

## FINAL MEMORANDUM

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**To:** Wells, Rocky Reach, and Rock Island HCPs Coordinating Committees      **Date:** September 24, 2013  
**From:** Michael Schiewe, Chair  
**Cc:** Kristi Geris  
**Re:** Final Minutes of the August 27, 2013 HCPs Coordinating Committees Meeting

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The Wells, Rocky Reach, and Rock Island Hydroelectric Projects Habitat Conservation Plans (HCPs) Coordinating Committees met at the Radisson Gateway Hotel, in SeaTac, Washington, on Tuesday, August 27, 2013, from 10:00 am to 4:00 pm. Attendees are listed in Attachment A of these meeting minutes.

### ACTION ITEM SUMMARY

- Chelan PUD will summarize available data on fish passage at Rocky Reach Dam during the “off-season” winter months, and provide these data to Kristi Geris for distribution to the Coordinating Committees (Item II-B).
  - Chelan PUD will evaluate the potential to extend fish counts at Rocky Reach Dam into the “off-season” winter months, starting winter 2014/2015 (Item II-B).
  - Chelan PUD will evaluate the potential to complete the 2013/2014 winter maintenance on the Rocky Reach Right Fishway Ladder prior to the usual March 1 deadline (Item II-B).
  - Chelan PUD will finalize the Rock Island and Rocky Reach Draft 2013 Fish Spill Report, and provide the final report to Kristi Geris for distribution to the Coordinating Committees (Item II-C).
  - Steve Hemstrom will provide an updated flow duration curve for valid survival studies using the 1929-1977 dataset to which the 1983-2012 dataset is added, and for comparison, also using only the 1983-2012 dataset, to Kristi Geris for distribution to the Coordinating Committees no later than the September 24, 2013 meeting (Item II-D). *(Note: Hemstrom will also include data from the month of June in the summer study period in both updated flow duration curves, as agreed to at the Coordinating Committees conference call on July 23, 2013.)*
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## **DECISION SUMMARY**

- No Statements of Agreement (SOAs) were approved at today's meeting.

## **AGREEMENTS**

- Coordinating Committees representatives present agreed to extend the 2013/2014 winter maintenance work period at Rocky Reach Dam by one month; rather than beginning January 2, 2014, the new start will be December 2, 2013, to allow more time to complete required work (Item II-B).

## **REVIEW ITEMS**

- "Assessment of Factors Limiting the Productivity of Summer Chinook Salmon in the Mid-Columbia River" by Hillman, Murauskas, and Hemstrom (2013), which was distributed to the Coordinating Committees on June 26, 2013, is available for review, with comments due to Steve Hemstrom (as discussed at the Coordinating Committees meeting on June 25, 2013).

## **REPORTS FINALIZED**

- There are no reports that have been recently finalized.

### **I. Welcome**

Mike Schiewe welcomed the Coordinating Committees and asked for any additions or other changes to the agenda. Tom Kahler added an update on the Douglas PUD 2013 Adult Lamprey Passage and Enumeration Study, and also a review of the HCP Coordinating Committees' Chairperson.

#### *A. Meeting Minutes Approval (Mike Schiewe)*

The Coordinating Committees reviewed the revised draft July 23, 2013 conference call minutes. Kristi Geris said that all comments and revisions received from members of the Committees were incorporated in the revised minutes, and that there were no outstanding

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edits or questions to discuss. The Coordinating Committees members present approved the draft July 23, 2013 conference call minutes as revised. Geris will finalize the meeting minutes and distribute them to the Committees.

## **II. Chelan PUD**

### *A. Rock Island Right Bank Fishway Outage, Auxiliary Water System Pump Repair, Off-season Upgrades (Steve Hemstrom and Lance Keller)*

Lance Keller recalled that in 2010, a fish attendant discovered fish entering the large attraction water reservoir adjacent to the right bank fishway via a missing metal vertical vane in the auxiliary water system (AWS) picket-barrier that separates the two areas at Rock Island Dam. He said that since that time, annual inspections included a "ping" test to detect damaged infrastructure. Despite not detecting any obvious damage to the vanes, a fish attendant again found sockeye in the same location as they were detected in 2010, as described in an email that was distributed to the Coordinating Committees by Kristi Geris on July 23, 2013.

Keller said the sockeye salmon were all small, and similar in size. He said that a recent analysis by Jeff Fryer (Columbia River Inter-Tribal Fish Commission [CRITFC]) indicated a 42% jack rate of sockeye detected at Bonneville for 2013 (also described in an email that was distributed to the Coordinating Committees by Geris on July 25, 2013). Keller said that Fryer's analysis was consistent with staff observing smaller fish in the AWS space—entering through a space too small for larger sockeye and summer Chinook. He added that, because mainly smaller sockeye appeared to have entered the space, fishway staff expected to find a "bow" in the metal vertical vanes that make up the picket-barrier instead of a complete vane missing, as was the case in 2010.

