decision period.

Page 10, 2. Discontinue hatchery releases in upper Lewis River basin convert native Segregated programs to Integrated: We expect this to occur as described above. The proportion of natural origin broodstock (NOBs) depends on the abundance of natural origin fish. If no hatchery fish are released into the upper basin then under the All H Analyzer (better known as AHA) modeling, the proportion of NOBs in the hatchery broodstock does not need to be 50 percent but can be less since for the population as a whole the naturally produced fish will always be the majority of the spawners. The level could exceed 50 percent NOBs if abundances are high enough. After the naturally produced population has been established, a decision matrix should be developed to determine the proportion of natural origin fish that can be removed for broodstock. Also note that as the naturally produced population increases above the thresholds identified in the Plan, hatchery production will be reduced, leading to fewer adults needed for broodstock.

Page 10, 3. Discontinue hatchery releases in upper Lewis River basin and maintain Segregated programs: NMFS tends not to support this option because the hatchery population would diverge from the naturally spawning population. In the case of the spring Chinook, and coho salmon, NMFS would like to make the listed hatchery program as similar to the natural population as possible even though it is providing fish for harvest. An integrated hatchery program provides greater conservation benefits than a segregated program. Furthermore, if hatchery fish spawn naturally below the dams and return as unmarked adults, which are then passed upstream, these fish may adversely affect the naturally spawning populations in the upper basin.

Page 10, 4. Continue Segregated Program/Maintain a Smaller Integrated/eliminate hatchery stocking above Merwin: This option would not be supported for the same reasons listed above, and it would probably be difficult to maintain two programs at the hatchery.

Page 12, 2nd paragraph: Does Washington Department of Fish and Wildlife (WDFW) support the contention that early winter steelhead production has to be reduced to make room for the late winter steelhead program? Isn't the hatchery being remodeled to support the new late winter steelhead program and for the increased production of coho salmon?

Page 12, 2.1.4 Broodstock Needs and Escapement Targets, 1st paragraph: How were escapement target numbers derived? We believe the escapement goals for the Upper Lewis River basin that are listed were derived from models that rely on professional judgments of the habitat productivity/capacity. Is this correct? This should be explained in the document. Also, these capacity predictions may turn out to be incorrect.. Therefore, these goals may be adjusted in the future and the Plan should include such possibility.

Page 13: Harvest Recommendation 1 needs to be changed so that the language in the parentheses is (including fish with an intact adipose fin and RV or LV clip).

Page 13, 2.1.4 Broodstock Needs and Escapement Targets, 2.: The Plan states that no direct harvest would be allowed on salmon or steelhead unless it was certain that escapement goals would be achieved. Since the Settlement Parties are aiming for higher numbers than this, we may want to change our escapement goals to increased amounts in future years. It is too early to

decide when to harvest. One aspect the group should consider is that we may want to wait for higher population numbers before having harvest.

Page 13, 2.1.5 Hatchery Production Adjustment, 2nd paragraph: In the paragraph it says that after thresholds are met, the number of juveniles released from the hatchery each year would be reduced based on the average survival rate calculated over a 5-year period. But it also says that the decision to adjust the hatchery production would be made by the ACC every five years. How do these two go together? This needs more explanation or clarification.

Page 14, Table 2-6. Hatchery target floor levels for adult spring Chinook, steelhead and coho: The number under coho should be 12,558 not 12,588.

Page 14, 2.2.2 Resident Trout, 2nd paragraph: In the discussion of the resident trout program, any problems resulting from resident trout entering the fish collection facilities can be addressed. For example, resident trout in Lake Scanewa, above Cowlitz Falls Dam are not released into the reservoir until the high spring flows have subsided. Also, fishing regulation changes in the reservoirs (especially Swift) may be needed in the future to protect out-migrating juvenile salmon and steelhead (e.g., opening season end of May, marking all resident trout releases to provide for selective fisheries, using off channel areas for concentrated fishing efforts, no releases until after June 15).

Page 14, 2.2.2 Resident Trout, 3rd paragraph: What is the carrying capacity of Swift Reservoir, and what are the native fish communities?

Page 15, 6th paragraph: When supplementing late winter steelhead, when would wild adult late winter steelhead be put upstream?

Page 16, 1st partial paragraph: The 12-year period is not the decision point for the Services defining the metrics that would be used to define program success. As explained earlier, the SA (Section 3.1.1) calls for this prior to the later of either (a) the 27th anniversary of the new licenses or (b) the 12th year after reintroduction. Also, there should not just be one strategy that is continued for 12 years and then stopped. There needs to be the ability to adapt as we proceed with this new program and there must be other ways to assess the reintroduction program without stopping the supplementation piece. Please explore this and open a dialogue with the parties. Additionally, the last sentence acknowledges that the supplementation program may continue through year 15 if it meets certain criteria. It can be extended beyond that by the ACC with Services approval on an annual basis (SA Section 8.5) and the Plan should acknowledge such.

Page 16, 1st full paragraph, 1.: The last part of the first priority for the use of adults should be changed from gravel-to-gravel to adult-to-adult.

Page 16, 3rd full paragraph: The termination of releases of hatchery spring Chinook in the upper basin will depend on two things, first is the completion of the juvenile fish collection facility and the determination that it can collect juvenile spring Chinook at levels that can support a self sustaining population. Once this is achieved, then the decision of when to end releases can be

made. Second, the release of hatchery spring Chinook could be terminated sooner, if collection efficiencies are high enough and adult returns exceed supplementation goals.

Page 16, last paragraph before 3.1.2 Broodstock Origin: The Plan calls for stopping smolt and adult supplementation after 12 years to be able to monitor the population to determine if reintroduction goals have been achieved. We have already explained that the 12 year timeframe is incorrect. We also feel that there may be ways to assess the reintroduction goals without completely stopping supplementation or by the time when the reintroduction goals are assessed, the supplementation may have already been stopped. It is too early to be making this decision.

Page 16, 3.1.2 Broodstock Origin: The priority of the use of returning hatchery spring Chinook should be set as the following: the first 800 returning adults should be used to continue juvenile production, the next 2000 should be used for adult releases into the upper basin. For those naturally produced fish above the 2000 needed for the upper basin, a decision matrix should be developed for incorporating a portion of those fish into the broodstock. The matrix should also show what will happen when returns of both naturally produced and hatchery fish are less than 800 and less than 2800. The Plan needs to identify the minimum number of adults that would be released into the upper basin to prevent demographic effects (not finding a partner).

Page 17, 3.1.4 Incubation and Rearing: Access to acclimation ponds may be difficult in February.

Page 17, 3.1.5 Release Location and Numbers Released: Please revise the first sentence with something like: "A minimum of 2000 adults and up to 100,000 smolts will be released. . ." to reflect the next sentence that says a minimum. The way the first sentence is written in the Plan implies that up to 2000 adults will be used. Also, considering that the number of adults being placed above is based on the habitat capacity estimated by Ecosystem Diagnostic and Treatment (EDT), the number of adults should be re-evaluated as we get results from the monitoring and evaluation program. The predicted habitat capacity may not be the actual habitat capacity and the Plan should be adapted as we learn. We are not sure this is the correct number to start with. It may be based on current EDT estimates, but perhaps that should not be our only scale. This needs more discussion. Additionally, the pre-spawning mortality of spring Chinook adults transported to the upper basin should be estimated. If the pre-spawning mortality is high, then the total number of adults released must be increased to compensate.

Page 17, last partial paragraph: Why is the decision to modify the current Segregated harvest program into an Integrated program proposed to occur after 15 years? Why couldn't this be looked at sooner?

Page 18, 3.2.2 Broodstock Origin: Can more than 9,000 coho be released in the first few years to allow for pre-spawning mortality and to provide for some harvest? Also, as with spring Chinook, a decision matrix should be developed to show how adults will be used when coho returns are between zero and 9,000, and when naturally produced fish exceed the escapement goal and can be incorporated into the broodstock.

Page 18, 3.2.4 Broodstock Collection: Program should identify when the cut-off date is between Type-S and Type-N coho.

Page 19, 3.2 coho salmon, 3.2.5 Release Location and Numbers Released, 1st paragraph: Why is adult supplementation stopped at the end of 9 years when the ACC with Services approval can decide to continue supplementation on an annual basis? Also, as stated earlier, the reintroduction goals will not be determined at year 9.

Page 19, 3.2.5 Release Location and Numbers Released, 2nd paragraph: At the completion of the 9 year period, before discontinuing the release of adult hatchery coho, it should be determined by the Services that the collection efficiency is enough to support a self sustaining population. If the juvenile collection efficiency is less than the 80 percent goal then the program should continue until a number of years have passed with collection efficiencies meeting the goal before considering termination of hatchery releases.

Page 19, 3.2 coho salmon, 3.2.5 Release Location and Numbers Released, 2nd paragraph: Again, we are not sure that we have to wait as long as proposed and for the completion of the evaluation of stock sustainability to decide on whether or not to modify the current Segregated harvest program for Type-S coho into an Integrated Harvest program.

Page 19, 3.3 Steelhead: We have the same comments in this section as with the spring Chinook and coho sections regarding the need for an adaptive management program, when the reintroduction strategy stops, when the reintroduction goals are evaluated, etc.

Page 19, 3.3.1 Supplementation Strategy, 2nd paragraph: What happens to the naturally produced late run winter steelhead that exceed the 50 needed for broodstock? Will these be released downstream or will they be passed upstream with returning hatchery late run winter steelhead? At what time would all naturally produced steelhead be passed upstream?

Page 20, 3.3.3 Broodstock Collection and Mating: A decision matrix should be established that will show what will happen to returning naturally produced late winter steelhead at abundances from 0 to 1,000. These protocols should identify when and if hatchery late winter steelhead will be used in the broodstock if returns are less than 50 adults. It should also identify the minimum number of adult late winter steelhead that would be released into the upper basin if returns are low.

Page 20, 3.3.4 Incubation and Rearing: The citation given in the first sentence for the WDFW winter steelhead Hatchery and Genetic Management Plan (HGMP) is listed in the Reference section as being the Lewis River (Merwin) Summer Steelhead. Is this correct? Also, does the WDFW agree that the early winter steelhead program has to be reduced to make room for the late winter steelhead program? Are there other changes at the hatcheries to support current production and the new programs? Also, how will the hatchery late run winter steelhead be marked so they can be identified at the trap? The mark will have to be different than those provided to juveniles produced in the upper basin.

Page 21, Steelhead, 3.3.5 Release Location and Numbers Released: The Plan states that all returning adults will be released near the head of the Swift Reservoir. While this may be an acceptable way to start, there may be reasons to modify this in the future to include different locations e.g., if it is found that fish are not distributing well in the upper basin, etc. This is another reason there should be an adaptive management component built into the Plan.

Page 22, 4.0 Monitoring and Evaluation, 2nd paragraph: Monitoring is needed to inform whether or not the supplementation program is working. Monitoring is needed to enable changes where necessary (adaptive management).

Page 22, 4.0 Monitoring and Evaluation, 3rd paragraph: The Plan states that monitoring is needed to quantify possible impacts from supplementation activities on bull trout. Monitoring is also needed to understand the possibility of impacts from bull trout to the supplementation activities. This will allow for adaptation.

Page 24, Table 4-1. Marking program for supplementation, hatchery, and natural origin spring Chinook, coho and steelhead: In the first row there are the terms "snout" and "nose." What is the difference? The table under Natural states a "minimum of 50,000 cwt's". Why does it say minimum? What happens to those naturally produced fish collected at Swift that exceed the 50,000 minimum? Will not all fish be marked with coded wire tags? All of these fish should be marked. How will juveniles be marked as part of the evaluation of the juvenile collection facilities?

Page 24, 4.2 Ocean Recruits: When including jacks in the calculation there must be consideration of reasonableness. In other words, we want to make sure that there is a representative percentage of jacks here in the Lewis as seen in other similar runs.

Page 25, 4.3.1 Anadromous Fish Programs, 3rd paragraph: Because the goal for a segregated program is not to exceed 5 percent of the natural spawning population, this goal provides more reason to integrate the hatchery harvest programs for spring Chinook, coho, and steelhead. There is a concern with interactions between naturally spawning hatchery summer and early winter steelhead down stream of the hatchery. However, returns of naturally produced summer and early winter steelhead (based on condition and run timing) have been very low (e.g. in 2001, 12 out of 6,948 summer steelhead returns were unmarked, these could also include mis-marked hatchery fish).

Page 26, 4.3.2 Resident Fish Programs: While it may be useful to have the information during the Habitat Preparation Program, it is possible that the impacts from the resident trout plants could be higher after the full reintroduction program starts. In other words, the number of juvenile reintroduced fish is expected to be higher than those during the Habitat Preparation Program. It is not a given that with a changing prey base the resulting impacts by a predator will result in consistent ratios. Therefore, this analysis should occur again after the reintroduction program starts. Also, what is the rationale behind 3 percent as the threshold impact at which the resident trout program should be eliminated? We would like to understand your rationale to help us determine if we agree with this value. Also, if the Lake Scanewa on the Cowlitz River resident trout program can be used as an example, there are number of measures that can be

taken to reduce predation and incidental catch of naturally produced juveniles that should be evaluated before considering eliminating the resident trout program in Swift Reservoir.

Page 26, 4.3.3 Harvest Effects, 2nd paragraph, 2.: Catch and release mortality associated with selective fisheries has been calculated in other basins (e.g., Willamette River, Oregon), however, a study to measure this would be supported by NMFS. Associated with this study would be the continuation of creel surveys to get an accurate estimate of the encounter rate for naturally produced (or unmarked) fish in the fishery. This encounter rate is used to estimate the overall mortality associated with the fisheries.

Page 27, 4.3.4 Index Stocks: The data proposed to be gathered for the Index Stocks would also be collected as part of the Lower Columbia River recovery plans for listed species. These data could be used to estimate if limiting factors are internal or external to the Lewis River basin.

Page 27, 4.3.4 Index Stocks, 1st paragraph: Please change "would" to "could" in the second sentence so that it reads "This information could feed into the Limiting Factors Analysis (LFA) called for in year 27 of the license."

Page 27, 4.3.4 Index Stocks, 3rd paragraph: We caution special emphasis on use of the Cowlitz River reintroduction program as while there are similarities there are also differences e.g., collection efficiencies, how fish are released, etc. While the concept of using index stocks is good, the group needs to be careful on how we use or interpret that information.

Page 27-28, 4.3 Hatchery Effects: There needs to be included in the Monitoring and Evaluation section activities that will address the evaluation of the hatcheries once they are remodeled. The upgraded facilities will need to go through an evaluation to determine the best hatchery rearing practices for the production of fish that will support the supplementation efforts.

Page 28, 4.3.5 Life-History Data and Performance, last bullet: Regarding "Habitat data both upstream and below Merwin Dam (mainstem Lewis River only)," does the "mainstem Lewis River only" apply just to the area below Merwin Dam? If so, please modify this bullet so that it is clear that habitat data will include tributaries in the area above Merwin Dam. One possible way to modify this is: "Habitat data both upstream of Merwin Dam and in the mainstem Lewis River below Merwin Dam." If this is not what is meant, it should cover tributaries as there will be spawning and rearing of the reintroduced populations in such.