Keller said that the right bank fishway was taken offline July 24 to 25, 2013, and staff identified a bowed vane in the picket-barrier, as suspected. Rock Island Dam engineers and fishway crews riveted a bracket to the bowed picket-vane where the sockeye entered, as seen in a photograph (Attachment B) that was distributed to the Coordinating Committees by Geris on August 5, 2013. Keller said that the picket vanes are made of aluminum, and are not apparently rigid enough under high flow conditions. He added that, while they are firm

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now, they are fatiguing over time allowing excessive flex during periods of warmer water temperatures. He said that Rock Island Dam engineers are working on a long-term fix in the form of a top-to-bottom replacement of the picket-barrier panels and vanes.

Keller reminded the Coordinating Committees that each year at Rock Island Dam, a comprehensive inspection and overhaul is performed on one of the three fish ladders. He said that, coincidentally, this year the overhaul is planned for the right ladder; however, due to the size and scale of the repair, Rock Island Dam engineers say that engineering the fix will take an additional year to plan and install. He said that, this year, Rock Island Dam engineers plan to reinforce the weaker areas, and that the permanent replacement will be implemented during the 2014/2015 winter maintenance outage. Keller noted that the structure to be replaced has multiple panels, and is about 25 feet tall, and in one section, 15 feet wide. He also noted that on July 24, 2013, during the initial dewatering, three adult summer Chinook (two wild and one adipose [ad] fin-clipped) and one adult steelhead were rescued from the upper portion of the adult fishway. He said that, in total, 251 sockeye salmon, 16 summer Chinook, 3 rainbow trout, and a number of resident fish were rescued; and that a total of 31 sockeye mortalities were recovered from the AWS space.

Bryan Nordlund said that, based on a video of the inspection that Chelan PUD provided to the National Marine Fisheries Service (NMFS), it appeared that the picketed panels included steel cross-members and aluminum vanes, which, Nordlund said, differentially expand because of the dissimilar metals, creating tension in the aluminum vanes. He further offered his opinion that a cyclic tension over the years would weaken the softer aluminum vanes. Therefore, Nordlund recommended that Rock Island Dam engineers consider all stainless steel vanes and support structure for the replacement. Nordlund also recommended considering replacing the 1-inch spacing with 5/8-inch spacing that will also prevent lamprey from passing into the AWS space. Steve Hemstrom said that smaller spacing is being considered to the extent that it will not cause hydraulic changes. Nordlund said that the key is keeping the percent open area in the replacement structure nearly the same as the percent open area in the existing structure—then the hydraulics should not change much. He also suggested that a perforated plate would be worth considering as a replacement for the existing system, since it can serve the same purpose as the vanes and still maintain the same surface area. Perforated plate is available in a wide variety of percentage open area,

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thicknesses, and hole dimensions and geometry. Nordlund offered his assistance to Chelan PUD with the re-design of the AWS diffuser system.

Keller said that directly following the picket vane repair, a failing output bearing was detected on the main shaft of one of three attraction water pumps, also in the right bank adult fishway at Rock Island Dam, as described in an email that was distributed to the Coordinating Committees by Mike Schiewe on August 8, 2013. Keller said that the pump was taken out of service for repair on August 6, 2013, and replacement bearings were ordered. He said that, in the interim, in order to achieve the differential criteria at the right adult fishway entrances with only two pumps operating, one of the right bank tailrace entrances was closed. Keller explained that this entrance is located at the end of the tailrace training wall where the spillway and powerhouse meet. Repairs were complete and the right bank adult fishway returned to normal operation and criteria on August 12, 2013, as described in an email that was distributed to the Coordinating Committees by Geris that same day. Keller said that replacement bearings will now be stocked at the facility in case similar repairs are needed.

*B. Rocky Reach Adult Fishway – Request for Earlier End-of-season Outage For Maintenance  
(December 2013) (Lance Keller)*

Lance Keller recalled that last year, Chelan PUD requested an earlier than usual winter maintenance outage date at Rocky Reach Dam in order to repair a cracked rotor in Turbine Unit 1 (C1). The purpose of the change was to ensure Chelan PUD could return the unit back to service prior to the 2013 spring outmigration. Keller said that this year, Turbine Unit 2 (C2) is in need of the same repair. Additionally, he said that Turbine Unit 10 (C10) is completely offline due to internal hydraulic issues that caused an adjustment of the blade, which in turn resulted in the unit shutting down because it could not stay in sync. Turbine Unit 6 (C6) is also down for rotor repair, which followed the Turbine Unit 5 (C5) outage. Keller said that once C6 is back online, work can start on C2. He said that work on C2 should be complete by the end of April 2014; however, in order to allow enough time to complete this work, Rocky Reach staff have requested starting the winter maintenance period on December 2, 2013, instead of the usual January 2 start date. Keller reminded the Committees that the C1 outage performed in the last maintenance period, for the same repairs, lasted from the beginning of the year until April 22, 2013. He added that the

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maintenance period for fishways typically ends March 1— so, the requested 2013/2014 fishway maintenance period for C2 would start December 2, 2013, and end March 1, 2014.

Steve Hemstrom indicated that there tend to be few adult fish passing the dam during the winter months because the water is so cold, but acknowledged that empirical data is lacking. Jim Craig said that most coho and steelhead numbers decrease by mid-November. Bryan Nordlund said that he is less concerned about passage in December, but suggested that there may be a benefit to re-opening the ladder by early February because listed steelhead may be migrating to tributary streams after wintering in reservoirs. Hemstrom said that routine ladder maintenance also needs to occur, which typically takes until March 1. He said, however, that he will evaluate the potential to complete the 2013/2014 winter maintenance on the Rocky Reach Right Fishway Ladder prior to the usual March 1 deadline. He also said that he will compile any existing data on fish passage at Rocky Reach Dam during the “off-season” winter months, and he will evaluate the potential to extend fish counts at Rocky Reach Dam into the off-season winter months, starting winter 2014/2015.

Coordinating Committees representatives present agreed to Chelan PUD’s proposal to extend the Rocky Reach Dam 2013/2014 winter maintenance work outage by one month, changing from a beginning date of January 2, 2014, to a beginning date of December 2, 2013, to allow more time to complete required work.

*C. Rock Island and Rocky Reach Draft 2013 Fish Spill Report (Steve Hemstrom)*

Steve Hemstrom reviewed Chelan PUD’s 2013 HCP Preliminary Rocky Reach and Rock Island Fish Spill Report (Attachment C) that was distributed to the Coordinating Committees by Kristi Geris on August 26, 2013. Teresa Scott asked how the cumulative index count is calculated, and Hemstrom explained that the count starts when the first subyearling Chinook is identified passing the dam, and ends on August 31 when the bypass operation ends. He noted spill ends when 95% of the run is estimated to have passed. Scott asked about involuntary spill at Rock Island and Rocky Reach, and also if spill records differentiate between types of spill (i.e., required spill, voluntary spill, involuntary spill, etc.). Hemstrom said that spill types can be differentiated using the known spill percentage (i.e., 9% at Rocky Reach for summer spill) the day-average total river flow and the day-average total spill flow shown on the Data Access in Real Time (DART) website.

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Hemstrom reviewed Tables 1 and 2 on page 2 of Attachment C. Bob Rose asked if there were any correlations between adult returns and smolt monitoring index numbers, and Hemstrom replied that he was unaware of any such relationship. He added that Chelan PUD has not calculated predictive smolt to adult survival ratios (SARs) based on fish sampled. Bryan Nordlund noted the almost 50% reduction in juvenile steelhead counts from the Rocky Reach bypass, and asked if the recalculation of hatchery program sizes might be the cause. Mike Schiewe replied that the recalculated release numbers will be in effect starting in 2014, and added that 2013 was the first year of brood collection for the recalculated programs. Nordlund asked if the Rocky Reach Juvenile Fish Bypass Surface Collector (RRJFB SC) was operating regularly throughout the entire 2013 spill season. Hemstrom said that the bypass started April 1, 2013, and that the RRJFB SC was not fully operational until April 21, 2013; he added that this fact may have affected the counts as well. Keller said that, according to DART, the first steelhead was detected at Rocky Reach on April 3, 2013, and double-digit numbers were not detected until late-April, which implies that the RRJFB SC outage was likely not a major driver for the lower steelhead counts.

Hemstrom said that Chelan PUD will finalize the Rock Island and Rocky Reach Draft 2013 Fish Spill Report, and provide the final report to Geris for distribution to the Coordinating Committees.

*D. Valid Study Flow Duration Curve Preparation (Steve Hemstrom)*

Steve Hemstrom said that he recently received the 1929-1978 Bonneville Power Administration (BPA) model dataset from NMFS that was used to develop the existing Valid Study Flow Duration Curve. Hemstrom reminded the Coordinating Committees that the existing curve was calculated using both the 1929-1978 BPA model dataset and empirical data from 1983 to 2001. He said that he has not yet updated the curve, but plans to provide an updated flow duration curve for valid survival studies using the 1929-1978 dataset to which the 1983-2012 dataset is added, and for comparison, also using only the 1983-2012 dataset. He noted, however, the uncertainty surrounding potential changes in Canadian water storage and the Columbia River Treaty. Bryan Nordlund suggested the value of recalculating the curve after terms of the Columbia River Treaty are settled. Hemstrom said that the curve only needs updating every 10 years; and Nordlund replied that it was his

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understanding that the curve could be adjusted at any time in the event that existing conditions change. Teresa Scott asked about data from 1979 to 1982, and Hemstrom replied that data were not recorded for those years. He said that this absence of data was also noted in the HCPs.

Hemstrom said that he will provide the updated flow duration curves to Kristi Geris for distribution to the Coordinating Committees no later than the September 24, 2013 meeting. *(Note: Hemstrom will also include data from the month of June in the summer study period in both updated flow duration curves, as agreed to at the Coordinating Committees conference call on July 23, 2013.)*

*E. Chelan County Noxious Weed Board Plan for Application of Milfoil Control Chemical in Rocky Reach (Steve Hemstrom)*

Steve Hemstrom said that, as discussed at the Coordinating Committees' meeting on June 25, 2013, Chelan PUD submitted a comment letter to the Chelan County Noxious Weed Board (the Weed Board) regarding their Integrated Aquatic Vegetation Management Plan (IAVMP) and, specifically, regarding the proposed pilot application of Triclopyr triethylamine (TEA) near the mouth of the Entiat River. Hemstrom said that the purpose of Chelan PUD's letter was to relay concerns from Chelan PUD and the HCP Coordinating Committees, and facilitate continuing discussion regarding the possible effects of Triclopyr TEA. He reminded the Coordinating Committees that the IAVMP cited a NMFS Biological Opinion (BiOp) that addressed Triclopyr butoxyethyl ester (BEE)—not Triclopyr TEA; and that Chelan PUD is recommending due diligence for the application of Triclopyr TEA. Hemstrom said that during a joint call attended by Chelan PUD, Washington State Department of Ecology (Ecology), and the Weed Board regarding Chelan PUD's comment letter, the Weed Board showed lack of interest to address additional questions or comments on the IAVMP, or on the proposed use of Triclopyr TEA. Hemstrom said that the proposed application date for the herbicide is fall 2014. He said that Chelan PUD is concerned by the Weed Board's lack of response to their concerns.