Page 29, 5.0 Adaptive Management: As stated throughout this comment letter, there needs to be an adaptive management component in this Plan. As the group learns how things are working, there may be some adaptive management actions identified that need to occur prior to the 5-year review and a mechanism needs to be place for such.

Page 30, 6.0 Expected Outcomes: This section should be redone as data is collected and this section should acknowledge such.

Page 30, 6.1 Spring Chinook, 1st paragraph: Will releases be limited to 2000 adults in the upper basin? This assumes that habitat capacity is reached. Hatchery adult spring Chinook releases into the upper basin should be maximized, as long as surplus hatchery fish are available.

Page 31, 6.2 coho, 1st paragraph: Same question as above, will releases be limited to 9,000 adults?

Page 32, 6.3 Steelhead: Does the NORs spawning include all naturally produced late winter steelhead, or just those that result from the juvenile releases (i.e., those collected at Swift Dam)? It should be noted that the harvest estimate reported for the winter steelhead segregated program is very low reflecting past harvest levels. In 2001, in the North Fork Lewis River alone over 2,100 hatchery winter steelhead were harvested, up from 530 in 2000; and this occurred with no changes in the number of juveniles released. The harvest of 2,100 hatchery winter steelhead is substantial and reflects the importance of this program to the basin.

Page 34, 7.0 Recommendations, 1. Elimination of the existing winter (early) steelhead program: As described above, the harvest of hatchery winter steelhead in the Lewis River has increased in recent years reflecting higher survivals that those cited in the Plan. The program currently supports a popular fishery in the basin and provides fishing opportunities during the winter months when other hatchery steelhead are not present. Also, we believe that modifications to the hatchery complex could provide room to continue this program and still provide for the late winter steelhead program.

Page 34, 7.0 Recommendations, 2. Elimination of Segregated Type-S Coho program: We do not agree with this recommendation, the Type-S coho program should not be eliminated but should become a program that is fully integrated with the natural population. This program can continue to support harvest as well as act as a conservation reserve in case of a disastrous decline in the abundance of naturally produce coho.

Page 34, 7.0 Recommendations, 3. Reduction in Type-N Coho hatchery production: We support an evaluation of this program, with regards to interactions of hatchery Type-N coho spawning below the dams. As the production of coho salmon in the upper basin increases to the point that triggers reductions in hatchery production, it should be determined by the ACC and Services which coho program would be reduced. It should be noted that in the future, Type-N coho may be the appropriate stock for supplementing tributaries in Merwin and Yale reservoirs, currently Type-N coho eggs are used to supplement natural spawning populations in tributaries in the lower Lewis River using remote site incubators. Also, we are not sure that naturally spawning Type-N coho are a problem in the lower river but this should be investigated as part of the Monitoring and Evaluation program.

Page 34, 7.0 Recommendations, 4. Increase spring Chinook hatchery production: The proposed increase in spring Chinook production is based on modeled expectations and may not accurately reflect the potential for natural production in the upper basin. Additional production space for spring Chinook may also be available after the remodeling of the hatchery such that reductions in other programs may not be necessary. Furthermore, if natural production of coho and steelhead in the upper basin increases to the level where production of hatchery coho and steelhead is

required to be reduced under the Section 8.3 of the SA, then space will be made available for added spring Chinook production.

Thank you for the opportunity to review the draft Plan. We look forward to working further with you to develop the final Plan. If you have any questions or comments, please contact Michelle Day of my staff at 503-736-4734.

Sincerely,

Keith Kirkendall

Keith Kirkendall, Chief
FERC & Water Diversions Branch
Hydropower Division

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# MEMORANDUM

**To:** Frank Shrier, PacifiCorp
Aquatics Coordination Committee (ACC)

**From:** Janne Kaje, Steward and Associates [for the Cowlitz Indian Tribe]

**Date:** February 7, 2006

**Re:** DRAFT Hatchery and Supplementation Plan Comments

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Pursuant to the Lewis River Settlement Agreement (SA), PacifiCorp and Cowlitz County PUD have produced the first draft of the Hatchery and Supplementation Plan (Plan), prepared by Mobrand-Jones & Stokes. While the document provides a great deal of useful information, we feel that it falls well short of our expectations on several accounts and hope that these comments will be useful to the Licensees and their consultants during the preparation of the next draft.

**Major concerns**

1. The Plan relies exceedingly on modeled production capacity as determined by Ecosystem Diagnosis and Treatment (EDT). As we have argued on numerous occasions throughout the relicensing process, EDT was never intended as a tool for estimating the absolute production capacity of a system for any species. It is a useful model with many potential applications primarily related to the relative productivity of a system under various habitat conditions, and for identifying priorities for restoration. We have consistently stated that in our view the production estimates generated by EDT are extremely low, possibly by an order of magnitude. The reintroduction program should not be initiated with the starting assumption that "EDT is right". The Plan should be crafted in such a way that we are able to learn the "true" capacity of the system and optimize the likelihood for success. See next comment.
2. Starting numbers for supplementation are very small (e.g., 100,000 juvenile Chinook). Apparently these values are based on EDT assumptions about capacity. The concept of capacity relates to limitations on the ability of the available habitat to support ever-larger populations. In other words, there are presumably some inherent limits on fish production that – over the long term – will keep average production from exceeding a certain level. The Plan should be structured in such a way that we learn what the capacity of the system is, rather than assuming that we know what it is, based on a model that wasn't designed to do that. It is very difficult to learn what the capacity of the system is 'from below'; i.e., by using a conservative supplementation plan that features a low number of juveniles and a fairly low number of adults, particularly when fish passage produces an as-yet-unknown level of impact. It would be much more useful to start with fairly aggressive levels of supplementation, and INCREASE them over time, until the data suggests that production is

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leveling off despite higher levels of supplementation. In other words, we should be discovering the true capacity 'from above' rather than 'from below'. When starting with low numbers, an even worse situation may develop where depensation occurs due to a too-low density of spawners. Production levels may never even approach 'capacity' if the number of fish is so low that normal production processes are unable to take hold. In this worst-case scenario, we might erroneously conclude that self-sustaining runs are not possible to achieve, when the problem was that we didn't invest enough in the process.

3. The primary goal of the reintroduction program – and of the SA itself – is the establishment of self-sustaining runs capable of meeting production goals for fish in the upper basin. The Plan basically concludes that this is unlikely to happen. First, the assumptions that were used to come up with this bleak conclusion are not well stated, and not verifiable until we actually start getting fish into the basin. The Plan should recommend measures that are going to help us achieve the SA objectives. That may mean, for example, higher numbers of fish devoted to supplementation.
4. The Plan assumes that fish passage standards will be met. That is very unlikely during the early years of the program, especially for juvenile collection efficiency. The Plan should provide a way to calibrate supplementation effort (e.g., number of juveniles and adults supplemented) to quantitative estimates of passage success based on monitoring data.
5. Adaptive management. To say that the SA is clear enough to guide actions - and that adaptive management is therefore not proposed – is absurd. Adaptive management can and should operate on a variety of time-scales. While it is true that the Plan will be updated every five years, that does not mean that adaptation should be absent in the meantime. For instance, if Years 1 and 2 of juvenile fish collection clearly indicate that the Swift juvenile collector is not even close to meeting collection efficiency standards, shouldn't the plan call for the reallocation of effort to ensure sufficient spawners/juveniles in the upper basin?
6. Monitoring data (List on p.7). The bullet that reads "Total juveniles entering reservoirs and collected at bypass facilities" should probably be broken out into two pieces – the number entering reservoirs, and the number being collected. Recall that there is an explicit standard for juvenile capture efficiency. This means that we either need to know both of the values listed above, or we need to assess capture efficiency through other means with a suitably large sample that gives us confidence in the results.
7. For purposes of 'counting' fish in the context of production goals, jacks must not be counted as 'adults'. This would be completely contrary to the intent of the settlement agreement. Monitoring jacks may have some value from an adaptive management perspective, but despite
8. Ocean recruits. The Plan proposes three general answers to the question: "What should we count?", but does not provide anything in the way of a methodology for any of them. We need to see the proposed algorithms coupled with the proposed data sources. All of the 'methods' refer to fish "of all ages". It is our opinion that this must not include jacks. When we discussed ocean recruits in the context of settlement, the term consistently referred to the number of adult fish 'available for harvest' just prior to the beginning of targeted harvest. Jacks are never the target of harvest, even if they are occasionally caught in offshore and

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inshore fisheries. In the case of coho, ocean recruits should refer to the number of adults in the ocean just prior to the onset of offshore troll and recreational fisheries. Currently, for areas north of Cape Falcon, offshore troll and recreational seasons start around May 1st, though only for a few days at a time until the main 'open' season begins in July. Some salmon fisheries south of Cape Falcon open as early as March. So, in the case of coho, the ocean recruit age should be roughly 2.5 (counted from the time of spawning), one year after ocean entry. This should eliminate coho jacks by definition, since jacks typically return in the fall following the spring of ocean entry.

**Minor concerns**

1. The description of juvenile production targets (p.v; also see SA section 8.4.2) is inaccurate in that it does not allow for the possibility of increasing juvenile production in response to survival data. This issue was discussed at length during the SA negotiations. We agreed that these were appropriate starting numbers, and that production would be limited by the physical capacity of the hatcheries (as modified by the SA), but also agreed that if these levels of juvenile production are not enough, the numbers can be increased in order to meet production goals.
2. What is the basis for these escapement goals (p. viii)? Again, we do not know the capacity of the system well enough. Early years should probably have much higher escapement to provide more margin for error in early fish passage implementation and to provide opportunity to monitor for density dependent effects.
3. Escapement goals clearly need to be adjusted when Yale and Merwin production areas come into play as part of reintroduction. While this may occur only after Year 5, the Plan should provide some guidance for these adjustments.
4. For the benefit of the public, it is worth noting that the Hatchery Floor (i.e., minimum) level of production is intended to partially mitigate for the fact that even with the best efforts, intentions and passage technologies, the projects will continue to inundate mainstem and tributary habitats in perpetuity, thus reducing the productive potential of the basin.
5. In Figure 1-1, last box "By Year 4.5", the last sentence should note that the ACC and the Services have a role in deciding whether supplementation should continue.
6. Re hatchery production adjustment in response to increases in natural production. This should refer to the adjustments in the licensees' obligation to pay for production. Presumably, WDFW could continue higher production (unless adverse effects are apparent) if other funds are available.
7. Re Incubation and Rearing for supplementation, please explain the flow index and density index and their significance.

Please feel free to contact me if you have any questions about these comments.

## McCune, Kimberly

**From:** Shrier, Frank
**Sent:** Thursday, February 09, 2006 3:12 PM
**To:** McCune, Kimberly
**Cc:** Lesko, Erik; Olson, Todd
**Subject:** FW: H & S Draft Report

FYI

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**From:** Malinowski, James [mailto:jmalinowski@clark.edu]
**Sent:** Thursday, February 09, 2006 2:13 PM
**To:** Malinowski, James; Shrier, Frank
**Cc:** jkaje@stewardandassociates.com; byrnejbb@dfw.wa.gov; fivestar@pacifier.com; leighcsl@dfw.wa.gov; DOIRA@msn.com; toppacif@teleport.com; gloomis@gloomis.com; jgkaeding@comcast.net; divo@pacifier.com; Michelle.Day@noaa.gov
**Subject:** RE: H & S Draft Report

I should have said over estimating in the last sentence . Use the text below.

> -----Original Message-----
> **From:** Malinowski, James
> **Sent:** Thursday, February 09, 2006 2:10 PM
> **To:** Frank Shrier (frank.shrier@Pacificorp.com)
> **Cc:** jkaje@stewardandassociates.com; Jim Byrne (byrnejbb@dfw.wa.gov); (fivestar@pacifier.com); Curt Leigh (leighcsl@dfw.wa.gov); Dick Doi (DOIRA@msn.com); Dick Dyrland (toppacif@teleport.com); (gloomis@gloomis.com); Jack Kaeding (jgkaeding@comcast.net); John Divitorio (divo@pacifier.com); Michelle Day (Michelle.Day@noaa.gov)
> **Subject:** H & S Draft Report
>
> Fish First supports the comments and recommendations submitted by WDFW & Janne Kaje for the Cowlitz Tribe.
>
> In addition, we recommend that the process for estimating adult ocean recruits be conservative, that is err on the side of under-estimating rather than over estimating those recruits since the estimating process has to be rather imprecise. Fish First is convinced that the models used to estimate pre-dam (above Merwin) productivity grossly under estimated historic populations. We believe that actual productivity was at least 6 to 10 times the model estimates. Those unrealistically low estimates were used to establish the low target numbers adopted in the settlement for hatchery production. We should not compound this failure to set realistic hatchery production targets for project mitigation by systematically over-estimating adult recruits and counting jacks as adults as the draft report suggests.
>
> Jim Malinowski

American Rivers

TROUT UNLIMITED

February 10, 2006

**VIA EMAIL and US Mail**

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**RE: Lewis River Hatchery and Supplementation Plan (FERC Project Nos. 935, 2071, 2111, 2213)**

To Aquatics Coordination Committee Members:

Thank you for the extended opportunity to review and comment on the Lewis River Hatchery and Supplementation Plan (H&S Plan). Trout Unlimited (TU) and American Rivers (AR), collectively the "conservation groups," have been active participants in the implementation of the Lewis River settlement agreement and we are grateful for your continued cooperation in the process. We have reviewed the H&S Plan and supporting documents in detail, as well as the Settlement Agreement (SA), Lower Columbia River Recovery Plan (Recovery Plan) and the Technical Recovery Team (TRT) status report to form the basis of our comments on the H&S Plan.

The Settlement Agreement speaks to the Hatchery and Supplementation program in Section 8. Specifically, it states in §8.1 that "[t]he Hatchery and Supplementation Program **shall be consistent with the priority objective of recovery of wild stocks** in the basin to healthy and harvestable levels." (emphasis added). It goes on to require that the program "shall be consistent with the ESA, applicable state and federal fisheries policies, and regional recovery plans, and should be consistent with recommendations of the Hatchery Scientific Review Group and the Northwest Power Planning Council's Hatchery Review (Artificial Production Review & Evaluation) to the extent practicable." The H&S Plan acknowledges these guiding principles but then does not explain how the proposed actions are in fact consistent with recovery, or the ESA, applicable state and federal fisheries policies and regional recovery plans. This is a glaring omission. Indeed, looking at the Settlement Agreement in the context of these other documents, the priority objective for recovery of wild stocks takes on even great importance.

In 2004 the State of Washington and NOAA Fisheries proposed a salmon recovery plan for the Lower Columbia River watersheds, including the Lewis River. (Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, Dec. 14, 2004) (hereinafter "Recovery Plan"). This recovery plan is a requirement under the Endangered Species Act, 16 U.S.C. §§1533 (f). The recovery plan found that all of the stocks in the Upper Lewis River had a high risk of extinction and the overall goal for salmon recovery is to reverse that risk completely, especially spring Chinook. Furthermore, the recovery plan found that "harvest has moderate impacts on spring Chinook and coho, but its effects on winter steelhead are minor. Hatchery impacts include domestication of natural populations (most applicable to Chinook and coho) and ecological interactions which can impact all species to variable degrees. Hatcheries moderately impact all three species in the upper North Fork Lewis" (pg G-183). Interestingly, the recovery plan focused on the analysis and development of the H&S Plan to address these impacts, an analysis and discussion that is completely lacking within the H&S Plan, including a complete lack of any reference to the recovery plan itself! The H&S Plan and its supporting documents do not address how the proposals within the H&S Plan will meet the goals of the recovery plan, nor how, in fact some of the recommended changes move away from the recovery goal.