Teresa Scott asked if consultation with NMFS and the U.S. Fish and Wildlife Service (USFWS) is required, and Bryan Nordlund replied that he is looking into that. He explained that with herbicides, there are nationwide consultations; and added that the U.S.

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Environmental Protection Agency (USEPA) and NMFS have been in disagreement regarding the regulation of pesticides. Nordlund said that he agrees there needs to be consultation, but how it gets done is another question. He added that he would discuss an “advisement letter,” with a NMFS fish toxicologist stationed in his office (but assigned to NMFS nationally) as an interim measure preceding completion of consultation with USEPA, but ultimately the decisions on pesticide consultation will be made at the national level. Scott said that she contacted regional staff at the Washington Department of Fish and Wildlife (WDFW), and was told that whatever they had the power to do has been done. Mike Schiewe said that there must be a federal nexus for a Section 7 consultation to be required, and that Chelan County apparently does not have that nexus. He suggested that USEPA probably approved the use of Triclopyr TEA, and he is unsure that there is anything further that the Coordinating Committees can do at the Chelan County level.

### **III. Douglas PUD**

#### *A. Wells Dam Fish Counts Update (Tom Kahler)*

Tom Kahler said that Wells Dam fish counts are still behind. He said that it is impractical to hire another counter since a new relief counter is currently being trained, and the 2012 relief counter is now full time. He said that the number of fish passing the dam has decreased, so counts are catching up. He said that there have been issues with similar sized fish of multiple species (minijack Chinook, jack sockeye, and resident species) repeatedly passing back and forth through the count window, which requires additional time to sort through which fish need to be counted and which can be ignored. Bryan Nordlund suggested that this behavior might be related to passage conditions caused by the recent count window diffuser modifications. Kahler said he did not know, and that next year Douglas PUD plans to have two relief counters, as well as different video and lighting systems. Lance Keller noted that Chelan PUD is also slightly behind on fish counts due to restrictions on overtime.

#### *B. Wells Dam Bypass Operations Update (Tom Kahler)*

Tom Kahler said that Wells Dam bypass operations concluded on August 19, 2013, at midnight, as described in an email distributed to the Coordinating Committees by Kristi Geris that same day.

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*C. Subyearling Study Update (Tom Kahler)*

Tom Kahler said that there have been 3,280 detections of subyearling Chinook so far this year. He said that the total tagged this year was about 17,000 fish. Kahler reviewed counts at different detection locations, and noted that subyearlings are still being detected at Rocky Reach, with 1,975 detections to date. Kahler said that monitoring will continue, and he added that he has not yet had a chance to begin analyzing these data. Steve Hemstrom asked about mean travel times, and Kahler replied that he will distribute details on mean travel times following the meeting. *(Note: Kahler provided a brief summary of mean travel times to Kristi Geris on August 28, 2013, which she distributed to the Coordinating Committees the same day.)*

*D. Fisheries and Oceans Canada Report – Effectiveness of the Fish Water Management Tool as No Net Impact Compensation Vehicle (Tom Kahler)*

Tom Kahler said that Dr. Kim Hyatt is planning to develop his report on the Fish Water Management Tool (FWMT) into three peer-reviewed journal articles. Kahler said that the first article, which he has already reviewed, focuses on the modeling and how it addresses noncompliance with the Okanagan Basin Agreement, and the next two articles will describe the weight of evidence supporting the benefits of the FWMT, as Hyatt presented to the Priest Rapids Coordinating Committee Hatchery Subcommittee (PRCC HSC) and HCP Hatchery Committees at their combined session on August 22, 2013. Kahler said that preparations of the papers are behind schedule, and they will not likely be available until the end year.

*E. 2013 Adult Lamprey Passage and Enumeration Study Update (Tom Kahler)*

Tom Kahler said that the Yakama Nation (YN) provided lamprey for the study, and that 101 lamprey were passive integrated transponder (PIT)-tagged and radio-tagged, and an additional 5 lamprey were PIT-tagged only. He said that 9 PIT-tagged and radio-tagged lamprey were released directly into each ladder (18 total), and he added that fish released in the ladders have all been detected by the upper ladder detection arrays. He said that, due to delays in reporting counts (see Item III-A), up-to-date total lamprey counts are not available; but he did report that 17 lamprey have been counted at the window as of August 17, 2013. Kahler said that the fish released below the dam do not appear to be approaching the dam, and they appear to be dropping further downstream of the release location. He said that, to

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date, there are insufficient data collected to determine fishway entrance efficiency. Lance Keller asked where lamprey were released downstream of the dam, and Kahler replied that 83 lamprey were released at the downstream end of Carpenter Island, about 1.5 miles downstream of the dam. Mike Schiewe said that Douglas PUD plans to have preliminary results available by fall 2013, and that a final report, prepared with LGL Limited Environmental Research Associates, will be available by spring 2014.