Second, the federal government convened an independent science team, the Lower Columbia/Upper Willamette Technical Recovery Team. This TRT is operating to satisfy the recovery requirements under the Endangered Species Act. In July, 2004, the TRT released a status report on the viability of the listed salmon stocks in the Lower Columbia River. (McElhany et al., 2004). Relative to the Lewis River, the status report concluded that Lewis River Spring Chinook and coho had a high extinction risk (low persistence), while the winter steelhead had a high to medium extinction risk (low to moderate level of persistence), and summer steelhead had a very high risk of extinction (very low level of persistence). As a result of these conclusions, the recovery plan requires that all "Upper North Fork Lewis River salmon and steelhead will need to be restored to high or medium levels of viability to meet regional recovery objectives" by ensuring that "populations are productive, abundant, exhibit multiple life history strategies, and utilize significant portions of the subbasin." (pg. G-121). The recovery plan specifically states that the "main threats from hatchery released salmon are domestication of wild fish and ecological interactions between hatchery smolts and wild fall Chinook, chum, and coho in the lower river. The main threats from hatchery steelhead are potential domestication of the naturally-produced steelhead as a result of adult interactions or ecological interactions between natural juvenile salmon and hatchery released juvenile steelhead." (G-171).

Third, NOAA Fisheries listed Lower Columbia River coho as a threatened species on June 28, 2005. (70 Fed. Reg. 37217). This listing impacts the H&S Plan in terms of the predation on coho stocks and the hatchery production, yet is not referenced at all in the H&S Plan. Specifically, the proposed listing of Lower Columbia River coho cites to high hatchery production and harvest rates as the two leading causes of decline of coho and the very reason for the listing itself. The proposed listing expresses "concern that the magnitude of hatchery production continues to pose significant genetic and ecological threats to the extant natural populations in the ESU." 69 Fed. Reg. 33102, 33133 (June 14, 2004). While the Lewis River S-type and N-type hatcheries are included in the actual listed population "NMFS' assessment of the effects of artificial propagation of the ESU extinction risk concluded that hatchery programs collectively mitigate the immediacy of extinction risk for the Lower Columbia River coho ESU in-total in the short term, *but that these programs do not substantially reduce the extinction risk of the ESU in the foreseeable future.*" *Id.* (emphasis added, internal citations omitted).

Finally, two cases have recently ruled that federal and state agencies must meet a recovery standard when implementing the Endangered Species Act, specifically in critical habitat and jeopardy decisions. Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service, 378 F.3d 1059, 1069 (9th Cir. 2004); and National Wildlife Federation v. NMFS, CV 01-640-RE (D.Or. 2005) (2005 WL 1278878). These two cases are critical in our review of the H&S Plan. They give more than priority weight to the language in the SA, but in effect give it the force of law.

With these overarching documents guiding the necessary management in the Lewis River, we turn to specific comments within the H&S Plan.

## 1. Hatchery Production

The H&S Plan is missing a foundational component: the status and health of the wild, naturally spawning stocks within the basin, both of listed salmon and steelhead as well as resident fish such as bull trout, cutthroat and lamprey. It is impossible to adequately evaluate the hatchery proposal without this watershed context, especially the levels of hatchery production. While we were able to track down some of the information in the TRT status report, it should be one of the first pieces of information contained in the H&S Plan and should include other species such as cutthroat trout (anadromous and resident), bull trout, and lamprey. These inter-specific interactions are as important as the intra-specific interactions. This is of special concern with the production of resident trout, kokanee and the summer and early winter steelhead programs. For example, a WDFW study in the Cowlitz system found listed anadromous fish in the stomach contents of 3% of the resident fish stocked into the reservoir. Finally, this information is required under SA § 8.2.2 et seq.

The H&S Plan immediately proposes to produce the maximum level of juveniles called for in the SA without first exploring how these production levels impact recovery, and second looking at ways to increase the smolt to adult survival rates. Notably, the plan proposes to release 1.35 million Chinook to achieve a target of 12,800 returning adults, a success rate of less than 1%. Similarly, steelhead smolt production of 275,000 for only 13,200 returning adults represents a survival rate of less than 5%, and the coho production of 1.8 million smolts results in barely a 3% success rate. We were unable to find the survival data referenced in the Lewis River Fish Planning Document (Cramer and Associates, 2004) that is used to justify this output. Furthermore, the survival data are low relative to other studies on hatchery fish, and abysmally low compared to wild fish (Berejikian and Ford, 2003; Chilcote, 2003). Given the ESA goal of recovering wild Spring Chinook, coho and steelhead in the Upper Basin, which must necessarily pass through the Lower River and interact with the nearly 3.5 million smolts being released and 86,000 returning adults, it begs the question, especially in light of the TRT status report, recovery plan and Lower Columbia River coho listing, of whether the production will undermine the recovery goals. (*See also* Nickelson, 2003). The H&S Plan makes no attempt to propose alternatives that would alternatively reduce juvenile output but maintain the number of adult targets outlined in the SA. Further, given these concerns, the H&S Plan should also address why the juvenile output increases over time but the hatchery targets do not. This trend suggests an inherent inefficiency and failure in the hatchery plan proposal.

Finally, the Conservation Groups believe that the 1:1 credit mechanism that reduces hatchery production as natural production exceeds threshold levels is critical not only to the success of recovery efforts, but also to our continued support of the SA. The rationale behind the reduction (and corresponding increase in other years), is that as the wild fish rebound, the need for the hatchery fish both from a recovery and mitigation perspective, is reduced. Indeed, continuing to produce large numbers of hatchery fish while wild fish are rebounding flies in the face of the recovery plan and the TRT status report. The clear language of the SA in § 8.3.2.3 states that this is a fish to fish ratio, not a cost ratio. In

fact, based on data compiled by Berejikian and Ford (2003), and the ratio used in the Cowlitz River Fisheries and Hatchery Management Plan, this is a very liberal ratio that maintains high levels of hatchery production. Any re-interpretation of this reduction mechanism at this late stage would prompt the Conservation Groups to reconsider their support for the SA.

**2. Segregated Program for an Integrated Purpose**

The Conservation Groups support the Hatchery Scientific Review Group (HSRG) approach and the use of "segregated" and "integrated" concepts in hatchery reform (H&S Plan, pg. 8). Thus, we are perplexed by the use of segregated type salmon for reintroduction into the upper watershed. While we understand that there simply are no wild fish left in the upper watershed, there are certainly "naturalized" hatchery fish in the lower basin that could be passed into the upper watershed for spawning, thus eliminating the impacts of domestication on the reintroduction plan.

The H&S Plan appears to propose to use a segregated hatchery program for recovery into the upper watershed, an inherently integrated type purpose. The H&S Plan should clarify how it will be successful in using these out of basin, domesticated stocks for a reintroduction strategy in the upper basin. The plan suggests that it will use hatchery origin broodstock in the upper basin only if the naturalized hatchery returns are insufficient to seed the upper watershed habitat. However, that lack of adult returns indicates the segregated reintroduction program is not working. How will introducing more segregated type fish, which have a very high risk of reducing the fitness of the few naturalized chinook that are returning (*see Recovery Plan pg. G-178, G-183)*, actually improve the success of the program? Furthermore, there is an inconsistency within the H&S Plan in that on pg vi, the plan states that as the populations in the upper watershed become "more established," the hatchery releases will be limited to less than 10% of the total escapement, but in the actual plan itself on pg. 16 states that hatchery fish will only be released, without limit, if the adult returns are insufficient. This inconsistency needs clarification and the phrase "more established" needs to be further defined. Will the program convert to an integrated type program in the meantime to continually supply hatchery fish in the upper basin? Instead, the H&S Plan proposes to convert to an integrated program for Spring Chinook and coho at year 12. If the program is successful in years 1-12, why is it necessary to even convert to an integrated program?

We were perplexed as to why the size of juveniles and the "smolt quality" would be the same for both the upper and lower watershed, when the goal of the releases in to the lower watershed were simply as a segregated harvest program. The similarity of size and timing at release could impact the supplementation program by increasing competition for food, attracting predators, competition for overwintering habitat or other "safe" habitat. How will the different programs prevent these interactions? While we understand the need to release smolts that are the same size and timed with wild smolts in a reintroduction effort (and integrated program), we question how this strategy is consistent with a segregated program based on the definitions provided, especially Table 2-2 on pg. 11 of the H&S Plan. The H&S Plan does discuss some of the potential

downstream impacts of a segregated program, and states that the hatchery fish will not make up more than 5 percent of the natural spawners in the lower river. We support this limit and believe it should be more prominent in the monitoring and evaluation discussion.

The use of an integrated program for steelhead is also confusing in light of the fact that the other programs will not be integrated. While we support the use of the integrated program for the reintroduction efforts, we would like to see an elaboration on why there is differential treatment for the steelhead program. We would also like to see a discussion as to why the wild adult steelhead are being incorporated into the broodstock program and not just passed into the upper basin to jump start the population. What is the necessity of hatchery intervention by way of an integrated program? How will the integration of wild fish into the broodstock avoid mining the wild population when the wild population has a better spawning success rate in the wild than planted hatchery fish? (Berejikian and Ford, 2003). There should be a discussion of the status of the wild population embedded in the supplementation proposal. Furthermore, the H&S Plan should explain, in addition to the 12 year collection cycle, the number of wild adults the program will integrate as broodstock to overcome the genetic diversity and founder effect issues, and how those adults will be differentiated from the previous generations wild offspring to prevent a "grandfather" effect. Finally, we support the use of the live-spawning but would recommend that the ACC consider planting the live spawned broodstock in the upper watershed to improve nutrient enrichment that has been absent from the upper basin for so long. We find it hard to see the value in placing the live spawned broodstock in the lower river.

We also disagree with the H&S Plan conclusion on pg. 15 that if the reintroduction efforts are found to be "unachievable" than an Integrated program would be appropriate to continue releases in the upper watershed. The logic simply doesn't follow. First, this statement all but admits that the segregated program to jumpstart this reintroduction effort is not sufficient. Second, it ignores the fact that there are naturalized fish in the lower watershed that can be transported into the upper watershed, and that there will be naturalized fish in the upper watershed already. How will removing those fish from the basin to start an integrated program that exposes the fish to the selection effects of the hatchery environment, only to place them back in the upper watershed, solve the problem? This suggestion simply perpetuates hatchery production in the face of failure of the priority objective. Further, the admission of failure contradicts the recovery plan goals of achieving high viability for the upper basin stocks in order to reach recovery. We believe that an integrated program should be used initially and that if the monitoring and evaluation indicates the program is not succeeding, then the ACC must take a hard look at the collective actions in the watershed to determine how recovery is achievable. There is simply nothing in the H&S Plan to suggest that switching from a Segregated to an Integrated program for reintroduction in the face of failure will actually change anything.

We also disagree with the H&S Plan's sole emphasis on spring Chinook. Given the high extinction risk for Lower Columbia River coho, we believe the coho should be given equal priority and weight in recovery.

The discussion of ocean recruit computation should be expanded to explore the plusses and minuses of each of the different methodologies, as well as the ease of differentiating between the hatchery and wild fish (not just Upper Lewis River supplemented fish) in the computation. Furthermore, the computation should explore how harvest is calculated. For example, there is currently a requirement by NMFS that Washington and Oregon recalculate the harvest impacts of the spring chinook gill net fishery on the Lower Columbia River to determine if there are differential impacts in various rivers. That research is ongoing, which increases the uncertainty around the calculation of harvest impacts. At the very least, the different methodologies should explain what assumptions are being made. Finally, we believe that the different methodologies should all explicitly include jack counts. Jacks have been found to contribute to the spawning population, increase age structure and life history diversity such that they should be considered in ocean recruit methodologies.

**3. Juvenile supplementation**

The H&S Plan proposes juvenile supplementation in addition to adult supplementation in the upper watershed, but does not explain its rationale. The juvenile production requirements are provided in the SA §8.4.1, but only to the extent that they are consistent with recovery or that alternatives for better efficiency in production are unavailable. The H&S Plan should explain the recovery rationale and explore the alternatives.

Until further explanation is given, we are very skeptical of the use of juveniles for supplementation. This skepticism is based in part on the Lower Columbia Recovery Plan when it states "main threats from hatchery released salmon are domestication of wild fish and ecological interactions between hatchery smolts and wild fall Chinook, chum, and coho in the lower river. The main threats from hatchery steelhead are potential domestication of the naturally-produced steelhead as a result of adult interactions or ecological interactions between natural juvenile salmon and hatchery released juvenile steelhead." (G-171). Increasing the hatchery juvenile supplementation will therefore increase the risk from hatcheries and move the watershed further from its recovery goals.

In addition to the Recovery Plan, additional science reviews have also suggested that the hatchery juvenile releases are not conducive to a recovery strategy. According to NOAA Fisheries' own independent Recovery Science Review Panel (RSRP), "one of the major factors affecting the status of listed Pacific salmon is the potential negative effect that hatchery fish exert on populations of wild fish." (Meeting Notes Aug. 30-Sept. 1, 2004). The RSRP goes on to state that "despite recent improvements in the practices of some hatcheries... hatcheries will never produce salmonids with the same evolutionary potential as those spawned in the wild." *Id.* Thus, placing more hatchery raised juveniles

into the Upper Basin will not reach the recovery requirements as quickly as placing adults that spawn naturally in the wild. This position was further supported in a recent modeling study by Oosterhaut et. al., 2005, which found that even the most favorable hatcheries did not result in recovery. This has been supported in other research as well (Fleming, et. al., 1994; Waples, et. al. 1994; Byrne, et. al., 1992; Hilborn, 1992; and Miller, et. al., 1990) which suggest that hatcheries do not provide the expected increase in wild stocks, when used as supplementation, and may result in replacement rather than enhancement of native stocks.

Given the affirmative duty on the part of NOAA Fisheries, U.S. Fish and Wildlife Service, and FERC to show that the proposed activity supports recovery under the ESA and consequently the SA, we do not believe that the juvenile supplementation is warranted at this time. Furthermore, there are additional ecosystem benefits to focusing on adult, rather than juvenile, releases including the preparation of the spawning grounds, nutrient supplementation and the natural selection that will occur when those offspring emerge from the gravel.

**4. Adult Supplementation**

We generally support the use of adult supplementation for the reintroduction of species. However, the H&S Plan raises some questions regarding why the proposal calls for using segregated type hatchery origin adults instead of simply passing the "wild" chinook, steelhead and coho in the lower river to the upper watershed. The goal of the program is to naturalize the hatchery stocks, yet the lower river has many "naturalized" stocks already that could easily be transported into the upper watershed without necessitating an additional stress and selection pressure of passing through the hatchery. Furthermore, these lower river naturalized stocks are further removed from the hatchery environment and more likely better adapted to the natural ecosystem.

We do support the supplementation strategy for a minimum of 12 years, and encourage its continuation through year 15 to ensure that the appropriate number of generations is captured in the monitoring and evaluation. We also support the use of jacks in the broodstock to capture the entire life history diversity in the upper watershed (Young, 1999; Van Doornik, 2001). All remaining jacks should be passed upstream and allowed to spawn naturally.

**5. Marking**

We fully support the marking strategy in the H&S Plan and the differential marking strategy for different stocks. We therefore support a complete selective fishery on the Lewis River stocks, and would like to see further discussion of the harvest management and impacts discussed in the H&S Plan. The executive summary of the H&S Plan makes recommendations that we support but does not explain the basis for these recommendations, the harvest impacts, direct or incidental, on the wild, native stocks either in the lower river or ocean, or even the impacts of catch and release fishing. A

discussion of this information is necessary to provide context to the recommendations as well as support the high continued hatchery production.

**6. Resident Fish**

The H&S Plan should address the impacts of the stocking of resident fish on other resident species such as bull trout, cutthroat and lamprey. Furthermore, WDFW research in the Cowlitz River has indicated that some anadromous fish have passed into the reservoirs and become food sources for the stocked resident fish. The H&S Plan should discuss these other factors, in addition to the call for monitoring and evaluation on pg. 26.

**7. Monitoring and Evaluation**

The Monitoring and Evaluation Plan is comprehensive in the type of information collected, but does not detail the methods, or the mechanism for distinguishing these parameters for the hatchery and naturally produced fish. (We acknowledge that the metrics for evaluating the data will be developed by NMFS and USFWS at a later date). It is imperative that the information collected apply separately to the hatchery fish and wild fish. Furthermore, there should be a discussion of how this type of information will be rolled up to evaluate the impacts of the hatchery program on the natural populations and the overall success of the hatchery programs in meeting their stated goals. The relevant information should also explore the impacts on other native, resident fish to capture any inter-species impacts. There is the potential for large hatchery production to impact the bull trout and cutthroat trout in the system that should be monitored and evaluated. Finally, it is necessary to describe the monitoring and evaluation that will go into determining the success of the supplementation program for the purposes of meeting the 1:1 crediting ratio required for wild fish returning above the threshold. (SA, §8.3.2.3).

The Conservation Groups strongly recommend the development of an adaptive management plan. There failure to include an adaptive management plan undermines the very purpose of monitoring and evaluating the programs. We disagree that the SA clearly describes the approach and actions that must be taken. In fact, the SA clearly states that all of the actions are subject to the recovery goals of the system and the ESA. Failing to include an adaptive management plan in the H&S Plan in essence cements the actions in place regardless of the contribution or deviation from recovery goals and the ESA. To this end, we support the use of index stocks discussed in section 4.3.4 of the H&S Plan.

**8. Expected outcomes**

The expected outcomes of the supplementation program are unacceptable. There is simply no justification for the failure of the supplementation and the continuation of the hatchery mitigation programs in spite of the failure. The inability of the program to not only meet the modeled targets from the EDT modeling, never mind the historical numbers which are magnitudes higher than the EDT modeling (Recovery Plan, G-131),

indicates that the H&S Plan proposal falls short of what is needed. Based on the priority goal of recovery as well as the requirement under the ESA for the restoration of spring chinook, coho and steelhead into the upper watershed, the H&S Plan must take a precautionary approach and strive to achieve more, not less.

In addition the expected outcome details the potential for high numbers of hatchery surplus fish. We believe the H&S Plan should address these surplus fish in years 1-12 and not just in recommendations after year 12.

**9. Recommendations**

The H&S Plan makes a number of recommendations. First on pg. 9, it explores different options with respect to years 12-17 presuming that the reintroduction efforts into the upper Lewis River are successful. While we are generally supportive of these recommendations, we do not believe they should be included in the H&S Plan at this time because they raise more questions than they answer and are clearly based on hypothetical future scenarios with hypothetical data.

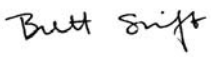
For example, we do not understand the recommendation that if the reintroduction fails, the hatchery programs should convert to an integrated program. If the reintroduction of segregated fish that have "naturalized" over 3-5 generations has not worked, how will an integrated program solve the problem by adding less fit fish into the upper basin? The second option is to convert to an integrated program if there is a catastrophic failure in the upper watershed. But isn't that the current situation? Why is this option only proposed starting in year 12? Relative to option 3, what is the justification for continuing the segregated program downstream if recovery has failed? First and foremost, we do not believe failure is an option under the Settlement Agreement, or federal law. The notion that in the face of failure we continue to achieve the second objective of harvest and hatchery production in the lower river seems to us to continue the very problems that have caused the listing of some of the wild, native fish in the first place. We do not believe this is an appropriate course of action.

The H&S Plan also makes recommendations in Section 7. We support these recommendations in principle, but believe there should be more discussion of the recommendations and how they contribute to recovery.

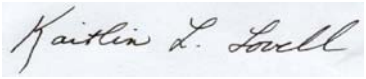
**Conclusion**

We generally support the H&S Plan but believe there could be significant improvements in the discussions and supporting information in the final H&S Plan. There are other components of the H&S Plan which we believed should be changed. Thank you for your consideration of these comments.

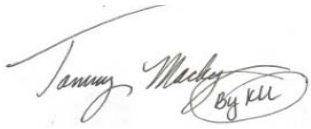
Sincerely,



Brett M. Swift
American Rivers



Kaitlin L. Lovell
Trout Unlimited



Tammy Mackey
ACC Representative for
American Rivers and Trout Unlimited.

## References cited


Berejikian, B., and M. Ford. A review of relative fitness of hatchery and natural salmon. A preliminary review draft. NOAA Fisheries. Dec. 19, 2003. Available at: http://www.salmonrecovery.gov/remand/analysis_reports/fitness_paper_external_review_draft_121903.pdf

Byrne, A., TC Bjorn, and JD McIntyre. 1992. Modeling the Response of Native Steelhead to Hatchery Supplementation Programs in an Idaho River. North American Journal of Fisheries Management 12:62–78.

Chilcote, M. Relationship between natural productivity and the frequency of wild fish in mixed spawning populations of wild and hatchery steelhead (*Oncorhynchus mykiss)*. 60 Can. J. Fish. Aquat. Sci. 1057 (2003).

Fleming I.A. 1994. Captive breeding and the conservation of wild salmon populations. Conservation Biology 8(3):886–8.

Hilborn, Ray. 1992. Hatcheries and the Future of Salmon in the Northwest. Fisheries; 17:5–8

Miller, William H. - Dworshak Fisheries Assistance Office, U.S. Fish and Wildlife Service, 1990, Analysis Of Salmon And Steelhead Supplementation, PART 1: Emphasis on Unpublished Reports and Present Programs; PART 2: Synthesis of Published Literature; PART 3: Concepts for a Model to Evaluate Supplementation, Report to Bonneville Power Administration, Contract No. 1988BP92663, Project No. 198810000, 243 electronic pages (BPA Report DOE/BP-92663-1)

McElhany, Paul, Tom Backman, Craig Busack, Steve Kolmes, Jim Myers, Dan Rawding, Ashley Steel, Cleve Steward, Tim Whitesel, Chuck Willis. July 2004. Status Evaluation of Salmon and Steelhead Populations in the Willamette and Lower Columbia River Basins. Northwest Fisheries Science Center, Seattle, WA. Available at: http://www.nwfsc.noaa.gov/trt/wlc_pop_eval_7_28_04.pdf

Nickelson, T. The influence of hatchery coho salmon (*Oncorhynchus kisutch)* on the productivity of wild coho salmon populations in Oregon coastal basins. 60 Can. J. Fish. Aquat. Sci. 1050 (2003).

Oosterhout, Gretchen R., Charles W. Huntington, Thomas E. Nickelson, and Peter W. Lawson. 2005. Potential benefits of a conservation hatchery program for supplementing Oregon coast coho salmon (*Onchorhynchus kisutch)* populations: a stochastic model investigation. 62 Can. J. Fish. Sci. 1920-1935.

Recovery Science Review Panel (RSRP). 2004. Report from Meeting August 30-September 2, 2004. Seattle, WA. Available at: http://www.nwfsc.noaa.gov/trt/rsrp.htm

Van Doornik, Donald M, Michael J. Ford, David J. Teel. 2001. Patterns of Temporal Genetic Variation in Coho Salmon: Estimates of the Effective Proportion of 2-Year-Olds in Natural and Hatchery Populations. Transactions of the American Fisheries Society 131:1007-1019

Waples, RS and C. Do. 1994. Genetic risk associated with supplementation of Pacific salmonids: Captive broodstock programs. Canadian Journal of Fisheries and Aquatic Sciences. Vol. 51, no. suppl. 1.

Young, Kyle A. 1999. Environmental Correlates of Male Life History Variation among Coho Salmon Populations from Two Oregon Coastal Basins. Transactions of the American Fisheries Society 128:1-16

## McCune, Kimberly

**From:** LouEllyn_Jones@fws.gov
**Sent:** Friday, February 10, 2006 12:39 PM
**To:** McCune, Kimberly
**Subject:** Hatchery and Supplementation Plan Lewis River

The USFWS defers to NMFS for comments on this plan.

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State of Washington
**Department of Fish and Wildlife**
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February 9, 2006

Ms. Kim McCune
Project Coordinator
PacifiCorp
825 NE Multnomah Street, Suite 1500
Portland, Oregon 97232

SUBJECT: Comments on PacifiCorp and Public Utility District No.1 of Cowlitz County's November 2005 Draft Lewis River Hatchery and Supplementation Plan.

Dear Ms McCune;

Washington Department of Fish and Wildlife is providing comments on PacifiCorp and Public Utility District No. 1 of Cowlitz County's November 2005 Draft Lewis River Hatchery and Supplementation Plan (Plan). The draft plan has been reviewed by our Habitat Program, Science Division, Olympia and Regional Fish and Hatcheries Management staff. This document provides a useful framework, but additional effort will be necessary to achieve the Aquatic Coordination Committee's goal of a final usable Hatchery and Supplementation Plan. Our comments are arranged with general issues addressed first followed by page specific comments.

We are concerned with the proposed draft plan prepared by Mobrand-Jones and Stokes because their document departs from the letter and intent of the Settlement Agreement and it appears to have been prepared without consideration of the various outside influences and expectations that drive hatchery production decisions. We were also disappointed to find specific recommendations in the plan that are inconsistent with the goals identified in Section Eight of the Settlement Agreement.

Plan Inconsistencies With Settlement Agreement:

In what appears to be a major divergence from the Settlement Agreement, the draft plan seems to propose a plan of hatchery operations that does not achieve the Hatchery Targets as identified in Section 8.3.1 of the Settlement Agreement. Section 8.3 of the Settlement Agreement says: "The Hatchery and Supplementation Plan shall be designed to achieve the numeric Hatchery Targets". Table ES-6 suggests that the outcome of the Plan will provide 72,700 average adult ocean recruits. As you know, the Settlement Agreement calls for 86,000.

In addition, the time frame and methods for handling juveniles as discussed in the draft plan are

inconsistent with those specified in the Settlement Agreement. The draft plan is also inconsistent in the recommendations for supplementation of adults.

Section 8.2.2 of the settlement agreement provides a list of the items that must be included in the Hatchery and Supplementation Plan. It is not clear where or how this draft plan incorporates the specific information items identified in Section 8.2.2. The revised plan should include references to the location of these required items.

The draft plan also proposes the elimination of fish production programs that directly support the harvest goals identified in Section 8.1 of the Settlement Agreement.
Section 8.1 includes the following: "The goals of the program are to support (i) self-sustaining, naturally producing, harvestable native anadromous salmonid species throughout their historical range in the North Fork Lewis River Basin, and (ii) the continued harvest of resident and native anadromous fish species (the "Hatchery and Supplementation Program")." The proposal to eliminate the early winter hatchery steelhead program will result in the elimination of the very popular and economically valuable winter steelhead fishery in the Lewis River. Eliminating the hatchery fish would result in eliminating the fish on which the fishery depends.

To be clear, the Department entered into the Settlement Agreement with the understanding that all existing fisheries for early and late coho, early winter and summer steelhead, kokanee, and resident rainbow would continue. That understanding is included in the language regarding harvest opportunity in 8.1, resident fishing opportunity included in Section 8.6 and the identification of hatchery broodstock that are identified in Section 8.4.3.

Recommendations:

All four recommendations developed by your consultant, and included in the draft Lewis River Hatchery and Supplementation Plan are inappropriate and should be retracted. They fail to meet the twin goals of the Hatchery and Supplementation Program. The goals of the program are to support (i) self-sustaining naturally producing, harvestable native anadromous salmonid species throughout their historical range in the North Fork Lewis River Basin, and (ii) the continued harvest of resident and native anadromous fish species. The recommendations are also inappropriate because they propose to exceed the production caps identified in section 8.4 of the Settlement Agreement.

When it is complete the Hatchery and Supplementation Plan must integrate with the larger world of fisheries management. The various outside influences and expectations that drive modern hatchery production decisions including harvest expectations, agreements, treaties and policy at the local, state, regional, and international levels are critical components that must be considered during the development of this plan. Eliminating hatchery programs on the Lewis River as proposed by the draft plan has far reaching consequences because of the direct link between those programs and established fisheries.

<u>Specific Comments</u>

Executive Summary
Page. iv, fifth paragraph – The list of sources for recommendations used in the development of this plan fails to include the Fish Planning and Hatchery Review Document (AQU18). Section 8.2. of the settlement agreement clearly directs the use of this specific document.

Page. v, Table ES1-needs to specify Adult Hatchery Ocean Recruits as stated in Table 8.3.1 of

the SA. The intent was never to include jacks – a run of jacks doesn't meet our view of success nor does it achieve the intent of the Outcome Goal identified in Section 3 of the Settlement Agreement. The Fish planning document page 237- Adult production Goal Monitoring states **"**The Lewis River adult production goal for Spring Chinook, Coho and steelhead includes total adults produced prior to harvest. This is referred to as ocean adult abundance. Monitoring would include total accounting of adults including ocean, Columbia River, and Lewis harvest, as well as escapement to the hatcheries and spawning grounds."

Page. vi, Table ES4 Hatchery Juvenile Releases – not consistent with SA Section 8.5.1 or Lewis River Hatchery Review Document Appendix Table D16 –D18.

Page. vi, Table ES-5 These fish sizes at release seem larger than those for naturally produce smolts of the same species.

> Page. vi, Table ES-5 The table should show current size at release at hatcheries. Current Coho program release size is 16 fish per pound (fpp) and steelhead should be 4.8 fpp. The size at release for coho and steelhead supplementation juveniles, as required in the SA Section 8.5.1, needs to be developed. An evaluation that correlates size at release with adult return ratio should be completed before changes are made.

Page vi, Supplementation program – "control hatchery releases to 10% and below".
Use of hatchery origin recruits (HORs) for upper river supplementation will decrease when wild adults are produced and can be successfully collected or provided with downstream passage from the upper system. Over generations, natural origin recruits (NORs) should be managed to outnumber HORs as populations are established but putting a 10% cap on HORs might hinder reintroduction success and upriver productivity especially if upriver habitats are dependent on HORs for nutrients.

The Supplementation Program Description of the integration is not fully developed. A more developed description is needed that includes short term, mid-term and long term objectives, the 10% hatchery escapement and 50% natural origin broodstock (NOBs) could be long term objectives, but would require more development before adopted.