*F. Review of the HCP Coordinating Committees' Chairperson (Tom Kahler)*

Tom Kahler said that the review of the HCP Coordinating Committees' Chairperson, Mike Schiewe, and supporting staff, Kristi Geris, was positive. He added that the Coordinating Committees also acknowledged other Anchor QEA staff who have helped support the HCP Coordinating Committees throughout the years. He said that the only suggestion was to coordinate more with Denny Rohr and the PRCC HSC to synchronize discussion items of mutual interest.

#### **IV. Hatchery and Tributary Committees Update (Mike Schiewe)**

Mike Schiewe updated the Coordinating Committees on the following actions and discussions that occurred at the last Tributary Committees' meeting on August 20, 2013:

- *2013 General Salmon Habitat Program Proposals:* The Tributary Committees completed their review of proposals received for the General Salmon Habitat Program, and tentatively approved funding for seven projects; all of which were partial funding requests. The Cascade Columbia Fisheries Enhancement Group (CCFEG) submitted four of nine proposals received—three were funded. The Chelan County Natural Resource Department (CCNRD) submitted two of nine proposals received—one was funded. The remaining proposals received and funded were from Chelan-Douglas Land Trust (CDLT), Okanogan Conservation District (OCD), and Trout Unlimited – Washington Water Project (TU-WWP). Total Tributary Committees contributions equaled \$1.12 million. Current Tributary Committees balances include \$4 million in the Rock Island fund, \$1.6 million in the Rocky Reach fund, and \$1.5 million in the Wells fund. Bryan Nordlund asked why CCNRD's Icicle-Peshastin Irrigation District Pump Exchange was not funded, and Tom Kahler replied that there were numerous issues, including a lower-cost competing proposal.
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- *Contract Extension Request:* The Rock Island Tributary Committee approved a contract extension request from the CCNRD on the Wenatchee Levee Removal and Riparian Restoration Project.
- *Review of the Tributary Committees Chairperson:* The Tributary Committees agreed unanimously to retain Tracy Hillman as the Chairperson for the next 3-year period.
- *Upper Columbia Salmon Recovery Board Request:* The Tributary Committees elected to contribute \$3,000 (\$1,000 from each of the administrative allowances) of the Plan Species Accounts to help sponsor the 2013 Upper Columbia Science Conference on November 13 and 14, 2013.

Schiewe said that, this month, the Hatchery Committees held a three-part meeting beginning with their regular monthly meeting on the morning of August 21, 2013, which was held at Douglas PUD. He said that the afternoon was dedicated to a presentation by Douglas PUD and HDR Engineering, Inc. (HDR) on the modernization of Wells Hatchery. Schiewe said that the Hatchery Committees reviewed the Wells Hatchery Modernization Master Plan, and had requested a presentation by HDR. He said that, in general, discussions were well-received, and that another opportunity for the Hatchery Committees to provide input will be at the 30% design stage. Lastly, on the morning of August 22, 2013, the Hatchery Committees met in a joint session with the PRCC HSC to receive an update on sockeye programs presented by the Okanogan Nations Alliance (ONA) and Fisheries and Oceans Canada (DFO). Schiewe said that Dr. Kim Hyatt's presentation was similar to what was presented to the Coordinating Committees at their meeting on August 28, 2012. He said ONA staff reported that construction has started on the new Kl cp'elk' stim Fish Hatchery in Penticton, British Columbia; the plan is to begin rearing sockeye in fall 2014. He added that production is expected to be about 5 million fry at the facility. Schiewe then updated the Coordinating Committees on the following actions and discussions that occurred at the Hatchery Committees' meeting on the morning of August 21, 2013:

- *Hatchery Genetic and Management Plan (HGMP) Update:* NMFS is now focusing on processing all permits for the Mid- and Upper-Columbia. In the Okanogan, designation of spring Chinook as a Section 10(j) experimental population has been delayed. The goal after designation is to move juveniles from Winthrop to Chief Joseph Hatchery (CJH) for grow out and for release in the Okanogan. This
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designation was expected to be completed this year, but the deadline was not met. As a result, Winthrop National Fish Hatchery (NFH) will release 100,000 to 150,000 subyearling spring Chinook in the Methow this fall to get under capacity. The permitting for the 10(j) designation is now expected to be completed by mid-March 2014. The Okanogan steelhead HGMP and Biological Assessment (BA) for the Section 10 permits are expected to be completed by January 20, 2014. In the Methow, most issues have been settled among *U.S. v. Oregon* parties. They are moving forward with a single BiOp for spring Chinook and steelhead, which is expected to be complete in January 2014. Douglas PUD noted that the current Methow steelhead Section 10 permit expires October 2, 2013, and expressed concern that they will endure a period of not being permitted. It was suggested that if formal consultation is already underway, the program is still covered under the existing permit. NMFS is being asked to provide a letter confirming that this is true. In the Wenatchee, everything is on track to finish by October 22, 2013. A single BiOp will be submitted for steelhead and Chinook, and bull trout consultations are on schedule with USFWS.