Page vii, fourth paragraph - The discussion on artificial production management includes an incorrect distinction between native spring Chinook, coho and steelhead that are produced at the hatchery and "non-native" winter and summer steelhead that are reared to produce a smolt that maximizes adult production. To designate these species as native and non-native is incorrect and could lead to inappropriate application of the goals for the Hatchery and Supplementation Plan. Chinook, coho and steelhead are all native to the Lewis River. A correct differentiation that is consistent with the Settlement Agreement would be to call them transported and non-transported species.

Page vii, Fish Marking - The draft H&S Plan states that all hatchery fish released downstream of Merwin Dam would be marked by removing their adipose fin. "Juvenile fish captured at collection facilities at Swift no. 1 Dam (and eventually other projects) would be marked with Coded-Wire-Tags located either in the cheek or nose." Currently, a portion of the Spring Chinook, early and late Coho have a double index group that are not adipose clipped. There is a need to look at alternatives in marking location and technology such as elastomers, V.I., etc.

Page vii, - Several elements through out the draft H & S Plans deal with the proposed delay of potential integration plans of coho and spring chinook programs including the Executive

Summary, H & S Plan Sections 2.0, 3.0, 4.0 and 6.0. Delaying integration of the coho and spring chinook programs could make sense if the upriver re-introductions and resultant M & E plans will provide valuable recovery information from the start of the re-introduction program, such things as reproductive success of hatchery fish would be valuable knowledge for current hatchery reform efforts. However, this capability would need to be available immediately, not in 9-12 years. Development and construction of fish collection or passageway facilities at all dams and the evaluation of those facilities would be required prior to undertaking a study of this type (This has taken 10 years at Cowlitz Falls).

If this research is not proposed, then the option of integration should be examined in the short term and not delayed until ~2015-2018. Current coho and spring chinook hatchery populations are included in NOAA Fisheries Hatchery Listing Policy (June 2005) and as such are included a part of the listed populations. With the coho and spring chinook components being part of the listing policy, integrated programs could begin during the reintroduction of these species in this watershed. Conceivably, some level of wild adults produced downstream could be used to begin integrating the hatchery broodstocks. Hatchery programs listed in Table 2-1 on page 9, could take advantage of productivity in the lower river in combination with future upper river productivity. Populations above the dams and below the dams can have different purposes as spelled out in Table 2.1, but basin wide it would not be consistent to operate segregated programs below the dams except for segregated early timed winter and summer steelhead programs. For example, running the Lower River coho as segregated (Type N coho) will be difficult with studies on Cedar Creek system indicating important numbers of wild late type coho are produced along with several other tributaries.

Case in point for beginning integration earlier: If Type S coho upriver supplementation consists of 9,000 adults (8,500 Hatchery Origin Recruits (HORs) and 500 Natural Origin Recruits (NORs), the ratio will be heavily dominated by HORs for the first couple of years, maybe longer, depending on the success of that initiative. The current hatchery broodstock could start at minimal integration level of 10% (HSRG recommendations) simply by using 80 NORs out of the 800 total broodstock needed. This could also be the case for Type N coho and to a certain extant with spring chinook. If coho survivals similar to those in 2000–2004 return in future years, possibly higher rates would be realized in the short term. With the first return of NORs from upriver productivity, the ratio of wild fish to HORs will increase for both the upriver escapement and integration of NOBs into the hatchery program at higher levels. Although hatchery integration levels will initially be below guidelines for well integrated programs (HSRG recommendations), even integration into the broodstock (pNOB) at 20 – 30% contribution has been modeled to improve the fitness of the natural spawning population (AHA modeling). Appropriate levels of NOBs should be determined while minimizing mining effects on the current natural spawning population downstream of Merwin Dam.

Page viii HARVEST – The draft H&S plan recommends no harvest in the upper basin on unmarked fish until populations meet escapement goals for that species. This should be a decision made in the future once more is known about the productivity of the upper basin and the success of the reintroduction program. Transport of additional hatchery fish could form the basis for earlier harvest opportunity in the upper watershed. This discussion of harvest and escapement goals should be deleted because this is not a harvest plan. A discussion of the ideal number of fish for utilizing upstream habitats should be discussed in terms of transportation targets. The settlement agreement proposes to transport all naturally spawned adult fish that are the product of upstream habitats.

Page. ix – ADAPTIVE MANAGEMENT – a mechanism needs to be in place so that for example with the new facilities, changes can be made in the 1st 5 years, as per SA Section8.1

paragraph 2.

Page. ix EXPECTED OUTCOMES – the intent of the SA was not to include jacks in the Ocean recruit analysis. If we rely on high number of jacks we would not meet outcome goals of Section 3 of the SA.

Page. x - Table ES-6 The title specifically identifies the spring Chinook program. The table also includes coho and steelhead. The title should match the table.Page. x - Table ES-6 identifies the expected outcomes of the Hatchery and Supplementation Plan. It suggests that two of the three anadromous species will fail to meet the Settlement Targets.

Page. x- The discussion in the second paragraph incorrectly refers to the Settlement Agreement as a source for including jacks in the fish production analysis. The settlement discussions revolved around the concept of pre-harvest ocean recruits. It seems unlikely that a jack would be considered ready for harvest in the ocean. Section 8.3 specifically includes only adults. In addition fisheries professionals would generally agree that a run made up of a high percentage of jacks would not be a desirable fish management output.

Page. x - Recommendations. All four recommendations should be retracted. They fail to meet the twin goals of the Hatchery and Supplementation Program. The goals of the program are to support (i) self-sustaining naturally producing, harvestable native anadromous salmonid species throughout their historical range in the North Fork Lewis River Basin, AND (ii) the continued harvest of resident and native anadromous fish species. The recommendations are also inappropriate because they propose to exceed the production caps identified in section 8.4 of the Settlement Agreement.

INTRODUCTION

Page 2 paragraph 3 Strike sentence "As hatchery production is reduced…", this sentence as written makes many assumptions that are not provided and without the associated assumptions is not appropriate to include.

Table 1.1 Hatchery Targets box should include (adult ocean recruits)

Table ES 1.1. Table title is adult threshold levels. The assumption was these numbers do not include jacks. Jacks have less biomass than adults and are viewed by most anglers and commercials as of less value than a true adult.

Page 3 Under the box, By Year 4.5, the text states late coho and should state early coho.

Page 4 Figure 1-2. Flow chart. By Year 8 box indicates adults into Yale. The most likely spawning stream will be Cougar Ck. which containing robust populations of kokanee and healthy numbers of listed bull trout. Coho and steelhead spawning could have negative interactions for bull trout and kokanee with superimposition of spawning over existing bull trout redds. In 2005, bull trout were present from 8/8 – 11/23 occurring in both early and late coho spawn timing. Kokanee and bull trout spawning areas will need specific monitoring effort and bull trout spawning may require some additional protection.

Page 4 Under the By Year boxes 13 and 17 the text states late coho and should state early coho.

Page 6, paragraph 2 Show where each requirement of SA Section 8.2.2 is met in the plan under

the six headings.

Page 6&7 **Data collection.** Additional data collection is needed:

All native species in reservoir and tributaries need to be monitored for reintroduction effects **+ or –** (whitefish, suckers, rainbow, cutthroat, etc.).

Bull trout need to be monitored for reintroduction effects **+ or -.**

Effects of bull trout (predation) on reintroduced species need to be quantified. (stomach analysis)

Page 7 This page includes a list of data types that the Settlement Agreement suggests should be collected to determine program success. The list includes a Beaverton-Holt Production Function, which was not mentioned in the Settlement Agreement. If it is proposed to be a component of the monitoring and evaluation plan, it should be proposed with proper supporting recommendations and a discussion of alternatives. Then, the ACC should make a decision regarding its usefulness and applicability.

HATCHERY PROGRAMS AND OPERATIONS (Page 8-14)

Page 10 Hatchery Operations – The department requires an opportunity to review Appendix C before it is published in a final Hatchery and Supplementation Plan.

Page 10# 2. At a minimum 50 % of the broodstock should consist of wild or natural origin fish so that the natural environment drives local adaptation? This option will need additional clarification and specific discussion with the ACC before it can be considered.

Page 10 "2.1.2 Hatchery operations"
The section on the APRE might overstate how well hatchery programs meet HSRG guidelines. The summaries only indicate the intent of the hatchery programs.

Page 12 There are multiple problems with steelhead recommendations and data handling on this page.

Eliminating the winter steelhead program, or even cutting it in half (both proposals are found on these pages) would have unacceptable recreational and economic impacts in the Lewis River area. There will need to be a better effort to balance between hatchery winter and summer programs to provide for the new late winter program. There is a strong constituency for winter steelhead angling partially because there is little else to fish for through the winter months until spring chinook arrive. Hatchery winter steelhead are important both for harvest opportunity and the local economy. Adjusting the number of summer steelhead would provide a less impacting alternative.

Table 2.3 Should be amended to change the recommended 50% cut in the level of the hatchery winter steelhead program to a more balanced program between summer and winter steelhead.

The consultant should also revisit the calculation of return rates because we question the reported steelhead percent survivals. Average marine survival from the Lewis River Hatchery Review Document is reported at; 1.4% survival winter steelhead at Oak Creek Hatchery and

Eagle Creek Hatchery, and 6.8% survival summer steelhead at Kalama Hatchery. Analysis done by the WDFW for return years 1996-2000 indicate survival for winter steelhead 1.64% and summer steelhead is 2.03% for the Lewis River.
Recent harvest rates for Lewis River hatchery summer steelhead is 66% and 53% for hatchery winter steelhead.

Finally, the plan is correct that harvest management is the responsibility of the resource agencies. Unfortunately the planners don't seem to recognize that production decisions cannot be substantially and unilaterally changed because they are not disconnected from harvest decisions that are already in place.

Page 12 2.1.4 Broodstock Needs and Escapement Targets
First paragraph calls for reduction in harvest to meet escapement goals. This document is not the appropriate place to discuss harvest. The record shows that current management policies, which include harvest reductions during years with low run sizes, have resulted in adequate broodstock collection. It is appropriate to state that management decisions will continue to prioritize escapement to facilitate wild spawning requirements and hatchery broodstock targets.

Page 13 Table 2.5 title states adult threshold levels. This is consistent with our beliefs that ocean recruits do not include jacks but inconsistent with other parts of the document.

Table 2.5. One group of salmon will not substitute for another. There is there a separate threshold for each species and jacks do not count toward the threshold.

Page 14 2.2.1 Kokanee –This recreationally and economically important fishery, shouldn 't be eliminated simply based on operational challenges like the costs of handling juveniles. The only reason for changing the kokanee program would be its impact on the ability to meet the reintroduction outcome goals.

Page 14 2.2.2 Resident Trout. The 2006 program is 60K at 3 fpp.

2.2.2 RESIDENT TROUT – 20,000 lbs resident trout currently 60,000 catchables, refers SA.

Effects of catchable plants on bull trout and bull trout predation on catchables should be evaluated. Stomach lavage is an existing method for this analysis which should include each species.

Page 14 Again the plan contemplates eliminating existing and popular recreational fisheries. The stakeholders involved in the negotiation of the Settlement Agreement were quite clear in their interest in retaining these fisheries. Simply eliminating these recreationally and economically important fisheries is inconsistent with the goal identified for the Hatchery and Supplementation Plan. Complex systems will require creative solutions.

SUPPLEMENTATION PROGRAM (Page 15 – 21)

Page 15, paragraph 4 – the HSP puts a priority on Spring chinook contrary to the SA, references to species priority should be removed from the plan.

Page 15, paragraph 5 – The adult supplementation plan is in conflict with the SA. Section 8.5.1 also requires juvenile supplementation.

Page 16, 3.1.1, paragraph four, plan calls for stopping supplementation and monitoring. SA 8.5.1 calls for evaluation on year-to-year basis.

Page 16, 3.1.2 – language – "Hatchery origin adult"
Broodstock Origin. In order to run an integrated spring chinook program in the Lewis River system, the infusion of Natural Origin Broodstock (NOBs) into the hatchery broodstock will be consistent with the principles of integration. As the stock is acknowledged to be the stock most likely to adapt to conditions in the upper Lewis River, it would not be consistent to purposely diverge the population below the dams (by running a segregated program) especially as the hatchery population has been identified in NOAA Fisheries Hatchery Listing Policies. This would be the case in both coho (both types) and spring chinook.

Page 19, paragraph two Delete paragraph – first sentence is inconsistent with program goals. The second sentence refers to harvest and this is not the proper document to discuss this topic.

Page 20, Naturally produced steelhead smolts are two years old and ÿmm long. This plan calls for much larger fish. For all species, larger smolts typically lead to greater jack returns.

Page 21, Steelhead smolt volitional release at the Merwin Hatchery on site is not feasible. The connections between the hatchery and the river would need significant reconstruction and that method of release completely ignores potential negative interaction with the fall Chinook fry. Accepted strategy is to allow for volitional migration into the smolt collection ponds then fish are transported downstream for release.

MONITORING AND EVALUATION (Page 22 – 28)

Page 22, The settlement agreement and the H & S Plan anticipate program changes if there are negative impacts on native resident fish or resident fish impacts on reintroduction. Baseline data will be required in order to make this determination. Prior to initiation of reintroduction we should have a greater understanding of what fish populations are currently in the reservoir and in what relative numbers. Unless we have an accurate species inventory and their relative proportion to one another; we will be unable to determine if we are causing a positive or negative impact. Baseline data is critical.

Listed bull trout will require additional emphasis. They could be threatened by predation from reintroduced parr and smolt size salmonids. Tributaries that sustain spawning bull trout should be monitored for the presence of reintroduced spawners. Reintroduced parr and smolts in these tribs should be subject to stomach analysis to see if they are consuming bull trout juveniles.

Conversely, the more likely scenario is that bull trout will devour many out migrating reintroduced smolts as they enter the reservoir. During netting activities adult bull trout should be subject to stomach lavage.

Currently there are ÿ 550 PIT tagged bull trout swimming in this system. A remote PIT tag detector should be mounted in Rush Creek to record adult movements into and out of this major spawning tributary. An additional detector on Pine Creek should be incorporated into the habitat restoration projects, and both sites funded by the ACC. All or a portion of all species returning upper river broodstock could also be PIT tagged. Remote detectors will indicate if returning salmon and steelhead are competing with bull trout for

spawning areas in these tributaries.

We should determine: survivals of all species from egg to fry, fry to smolt; smolt transit thorough reservoirs; transit timing, reservoir survival; transport survival to release point; trap efficiency; trap mortality; and smolt to adult survival.

Page 24, Ocean Recruits…What happened to the coho and Chinook methods developed by WDFW biometricians? See attached.

Page 24, The numbers for spring chinook are incorrect and should be 150K cwt and 150K ad+cwt. Steelhead are not cwt'ed.

Page 25, "HATCHERY EFFECTS" Hatchery fish from segregated programs (early winter or summer steelhead) could be monitored in spawning or carcass surveys. In some areas, numbers may be in excess of 5% but it is important to note that the 5% refers to only those that would contribute to the natural spawning population. For example, in the case of early steelhead spawn timing, there is little opportunity for most of those adults to be included in the natural spawning population due to spawn timing differences between wild and hatchery fish in the watershed, even if the numbers of fish exceeded established limits.

Page 25 4.3.1, The ACC will have a difficult time determining "significant" limiting factor unless we know as much as possible about native fish. This will require substantial monitoring efforts (see above).

Page 25, The plan recommends the use of spawning ground surveys to collect CWT from naturally spawning fish. This effort (spawning ground surveys and CWT collection) should be added to the activities identified in the Monitoring Plan so it is actually accomplished.

Page 25-26, The triggers for determining hatchery effects seem inappropriate. If hatchery origin steelhead comprise more that 5% of the population in the lower river, that is an impact. Due to the limited steelhead spawning habitat in the lower river is seems difficult to assess where the fish are actually located. The proposed study of rainbow trout stomach contents prior to the start of downstream transport is inappropriately designed to find a high level of interaction. The juvenile coho that will be in the reservoir and potential predation targets are the offspring of the habitat preparation plan fish and they are unable to migrate out because there is no collection facility and they are trapped in the reservoir.

Page 26, 4.3.2, 3rd paragraph - "No" ACC needs to agree on evaluation program and develop criteria.

Page 26 4.3.2 Drop last sentence in third paragraph. This does not apply to run success.

Page 26 4.3.3, paragraph 2 #2 – There is some misunderstanding regarding monitoring responsibility and the harvest data that will be provided by the co-managers. The plan should not anticipate that existing harvest monitoring will provide data regarding age or sex of marked fish in the fishery or those escaping to the spawning grounds. This additional monitoring needs to be done at licensee expense.

Page 27, 1st paragraph – Monitoring to document compliance with the performance criteria is also the responsibility of the licensee. WDFW will assist as possible and as funded.

Page 27 4.3.4 - To make this comparison useful, the plan should more fully describe how the Cowlitz mirrors the Lewis program.

Page 28 – Should also describe the information that will be collected from the hatchery.

Page 28, 4.3.5 - We need more discussion with ACC on the last two paragraphs as it pertains to the outcome goals in section 3. The production function as identified is not our expectation as an end product for the monitoring program.

Page 29, 5.0 ADAPTIVE MANAGEMENT

We don't agree that there should be a delay in developing an adaptive management plan.

Page 30 – 33, 6.0 EXPECTED OUTCOMES
We are unable to agree with or accept a plan with expected outcomes that don't achieve the production targets in the settlement agreement.

Page 34, 7.0 RECOMMENDATIONS Delete all four recommendations. The plan must be consistent with the Settlement Agreement. Eliminating and reducing fish production programs due to some level of management complexity does not help achieve the outcome goal or the Hatchery Target.

Appendix A

Page A-1 Starter troughs - we do not have any at Lewis River.

Page A-2 Last paragraph states the fish are trapped at Merwin Trap and hauled to Speelyai and Merwin Hatcheries. Lewis River hatchery needs to be included in this statement.

Page A-3 1.2 Speelyai Hatchery – Speelyai does not support steelhead programs.
Second paragraph- The (four) troughs should be 17x1.5x1.5 foot deep troughs, not 17x15x1.5.

Page A-7 Release #'s are part of the amended license. Goals are negotiated with FERC. Kokanee production is 12,500 lbs.

Page A-9 #4 What is the recovery goal for Spring Chinook on the Lewis.

Page A-9 No out of Basin stocks have been used since 1997.

Page A-9 Last paragraph should say that acceptable stocks that can be used are Cowlitz and Kalama.

Page A-10 Tagging data for the springs is incorrect, Should Be 150k of each.
Excess hatchery springs are not shipped to Speelyai.

Page A-10-11 Table 2-3Average broodstock collection for males, is not 729 fish, there is a typo in the table 2.3. 1999 – 287 males, 2002 – 371 males, 456 females and 7 jacks. 2004 – 405 males. The correct average for males is 340. The correct average for females is 408.

Page A-11 2.1.4 Second paragraph has many mistakes – Spring Chinook are transferred to Lewis in May, not April. The Echo fish are not included in the transfer. The remaining fish at

Speelyai are for Echo, and only 100k are transferred to Lewis.

Page A-11 Releases from Echo are late January and March.

Page A-12 Table 2-4. Release numbers for 1999 were due to BKD outbreak. 2001 does not include Echo Net Pens.

Page A-12 makes reference to Table 2-8, Should be 2-5.

Page A-13 #3 states we incorporate natural stocks into the hatchery population?
Not integrated at this time.

Page A-14 2.2.3 Second paragraph, we no longer remove unmarked coho after they return the second time. Carcasses are not taken to the local landfill; they are disposed of through the carcass contract.

Page A-16 2.2.5 Second paragraph – type N coho fry and fingerling releases were only in reservoirs.

Page A-17 Table 2-8 Of the 1,395,072 released in year 2000, 444,406 was funded by Mitchell Act. Was not mitigation production, paid for by Mitchell Act dollars.

Page A-20 We haven't used any Skamania eggs since 1998.

Page A-20 2.3.3 #1 – Broodstock collection percentages are incorrect; I have no idea where this came from. Needs to look at what we really do.

Page A-20 Spawning %'s #3 – Again, where did these percentages come from?

Page A-21 Winter Steelhead: #2 – All males are kill spawned, not returned to river.
#5 – Where did these numbers come from?

Page A-21 Broodstock goal for winter steelhead is 200 males, 100 females, with an eggtake goal of 150k. Spawning is 1:1, but we use a backup male as well.

Page A-22: First arrivals of summer steelhead are in April. We do not start collection until July1st. Adults are treated up to 7 days a week. Pre-spawning mortality on summer steelhead can be as high as 20%, due to IHN. We only transferred adults to Horseshoe Lake twice, in 1997 & 1998. 2.3.4 – First paragraph – we do not incubate steelhead in family units we use 3 fish pools. Second paragraph – ponding is not on a volitional basis, it based on TU's and visual inspection.

Page A-23 2.3.5 – second paragraph – we have not planted steelhead into Yale Lake but have into Swift Reservoir.

Page A-23 Table 2-14 does not include Echo and Speelyai net pen releases, except in 2001.

Page A-25 Current Program was this 2.4.1 – rainbows were planted at 40 fpp, not 25.

Page A-25 2.4.3 – egg transfers for 2005 were 150k of Goldendale stock, no Spokane stock.

Page A-28 2.5.5 – Table 2-19 – releases that exceed production targets have been unfed fry plants, except for Cougar creek plants.

Page A-28 The plants listed for 2003 and 2004, have overlapping numbers, due to fall plants of one year and spring plants of the following year, same brood year.

Page A-28 2.5.6 – Uses a 1995 creel survey for angler success, should use a more current survey to show effects of Tiger Musky plants.

Appendix C - Until all appendices are available for review, we cannot agree to their inclusion in a final plan.

Thank you for the opportunity to review and comment on the draft Plan. We hope you find our comments helpful. We look forward to working with you and the ACC in collaboratively developing a final Plan. If you have any questions or comments please contact John Weinheimer, District 9 Fish Biologist, at (360) 906-6746. For your information the public comments that were submitted to the Department are also enclosed with this letter.

Sincerely,

Craig Burley
Region 5 Fish Program Manager

Enclosures

Hoffmann CHINOOK OCEAN RECRUITS 06/16/04

# Review of Schedule 7.2.2

**Summary**

1. The definition of ocean recruit in Schedule 7.2.2 is not clear. It depends on the definition of $m$, which was confusing to me. I provided a summary table showing how the different definitions of $m$ would impact the definition of ocean recruits.
2. Typical exploitation rate analysis (as conducted by the PSC technical committees) defines the cohort size as the number of age 2 recruits after natural mortality which would imply setting $m = 1.0$.
3. The value of survival from entry to the ocean (does not include freshwater survival) used by the PSC technical committee models is 60% rather than 90%. The smaller value would inflate the ocean recruit number more than using the suggested 90%.

## 1 Estimation of ocean recruits

Typically, the ocean recruits (sometimes referred to as the 2 year old cohort) are calculated as the number of 2 year old fish at large after natural mortality has acted on them and before any fisheries have begun. This cohort is constructed as shown in Figure 1, beginning with the escapement at the terminal age and then adding the mortalities backwards. The fishery mortalities include all cases of incidental mortalities as well as directed harvest; the natural mortality is generally calculated given some assumed rate.

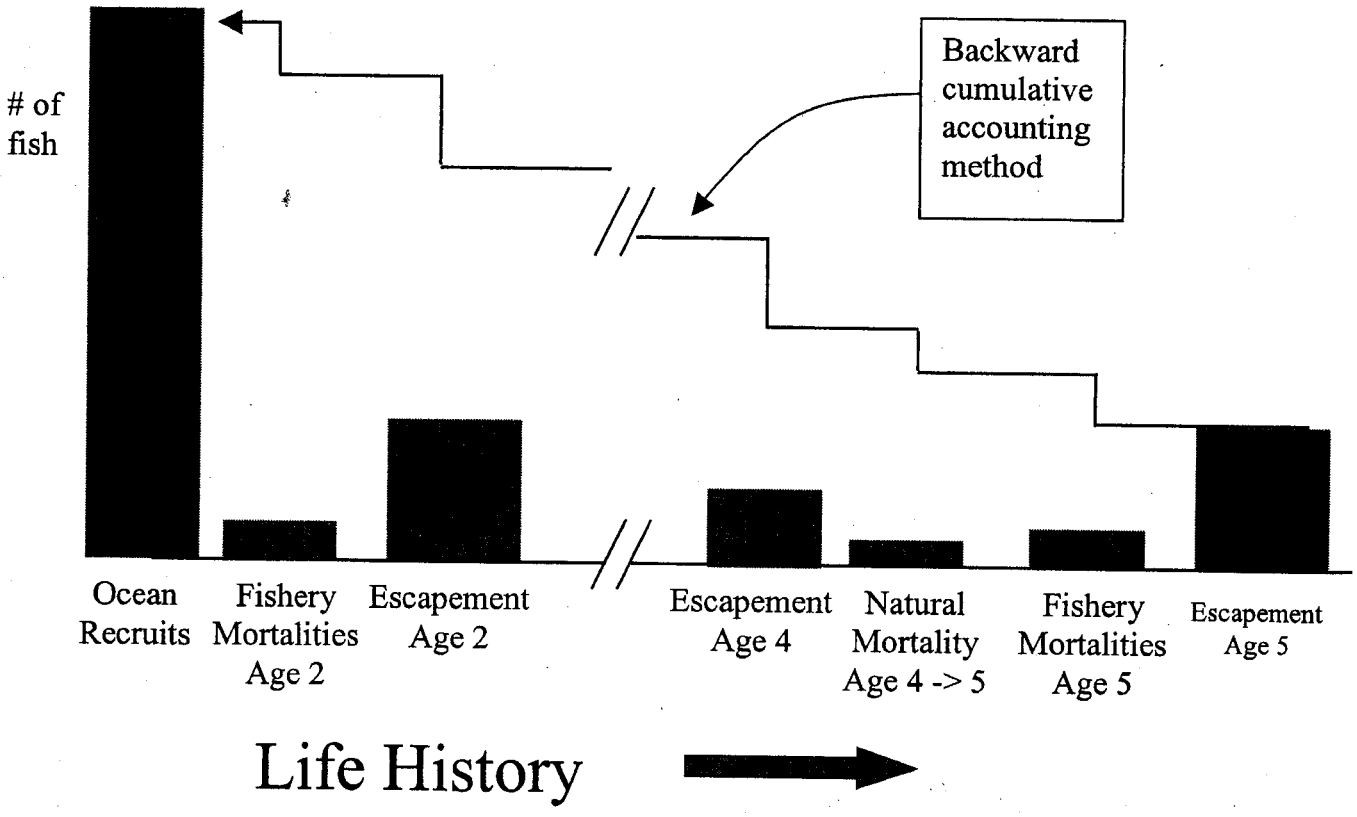


Figure 1. Schematic showing the cohort construction of ocean recruits for a Chinook stock.

The cohort reconstruction described above can be defined mathematically as

$$Cohort = \sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a}) + \sum_{a}^{A}(NM_a + PSM_a + E_a + S_a) \qquad \text{Equation 1-1}$$

where:

| | |
|---|---|
| $Cohort$ | = Recruitment cohort for brood, sum of all mortalities and escapement (excluding natural mortality to age 2, |
| $F_{f,a}$ | = Landed mortalities estimated using tagged fish recovered in fishery $f$ and for age $a$ |
| $IM_{f,a}$ | = Incidental mortalities in fishery $f$ and for age $a$, i.e., catch and release, sub-legal release, drop-off and mark-selective fishery mortalities. |
| $NM_a$ | = Natural mortality occurring prior to recruitment for age $a$ and $NM_2$ is set = 1.0 |
| $PSM_a$ | = Pre-spawning mortality for age $a$, occurring after fish exit last fishery, e.g. interdam mortalities |
| $E_a$ | = Escapement to hatcheries for age $a$ |
| $S_a$ | = Escapement to spawning grounds for age $a$ |

## 2 Estimation of exploitation rates

Cohort reconstruction permits the estimation of exploitation rates. A stock-specific brood exploitation rate for fishery $i$ and age $j$ is defined by:

$$ER_{i,j} = \frac{(F_{i,j} + IM_{i,j})}{\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a}) + \sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)} \qquad \text{Equation 2-1}$$

where the denominator is the reconstructed 2 year old cohort. It appears that the exploitation rates in Schedule 7.2.2 are for the suite of fisheries the brood experiences throughout its life history. Therefore, those exploitation rates would be calculated as:

$$ER = \frac{\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a})}{\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a}) + \sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)} \qquad \text{Equation 2-2}$$

Using this exploitation rate, the ocean recruit formula given in Schedule 7.2.2 is:

$$\text{Ocean Recruits} = \frac{\text{Total Escapement}}{(1 - ER)m}$$

$$= \frac{\sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)}{\left(1 - \frac{\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a})}{\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a}) + \sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)}\right)m}$$

$$= \frac{\sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)}{\left(\frac{\sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)}{\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a}) + \sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)}\right)m}$$

$$= \frac{1}{m}\left[\sum_{f}^{F}\sum_{a}^{A}(F_{f,a} + IM_{f,a}) + \sum_{a}^{A}(NM_a + PSM_a + E_a + S_a)\right]$$

$$= \frac{1}{m}[\text{Cohort}].$$

This definition has an extra survival term in the denominator that inflates the typical 2 year old cohort size (before the age 2 natural mortality as been in effect). It is not clear from which life history stage to which life history stage that natural mortality ($m$) is defined, so the resulting definition of ocean recruits is not clear.