- *Hatchery Monitoring and Evaluation (M&E) Appendices – Meeting of the PUDs:* Greg Mackey agreed to develop draft tables for inclusion in the Hatchery M&E Plan Appendices, for Hatchery Committee review.
  - *Hatchery M&E Update:* Chelan PUD announced that they received one full proposal in response to the Chelan PUD Hatchery M&E RFP. It is unlikely that they will convene a review panel, as previously discussed. They plan to have an Implementation Plan ready for Hatchery Committees' review no later than October 2013.
  - *Methow Spring Chinook HGMP Update:* Chelan PUD's 2015 release plan includes collecting 2013 broodstock at Winthrop, rearing at Eastbank, overwintering at Carlton, and likely co-acclimating with coho at Chewuch Pond. Chelan PUD is developing a HGMP for that program, which will soon be available for Hatchery Committees' review.
  - *Live Spawning Twisp River Steelhead Broodstock:* The YN provided an update on their Steelhead Kelt Reconditioning Program. They are working through fish health concerns, and are discussing potentially moving the program from Winthrop NFH to the Methow Fish Hatchery, or possibility to Wells Hatchery. Current funding ends in
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2017, and Keely Murdoch indicated that continued funding will likely depend on the success of the program.

- *Chief Joseph Hatchery Brood Collection*: The Colville Confederated Tribes (CCT) reported that spring Chinook broodstock was successfully transferred from Leavenworth NFH to CJH, and that they anticipate meeting full summer Chinook brood for natural and hatchery stocks (i.e., 60% of 700,000). The CCT also reported security issues at CJH which resulted in the theft of 42 brood; purse seine collections in the following days were successful in collecting replacement fish.

## **V. HCP Committees Administration (Mike Schiewe)**

### *A. Next Meetings*

The next scheduled Coordinating Committees meeting is September 24, 2013, to be held in person at the Radisson Hotel in SeaTac, Washington. The meetings on October 22, 2013, and November 26, 2013, will be held either by conference call or in person at the Radisson Hotel in SeaTac, Washington, as is yet to be determined.

## **VI. Fish Passage Center**

### *A. Comparative Survival Study: Introduction and Snake River Basin Results (Jack Tuomikoski)*

Mike Schiewe welcomed the Fish Passage Center (FPC) and PRCC HSC. Jack Tuomikoski (FPC) presented an introduction to the Comparative Survival Study (CSS), reviewed Snake River Basin Results, as included in the 2012 CSS Report, and provided an overview of recent CSS workshops. Tuomikoski's presentation (Attachment D) was distributed to the Coordinating Committees by Kristi Geris on August 28, 2013.

#### Introduction

Tuomikoski said that the CSS was initiated in 1996 by states, tribes, and USFWS to estimate survival of selected life stages of Chinook salmon and steelhead in the Snake and Columbia rivers. He said that the study uses PIT-tag detection data, and that data used are from fish tagged specifically for the CSS, and also from other studies. Tuomikoski said that, since its inception, the CSS project has been independently reviewed and modified a number of times, including reviews by the Independent Scientific Advisory Board (ISAB) and the Independent Scientific Review Panel (ISRP). Tuomikoski reviewed the temporal and spatial coverage of

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the CSS, noting that the Snake River Basin has been monitored for more than 18 years and has many more CSS tag and release sites than the Mid- and Upper Columbia; and, therefore, much more is known about stocks in the Snake River Basin than in the Columbia basins (in terms of the CSS). Tuomikoski said that smolt survival estimates developed under the CSS inform understanding of the effectiveness of rearing habitat actions and hydrosystem actions; and adult success in the CSS informs understanding of harvest management, hydrosystem actions, estuary habitat actions, and transportation effects. He said that Snake River SARs in the CSS are calculated from Lower Granite Dam while Mid- and Upper Columbia SARs are calculated from McNary Dam. Tuomikoski said that the CSS provides the region with long-term indices and comparisons of SARs, as well as addressing management questions related to hydropower operations, and hatchery and habitat evaluations.

#### Snake River Basin 2012 CSS Report

Tuomikoski reviewed Snake River Chinook and steelhead SARs. He noted the high correlation between hatchery and wild Chinook SARs, which, he said, indicated that hatchery and wild Chinook seem to be responding similarly. He reviewed juvenile survival results, including the results of finer-scale analyses, as requested by ISAB. Consistencies included faster emigration and lower mortality when water transit time is reduced and spill levels are high; for steelhead, a correlation between increased surface passage structures and decreased fish travel times; and increases in mortality rates over the season. Tuomikoski reviewed Snake River transport-to-in-river survival ratios (TIR), which, he said, were used to evaluate transportation programs for Snake River stocks. He said that results indicate that as in-river survival increases, TIR decreases, and he added that, on average, the success rate for transported fish was 90% of that for their in-river counter parts. Steve Parker asked how the CSS defines “straying,” and Tuomikoski replied that because the CSS is based on PIT-tag data within each sub-basin, a stray is considered any fish that enters and does not leave the system. He said, however, that this does not account for such factors as recreational harvest. Tuomikoski said that data regarding age at maturity for spring and summer Chinook were developed as monitoring tools and to inform harvest management. He said that results indicated that age at maturity and jack percentage of Chinook in the Snake River and Mid- and Upper Columbia basins were influenced by both stock and year factors.