Table 1. Alternative definitions of early natural mortality and the corresponding effect on the definition of Ocean Recruits (see Figure 2).

| Definition of $m$ in Schedule 7.2.2 | Corresponding Definitions of Ocean Recruits |
|---|---|
| Baseline (set $m = 1.0$) | Number of age 2 recruits used in typical exploitation rate analysis. |
| Survival from release to the 2 year old recruitment stage (includes freshwater and ocean to age 2 recruitment). | Number of smolts released from the hatchery or produced in the natural system. |
| Survival from departure of freshwater to 2 year old recruitment stage (includes ocean to age 2 survival). | Number of smolts entering the ocean. |

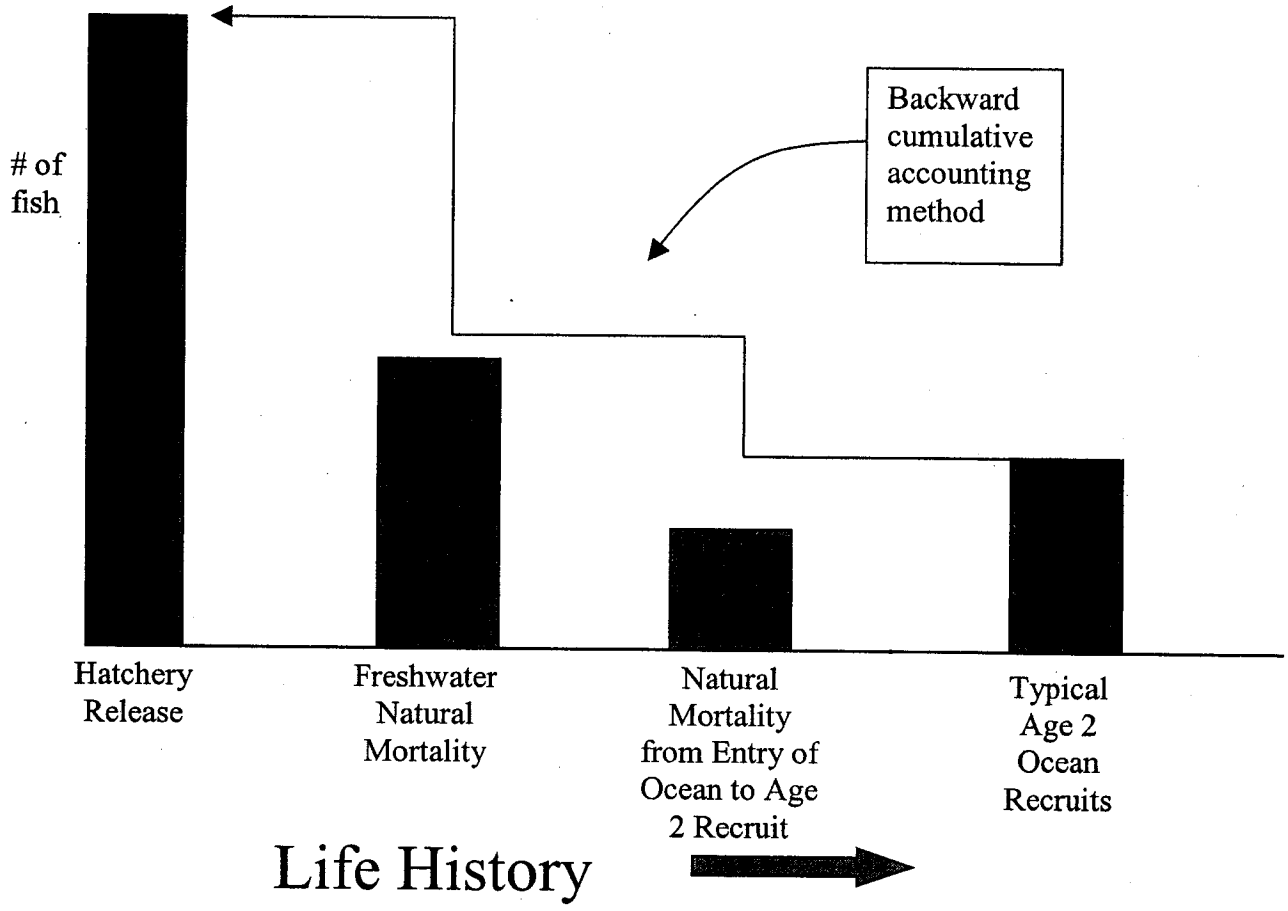


Figure 2. Schematic showing the different early life history natural mortality sources and the corresponding number of fish produced by including that source in the ocean recruit definition.

Schedule 7.2.2

Adult Ocean Recruits are adult fish that mature in the ocean prior to escapement and harvest estimation.

# OCEAN RECRUITS = Escapement + harvest

| Hatchery | Ocean |
|---|---|
| Above Merwin Naturals | Col. R. |
| | Lewis R. |

Formula for ocean recruits:

$$\text{Ocean Recruits} = \frac{\text{Total Natural Escapement}}{(1-x)m} + \frac{\text{Total Hatch. Escape.}}{(1-y)m}$$

Where: x = exploitation of natural fish
y = exploitation of hatchery fish
m = return survival (1-ocean-to-freshwater natural mortality)

Example: Spring Chinook are generally believed to experience a 20% exploitation rate on the natural component and 55% on the hatchery component. The factor m is generally thought to be 90%.

# Review of Schedule 7.2.2 – Equations for Coho

## 1 Estimation of ocean recruits

Typically, the ocean recruits (sometimes referred to as the 2 year old cohort) are calculated as the number of 3-year-old fish at large before any fisheries have begun. This cohort is constructed as shown in Figure 1, beginning with the escapement of age 3 fish and then adding the fishery mortalities backwards. The fishery mortalities include all cases of incidental mortalities as well as directed harvest. This process is a simplified version of that with Chinook.

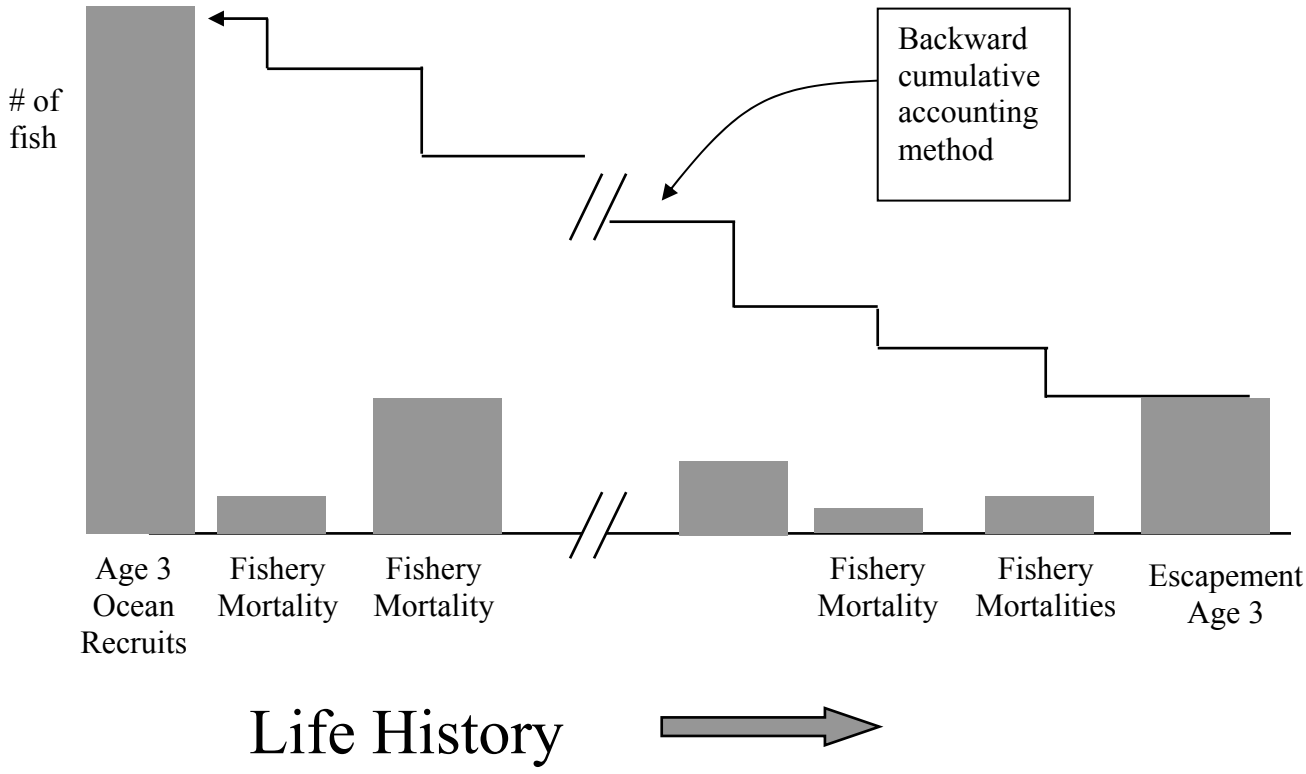


Figure 1. Schematic showing the cohort construction of ocean recruits for a coho stock.

The cohort reconstruction described above can be defined mathematically as

$$Cohort = \sum_{f}^{F} \left( F_f + IM_f \right) + PSM + E + S \qquad \text{Equation 1-1}$$

where:

$Cohort$ = Recruitment cohort for brood, sum of all fishing mortalities and escapement,

$F_f$ = Landed mortalities estimated using tagged fish recovered in fishery $f$,

$IM_f$ = Incidental mortalities in fishery *f*, i.e., catch and release, sub-legal release, drop-off and mark-selective fishery mortalities.

*PSM* = Pre-spawning mortality, occurring after fish exit last fishery, e.g. interdam mortalities

*E* = Escapement to hatcheries

*S* = Escapement to spawning grounds

## 2 Estimation of exploitation rates

Cohort reconstruction permits the estimation of exploitation rates. A stock-specific brood exploitation rate for fishery *i* is defined by:

$$ER_i = \frac{(F_i + IM_i)}{\sum_f^F (F_f + IM_f) + PSM + E + S} \qquad \text{Equation 2-1}$$

where the denominator is the reconstructed 3 year old cohort. It appears that the exploitation rates in Schedule 7.2.2 are for the suite of fisheries the brood experiences throughout its life history. Therefore, those exploitation rates would be calculated as:

$$ER = \frac{\sum_f^F (F_f + IM_f)}{\sum_f^F (F_f + IM_f) + PSM + E + S} \qquad \text{Equation 2-2}$$

Washington Dept of Fish and Wildlife 2-2-2005

Dear Sir,

I would like to comment on the Lewis River Hatchery and Supplementation Plan prepared by PacifiCorp and the Cowlitz Public Utility District.

I have grave concerns about the elimination of the winter steelhead program as well as the reintroduction of salmon to the upper Lewis River.

Elimination of the winter steelhead production would further reduce the fast disappearing fishing opportunities in the area and place more pressure on the remaining fisheries.

I'm also concerned on the impact on the upper Lewis, above Eagle Cliff Bridge the reintroduction of salmon will have on the existing trout fishery. This is one of the very few existing trout fisheries in the area with fish that achieve a reasonable size. Increasing the pressure there with a salmon fishery, legal or not, would have a serious negative impact on the trout population. I can also foresee an elimination of the legal season to protect the salmon population and an increase in the illegal taking of fish and an inability of a seriously understaffed, overworked enforcement agency to prevent it. Then there is the effect on a delicate ecosystem to consider also.

There seems to be a movement on by the power company's to get out from under the conditions mandated during the original agreements to license the dams. I don't think anyone thought that mitigation was going to be easy or inexpensive, but I do think the power company's are very quick to point their perceived failure of their attempts to solve a problem they created. If there was a profit to be made "no' or "can't" wouldn't be in their vocabulary. It shouldn't be when it comes to destroying a resource belonging to all of the people of the State of Washington.

Sincerely,

Peter J. Carlos
308 N.W. 8th St.
Battle Ground, WA. 98604

The recent article in Clark County's Columbian newspaper has raised concerns among sport anglers about diminished angling opportunities in SW WA. A few good friends have brought this to my attention. I wanted to pass along my concerns with the plan

According to the article, the plan would:

- End winter steelhead which return to the river from November to February (closer to October to March)
- End early coho, which return to the river from mid-August to Sept.
- Decrease late coho, which return to the river from Sept to Dec.
- Increase spring chinook for ocean and in river (Columbia) harvest.

It also calls for the trucking and reintroduction of salmon and steelhead into the North Fork of the Lewis upstream of Swift Reservoir. Prior to the dams this area was part of the salmon and steelhead historic range. However because of the dams, it has since become viable and active trout fishery. The reintroduction has the potential to destroy the trout fishery.

Add up all the components and it appears to equal less in-river angling opportunities in-river and shifts to a chinook ocean harvest program

I'm still trying to digest the 106 page PDF version of the report from PacifiCorp (http://www.pacificorp.com/File/File58569.pdf ), and may comment again.

I respectfully ask that you add my concerns to the public record regarding this matter.

Regards,

John F. Comes

Editor, NorthWestTrout.com

Good evening,
I would like to post my concerns over the possible changes with the North Fork Lewis River, especially the Upper section, above Swift Resevior.

In my opinion, The upper Section is the ONLY Blue Ribbon, moving water, Trout Fishery in SW washington. It is a GEM, that should be protected and maitained as a Seasonal Selective Rules Trout Fishery. It is by far, my favorite place to fish, and the only place I will Fish for trout in the summer. I cant wait for June, and I am bummed out in October. But that is the price we pay for a wonderful fishery.

I am a Recreational Fly fisherman. What that means, is that I fish waters that are mostly catch and release, selective rule, or fly only. There are very few places to fish around here, that cater to this type of recreationalist. I have also been an "ambassador" to the upper river, taking it upon myself to educate fisherman about the regulations, especially around Eagles Cliff Bridge Area, to help maintian this wonderful fishery. I have confronted individuals on the river, explaining them the regulations.
I absolutely love it up there, and find it to be a

very peaceful place to hike, fish, and relax. I dont want you to close the upper river all together. Why cant we keep it a selective gear fishery, for trout?

I feel introducing the salmon, coho, and chinook in this stretch, would invite the "Wrong type of angler", which have to tendencies to destroy a wonderful fishery by fishing against the rules, and also to completely wipe out the Bull Trout population.

I dont mean to stereotype, but I have seen the lower river around the hatchery, and have witnessed first hand what kind of damage can be caused by the unethical, immoral sportsman. The Upper River, is an escape from that.

PLease think twice about the proposed changes, and please Protect the Upper River, for future generations to enjoy.

Sincerely,

Mike Gamby

I am writing to express my concerns that the proposed management plan will have a negative effect on the trout fishery on the upper river. Reducing the number of winter steelhead also does not seem to be a positive.
The stocking or not stocking of coho and Chinook seems to be in conflict.

Sincerely
Jerry Downey

Hello,

I am writing this inquiry to hopefully gain some information about the upcoming management changes to this river system as were listed in the Columbian on 1/19/06.

A little background is that I travel to SW Washington several times per year from Salt Lake City. To steelhead fish. I just recently started trout fishing the upper river and am quite impressed that such a high quality fishery exists tucked away. This means adding additional trips to just come all the way out to trout fish. More money pumped into local businesses. In fact I am also looking at potentially moving to SW Washington. This trout fishery is one more reason to get me out there and call the region home.

I am very concerned over the future of this fishery with the regulations that will likely be put into place to protect the attempt at reintroduction. And the impacts the introduction itself will biologically have on the wild trout population. As I am sure you are aware there are some impressive specimans in that stretch of river. Those that rival Alaska. Or anywhere else in the western US.

I am also very concerned over this attempt to reintroduce a wild reproducing population. I am well versed in the poor reproductive ability of hatchery, even broodstock, fish in the wild. Couple that with using a diversion collection system to capture smolts at Swift Dam and using a truck to move fish around the system. I don't see how this will fulfill mitigation. The anadromous fish of the upper river are extinct. Creating a viable population is very risky at best. The potential damage to the created wild trout fishery is a big gamble investing in something that realistically doesn't have the science or background to succeed. Even if the dams were removed and the habitat

'restored' the chances of creating a viable wild anadromous population through hatchery stocks (or brood stocks) just isn't realitically going to happen.