#### Recent Workshops

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Tuomikoski summarized discussions from CSS workshops that were held in 2011 and 2013. He said that, in 2011, the workshop focused on determining the relative importance of various factors in determining salmon and steelhead survival rates. Factors discussed included Federal Columbia River Power System (FCRPS) operations, freshwater and ocean conditions, and fish attributes. The workshop also focused on building tools that evaluate and optimize FCRPS operations to meet Northwest Power and Conservation Council (NPCC) SAR objectives. Key findings included multiple lines of evidence indicating the existence of delayed hydrosystem mortality; freshwater and marine survival increases with increased water velocity, increased spill, and lower percent transported; and the fact that the current FCRPS configuration results in a limited ability to increase water velocity. Notwithstanding this latter limitation, there is the opportunity to further manage spill combined with surface passage to reduce powerhouse passages.

Tuomikoski said that the 2013 CSS Workshop focused on the review of a draft design for a management experiment to increase the amount of voluntary spill at FCRPS projects, as well as on recommendations to strengthen the proposed experiment. Tuomikoski reviewed the experimental design, spill scenarios and objectives, and prospective tools. He said that models that have been fit to the empirical data will be used to generate the distribution of SARs for a range of river and ocean conditions and two spill scenarios; and then distributions will be summarized relative to desired goals. He said that the projections suggest that spill of 115/120% total dissolved gas (TDG), or higher, would reduce the risk of very low SARs (less than 1.0%), and increase the likelihood of SARs greater than 2.0%.

Russell Langshaw questioned only using increased spill amounts in the experimental design, and suggested also including reduced spill amounts in order to refine the models. Michele DeHart replied that, in recent years, there have not been many low spill years, and that the purpose of the experiment would be to reflect what is currently happening. She added that this is a monitoring program for a lifecycle study, and it is not meant to be a study about flows.

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*B. Comparative Survival Study: SARs and Juvenile Metrics of Upper Columbia Stocks (Robin Ehlke)*

Robin Ehlke (WDFW) reviewed SARs and Juvenile Metrics of Upper Columbia Stocks, as included in the 2012 CSS Report. Ehlke's presentation (Attachment E) was distributed to the Coordinating Committees by Kristi Geris on August 28, 2013. Ehlke reviewed the CSS objectives for Upper Columbia stocks, and noted their similarity to CSS objectives for Snake River stocks. She described the Upper Columbia mark groups, which include a Wenatchee Basin group, an Entiat-Methow aggregate, a Wenatchee-Entiat-Methow aggregate, and three groups marked at Rock Island Dam. She also reviewed a map depicting CSS tag and release sites in the Upper Columbia River Basin. Ehlke reviewed Upper Columbia juvenile and adult metrics. She noted that Upper Columbia McNary to Bonneville SARs, as calculated for the CSS, do not include or account for juvenile mortality occurring through the Upper Columbia to McNary Dam; and therefore, these SARs are biased high. She reviewed Rock Island to McNary juvenile survival, noting that survival for steelhead was slightly higher than for Chinook. She also reviewed Rock Island to McNary juvenile passage metrics and environmental conditions, again noting the similarities to Snake River stocks. Findings included decreased fish travel time with increased flow and with Julian date; decreased instantaneous mortality for Chinook with increased spill levels at Wanapum and Priest Rapids, and increased instantaneous mortality for steelhead with increase in Julian date; and increased reach survival with increased flow and spill. Ehlke reviewed graphs depicting wild and hatchery Chinook McNary to Bonneville SARs, wild and hatchery steelhead McNary to Bonneville SARs, and wild and hatchery Chinook and steelhead Rock Island to Bonneville SARs. Results indicated that overall Upper Columbia McNary to Bonneville SARs for 2000 to 2010 Chinook were highly correlated with spring Chinook SARs from the Mid-Columbia and with spring/summer Chinook SARs from the Snake River. Steve Parker noted that in the graphs depicting wild and hatchery Chinook and steelhead McNary to Bonneville SARs, the average SARs for wild and hatchery stocks are not on the same time series, which gives the impression that hatchery stocks are not faring as well. Ehlke said that, over time, the averages are still similar. She added, however, that the graphs will be revised to be on the same time series to avoid confusion. Ehlke reviewed graphs comparing Upper Columbia stocks with Snake River stocks, and she noted that those data indicate that SARs in the Upper Columbia are generally lower than in the Snake. Lastly, Ehlke reviewed conclusions,

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specifically noting that increases in the numbers of mark groups and detection sites would strengthen the data.

*C. Comparative Survival Study: Discussion (All)*

Jack Tuomikoski said that data for the Mid- and Upper Columbia Basins are based on about 4,000 to 5,000 PIT tags, which, Robin Ehlke added, is a small sample size compared to the Snake River Basin. Michele DeHart also added that any increase in PIT tag data in the Mid- and Upper Columbia Basins would help analyses in those basins.