Why take that chance on damaging the upper river? Why take the early coho and winter steelhead harvest opportunities away from the lower river angler?

These upcoming decisions will quickly determine how much of my money will be spent supporting local businesses. And my friends too. If the trout fishery is closed and or biologically reduced to nothing I will be forced to spend my money elsewhere. And in doing so I will move the other 6 trips per year I make to SW Washington (and Skagit County) to both Oregon and Idaho as their fisheries are in far greater overall shape. Don't get me wrong...I really like SW Washington. I have been purchasing a season non resident fishing license with catch card since 1994. I bring my father to your state almost every year just for the fishing. Even my kids have come out and enjoyed the steelhead fishing. I was truly hoping that we as a family could enjoy the upper river trout fishery together. It sounds as though this may no longer be the case. A blow that I can't accept. The fallout from it will force me, my family, and numerous friends, to find other locales to recreate.

Thank you ,

William Olson

Dear Mr. Weinheimer

I'm writing regarding the recent article in the Columbian newspaper (Thursday January 19th.) about PacifiCorp and hatchery operations on the N. Fork Lewis River.

I am not a buoy 10 Columbia River fisher. The problems with the Columbia are profound. Using the Lewis to jack around with the numbers for the lower Columbia seems like cutting off our nose to spite our face. There is a current strong fishery in the Lewis that is working for the local community and the local economy. Albeit its still a damned river and facing its own issues from that.

Unless someone can offer me specific evidence that this plan improves the watershed health, the Lewis River community, and the economy of the Lewis, than I am opposed to shifting the program.

I love the Lewis River. I had the great fortune of working for MSHNVM the Forest Service in 1993 mostly on the south side of St. Helens. The upper watershed is a wonderland. More recently I've started flyfishing, and have enjoyed the upper rivers trout fishery and put in some time in the lower river for steelhead.

Using the Lewis as a factory for Columbia harvest fish is wrong. Those dams did local damage to the Lewis. Seems to me that mitigation of the dams, should focus on the local situation and local concerns. I think that if you would focus the management to improve the fishery in the Lewis itself, you would find that naturally the marine and Columbia situation would improve too. To treat the Lewis as a feedlot for destroyed downriver fishery is wrong. Trucking fish, is not a proven solution.

Maybe you have more research that shows the benefits to the Lewis River system? Are you trying to reach historic fish diversity and counts in the Lewis? Are you

working to help the folks in Woodland, Cougar, and Eagle Cliff who live off of the current fishery? I would very much appreciate a reply to these questions.

Thank you for your consideration. I look forward to hearing from you.

Heather McNeill
5680 River St.
West Linn, OR

Phone (503) 557-3351

John Weinheimer,

I am deeply concerned over the plans to make changes on the Lewis river regarding the hatchery programs, and what is being suggested about reintroducing anadromous fish into the upper river. WHile I support conservation and logical hatchery reform to help wild stocks, I have questions about the scientific validity of trucking fish over dams as a realistic answer to mitigating the dams impact. The upper Lewis river is now an established ecosystem adapted to the dam on the lower stretch of the river. This area provides pristine trout fishery and quite a stretch of free flowing river. I hope the WDFW listens to the public comment.
Thank You

Kurt Sherwood
Lifetime Washington resident
Member Trout Unlimited
Member Wild Steelhead Coalition

I am writing to express my concerns about the proposed reintroduction of hatchery raised salmon in the upper watershed of the North Fork of the Lewis River. Although this may appear to be advantagous and beneficial in the short term I think there is a great possibility that the fishery could be closed off for significant periods of time in an effort to protect the re-introduced species for incidental catch and or poaching. Myself and many others would lose a valuable natural resource if this watershed is closed to recreational opportunities. And the local economies that depend on the tourism and recreational dollars circulating in the areas would diminish as a result of declining recreational dollars to the area.
Please leave the watershed and the fishery as it is now. In a pristine, beautiful, natural habitat.
Thank you.
Brad Rodgers

Dear Sir or Madame,

I would like to voice my concern about the proposed changes for the North Fork Lewis River fishery. I note that these changes are, at least in part, are proposed to help PPL meet their requirements for amelioration of the effects three dams have on salmon population. Some of the proposals mention trucking adult salmon above Swift Reservoir, and juveniles down from there. It seems to me that if this happens, then there will be additional regulations and restrictions on trout fishing on the NFL above the reservoirs. Frankly, there are not a lot of rivers that have decent trout fishing in this area, so to lose the NFL above Swift Reservoir will be a big blow to those of us who love to fish there.

I am also concerned about moving around the emphasis on steelhead and salmon hatcheries. If we are to use hatcheries to augment runs, then the benefit of that

augmentation should go to the river's watershed, not to gillnetters or trawlers in the Columbia or the ocean. I'd like to see the first and foremost focus on these hatcheries to be for recreational use on the NFL itself.

Thanks for taking the time to read this. I will watch with great interest the developments in this area, and hope that it will not mean the loss of fishable waters.

Sincerely,

Bob Williams
8008 N.E. 100th Circle
Vancouver, Washington 98662
(360) 944-4459

To whom it may concern:

This message is an inquiry regarding the future of the NFL fishery. Surprisingly, I have never fished the North Fork - not for steelhead, not for chinook, nor for coho. Would I fish it if I had the chance? Of course. It's just that in my last three years here in SWW I somehow have ended up on different waters. I guess that is why I don't have the connection with the North Fork that some others have. Perhaps one must actually fish the water in order to understand it's worth and appreciate what the fishery can afford in it's present condition. From the sounds of it, it may be too late for me to do just that.

The Upper Lewis however is a different story. I've known this water. I love this water. To me it is one of those places that you never talk to anyone about until they agree to go fishing with you there. Its wild, majestic and truly beautiful. Its one of the few outdoor places in SWW where I've felt a distinct spiritual connection with nature. For those that have felt it, they know what I am talking about. Its almost gospel, in that you want to preserve it and share it with family and friends.

That being said, my questions are these: What does this fishery proposal mean? How will trucking anadromous species over the dams and up to Swift affect the Upper NFL and the trout fishery specifically? Does this spell doom for the trout? Will it spell doom for anglers? Does this translate into a shorter trout season or no season at all? I know it seems selfish that I am overlooking the winter hatchery woes and problems with the lower river but like I said earlier, I just don't have the same connection with that part of the drainage system.

Any response to these concerns and questions would be greatly appreciated.

Sincerely,

Shane Hall
Battle Ground, WA
687-1786

Dear Sir or Madam,

This email is to express my concern about the proposed changes to the management of andromonous fish species (salmon and steelhead) in the North Fork of the Lewis River, as recently reported in the Columbian newspaper.

Although the article was unclear as to what specific changes might occur to the fishing regulations as a result of the PGE dam relicensing and WDFW management objectives, I want to express my support for decisions that keep recreational fishing opportunities open and available to anglers on the entire NF Lewis River system.

As a fly fisherman, I have enjoyed many floats on the lower section of the Lewis River, chasing both summer and winter run steelhead. Although these runs may not be spectacular in number, the ability to enjoy a day on the river with the chance of hooking and landing (and in my case, releasing!) this spectacular fish is one of the unparalleled benefits of living in SW Washington. When you consider the number of fly and gear fishermen who frequent this popular waterway, the economic benefit of managing the steelhead and salmon runs for continuation of this sport fishery is self evident. Consider also the potential for increased pressure on other SW Washington rivers and resulting negative effect on other fish runs, should the popular lower NF Lewis be closed to anglers.

I am especially concerned about insuring the continued ability to fish the Upper NF Lewis (above Swift Reservoir). While I do not have any objection to fish management decisions which include trucking salmon and/or steelhead to these waters for the overall benefit of the runs, I would NOT be in favor of further limiting access to this already heavily regulated area in the name of protecting those experiments.

The Upper NF Lewis fishery is one of the true gems of SW Washington. Current regulations closing the waterway from November to June, combined with the special regulations above Eagle's Cliff Bridge, have served the river well in protecting the bull trout population, as well as limiting overall pressure on the river. With some few exceptions (which could be mitigated with increased law enforcement vigilance) those of whom fish the upper reaches of the NF Lewis are conscientious anglers who would do little harm to any andromonous fish populations being managed for the lower river. By simply disallowing the taking of salmon or steelhead in the upper river, this wonderful trout fishery could stay open to those of us who love it, with little effect on experimental efforts to increase andromonous fish counts.

I sincerely hope the WDFW recognizes the value of keeping both the upper and lower NF Lewis rivers open and available to sport anglers. Please keep them open!

Regards,

Brian K. Kuhta
3036 NW Astor Street
Camas, WA
98607

Mr. Weinheimer,

I'm writing regarding the recent article in the Columbian newspaper (Thursday January 19th.) about PacifiCorp and hatchery operations on the N. Fork Lewis River (NFL) and a few other things.

According to the article WDFW was going to release a positional statement in response to a draft recommendation eliminating winter hatchery steelhead and early coho. Has that statement been released yet? If so where can I find it? If not, how soon before it is released. My understanding is the public only has until February 3rd. to make a response and I would like to know where WDFW is at on this matter.

The NFL is an important part of my family's outdoor recreational activities and most years I teach fly fishing and provide guide services on this river (as well as others) I have several questions concerning future plans for the NFL, both the lower river and the upper watershed.

First relating to the proposed plan mentioned above I have concerns with what is expressed in the following excerpts from the article.

1) Department of Fish and Wildlife releases 100,00 young winter steelhead annually as part of PacifiCorp's mitigation. These fish return as adult steelhead in November through February primarily and provide a sport fishery from the mouth of the Lewis upstream to Merwin Dam. The estimated survival rate for winter steelhead is 1.4 percent, compared to 6.8 for summer steelhead. The poorer performing winter steelhead could be switched to summer steelhead or spring chinook.

2) Eliminate the early coho program... As early coho become established in the upper Lewis, the report says, consideration should be given to elimination of rearing early coho in the hatcheries. Early coho contribute fewer adults to ocean or freshwater fisheries than late coho. As natural production in the upper Lewis increases, large numbers of surplus early coho pose management problems, the report says.

3) Reduce late coho program... The report says most years, hatchery production far exceeds harvest and broodstock needs. Only early coho will be used for reintroduction upstream of Swift. Large surpluses of late coho result in management problems, including genetic issues with naturally produced coho.

4) Increase spring chinook production... The hatchery plan calls for boosting the release downsteam of Merwin Dam to 1.25 million young spring chinook plus releasing 100,000 upstream of Swift Reservoir. The goal is to produce 12,800 hatchery origin spring chinook available for ocean and in-the-river harvest and a minimum of 2,977 natural production spring chinook. In addition to the 100,000 young spring chinook to be released upstream of Swift, the plan calls for the trucking of 2,000 hatchery-origin adults to the upper watershed to start natural production.

5) Frank Shrier of PacifiCorp said the plan is a draft and the signees have until Feb. 3 to return their comments. "The consultants reviewed the operations and made recommendations on what seemed to make sense to them" he said. "On winter steelhead , they said a lot of fish get pumped out without a lot of return to the harvest."

Basically what I get out of the above 5 quotes (and the article as a whole) is consideration is being given to removing as much as six months of recreational fishing opportunity on the lower river, a tremendous blow to viable winter fishing options for SW WA, to provide fishing opportunity in other areas for other species during other seasons.

I am especially concerned by the attitude I read into Mr. Shrier's last comment quoted, which seems to me to express - "well the result of our mitigation effort isn't doing so well so we're going to just stop trying to mitigate the loss of the fishery and put our efforts somewhere else".

I also don't understand the apparent contradiction in and between the comments in 2, 3 and 4 above.

In 2 I read that early coho contribute fewer adults to the fishery, yet we have an apparent surplus of fish that is causing a management problem.

In 3 I'm told late coho hatchery production far exceeds needs and the surplus is a management problem.

Yet in 4 I'm to believe that we need to create a much bigger supply of spring chinook and though not mentioned, the implication certainly is, this huge number of spring chinook wouldn't be a detriment to re-introduction efforts of chinook like the (supposed) surplus apparently is to coho.

I certainly don't need to spell out how this could be read.

Assuming this draft plan does become a reality, how many years will it be before we see a successful enough re-introduction program that we will again have a viable winter steelhead fishery? Where are the studies and what are the other programs supporting the assumption this program will become that successful?

I'm not trying to be adversarial but I, and many of my friends, are concerned over the management of our fisheries and the direction we seem to be going.

Moving on to the upper watershed, I am fairly conversant with many of the issues and controversy surrounding hatcheries and hatchery fish and the idea of restoring wild, naturally spawning anadromous fish runs to historical waters. Yet I have to ask, at what point are we shooting ourselves in the foot to follow what almost appears to be a pipe dream.

I don't have access to all the studies currently going on but I have yet to read any glowing reports on reintroduction efforts that have occurred in watersheds above multiple dams, especially with trucking involved. If just moving the fish around the dams is the answer, where is the success on the Columbia? You don't really have to try answering that, I know it is a complex issue, yet the complexity exists on the NFL as well.

The upper watershed has "historically" provided my family and friends an excellent trout fishery. I have been fishing it for the past 27+ years. There are not many places in SW WA. for a person to enjoy this type of experience -

5 year old Olivia with nearly 27 inches of rainbow

This fish came out of the upper NFL. Am I going to loose the opportunity to watch my children play, tail and release fish like this?

What are the re-introduction efforts going to do to the summer sport fishing seasons on the upper river? Reduced or eliminated seasons? Reduced or eliminated seasons on the upper river and the loss of the winter steelhead fishery on the lower river combined are a blow to our local fisheries that I have trouble accepting.

We don't really have many viable trout fisheries in SW WA. except for a few lakes with planted trout. Please don't misread my comment, I have no problem with providing a fishery for folks with stocked trout, but it needs to be recognized there are those for whom fishing is a different type of endeavor than floating around in a crowd chasing stocked fish. The upper NFL (and a very few other streams) provide that type of experience with the opportunity of enjoying really large trout. On a recent outing up there last summer my oldest son (10) tailed five fish, the smallest was around 25 inches and the largest right at 29 inches. While the fishing isn't all about big fish, there aren't many areas anywhere affording this type of fishing experience anymore, especially to children.

I LIKE to fly fish for winter steelhead, my children like to fly fish for winter steelhead and my friends like to fly fish for winter steelhead. I know the preceding sentence sounds selfish and self servicing but it needs to be understood people like to have a winter fishery. Further we enjoy our trout fishery as well. We enjoy the solitude, the challenge, the peace and almost visceral rejuvenation that comes from exploring these remote waters and the excitement and challenge of (fly) fishing them.

I know I have kind of jumped all over the board in this email and please forgive my 'long-windedness' but this is a broad scoped issue and it certainly extends beyond the confines of my own personal desires and concerns. I didn't even bother to touch on the commercial aspects of an apparent loss of the winter fishery should this draft plan become a reality, not just to myself, but to many other local businesses as well.

Thank your for the time to at least read my comments and I hope you can provide me a connection to WDFW's position on the proposed plan and perhaps attempt to answer some of my questions.

As an aside, I know that Paul has mentioned my question of turning the upper NFL into a year round trout fishery for SW WA. to you. It may be a moot issue in view of the re-introduction effort but I would enjoy the opportunity to further explore the upper NFL trout fishery with you.

Cordially,

Wes Hill

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