Tom Kahler questioned the way stocks with different SARs were compared in the Mid- and Upper Columbia River and Snake River basins, and Ehlke replied that increased marked groups will improve the accuracy of those comparisons. Kahler asked which release group was numerically dominant in the SARs calculations, and Tuomikoski replied that Leavenworth was, with 15,000 detections per year. Russell Langshaw questioned the accuracy of the reported hatchery M&E SARs, noting that he believes those values should be higher. DeHart said that those values can always be re-evaluated. She said that the analyses are based on PIT tag data that were retrieved from the PIT Tag Information System (PTAGIS), and she added that additional data can be folded into the analyses, if available. Kahler noted that SARs for USFWS hatchery fish are already inherently low, and that increasing the mark rate of those fish will only exacerbate lower SARs. DeHart reminded Kahler that the CSS is a monitoring program, and that the purpose is to reflect what is actually happening. She said that if Leavenworth plays a significant role in low SARs, then that needs to be reflected. Mike Schiewe suggested developing Leavenworth-only SARs. DeHart said that, ultimately, she hopes to have enough data to separate all stocks. She said that the only reason for aggregate stocks is because, currently, there are not enough PIT tags.

Steve Parker noted the similarities in increased SARs for Columbia River and Snake River steelhead in 2008; and DeHart recalled that 2008 was a high flow and high spill year, as well as a good ocean year. Parker then noted the distinct split in reach survival for Columbia River and Snake River steelhead in 2008, which, he noted, did not make sense when considered with the similar increased SARs in 2008. DeHart explained that the information in the Snake River Basin is more developed compared to that in the Columbia River Basin, largely due to the low number of tags in the Columbia River Basin.

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Steve Hemstrom noted that high uncontrolled spill years, notably 2008, 2011, and 2012, were not consistently reflected in all graphs. DeHart said that this discrepancy could be due to other factors such as high TDG years and wind power-related issues. Kirk Dodson said that high TDG years also did not seem to be consistently reflected in the graphs. DeHart said that the focus in the Upper Columbia has been on the past 3 years, and that those data may not have been incorporated yet.

DeHart reminded everyone that survival data can be found on the FPC website, and that those data can be used to see how hatchery SARs are calculated.

Bob Rose asked what it would take to go from a monitoring program to the proposed experiment to test increased spill levels, and he asked what the ideal number of fish would be to test these variables. DeHart said that the FPC is currently working with ESSA Technologies Ltd. to assess how large the mark group would have to be. She said that the experiment is a work in progress, and that elements such as representative mark group sizes and duration are yet to be determined.

Bill Tweit said that the CSS appears to evaluate project survival differently than the HCPs, and he asked if there were plans to compare the seemingly different assessments. Hemstrom said that, in terms of a tagging comparison, because the CSS is based on PIT-tag data only, and the HCPs are based on both PIT-tag and acoustic tag data, the two are not comparable due to the substantial differences in tagging methods. Erin Cooper suggested that, because the rejection rate for acoustic tags is much higher for reasons such as size and disease, only the largest, healthiest fish are tagged. She said that PIT-tagged fish are more representative of the run, and also include fish that would be included in an acoustic study, while the reverse is not true. Tweit said that the limitations of acoustic tag studies have been recognized, and that a lot of work has been done to account for those biases. Cooper noted that acoustic tag studies are also limited range studies, and therefore, are not representative of the ocean. DeHart said that acoustic tags are used for project survival, and the CSS informs the entire life cycle, so they cannot be readily compared. She added that, initially, performance standards at projects were based on the premise that ocean survival and project survival were independent of each other; however, she said, this premise has been found to

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be untrue. She said that, for this reason, the entire life cycle needs to be considered. Kahler noted that HCP survival studies are paired-release studies, and the CSS releases are not; additionally, Douglas PUD's PIT-tag-based survival studies account for tag shed and tagging mortalities, whereas for most of the fish used in the CSS analyses, tag shed and tagging mortalities are not accounted for. Participants acknowledged the inappropriateness of comparisons between HCP survival study results and CSS reach survival results.

Langshaw asked how hydrosystem-related mortalities are separated from freshwater conditions. Tuomikoski said that several factors affect juvenile survival, which are evaluated when they come back as adults. He said that often the factors are spill and flow. DeHart said that those analyses have been run on Snake River fish, as described in the 2012 CSS Report. Langshaw said that he read the 2012 CSS Report but did not see how the two were separated out. DeHart said that analyses are different, year to year, based on specific requests; and Langshaw suggested that these types of details should be a regular feature included in the annual reports.

Langshaw noted that the CSS emphasizes the importance of spill and water transit time; however, transport results are not very strong. He also asked why survival is so low, if the relationship between freshwater and the ocean is strong. DeHart said that low survival is due to delayed mortality with transported fish. She added that a recent analysis indicates delayed mortality through hydro passage. Tweit suggested that transport still makes sense when in-river conditions are poor.

Patrick Wyena Sr. asked if predation was accounted for in the CSS when calculating powerhouse mortalities, and DeHart replied that all reach analyses incorporate mortalities by predation. Tuomikoski said that, because the CSS evaluates overall survival, predation is not individually parsed out. DeHart added that individual predation data can be incorporated into CSS models if there is interest in looking at those data. Hemstrom suggested incorporating the Rock Island avian data.

Bryan Nordlund asked how well the CSS reflects the run at large. DeHart said that she believes there are sufficient data for the Snake River, but suggested that data could be greatly improved in the Mid- and Upper Columbia River basins. Nordlund replied that he was

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thinking more in terms of, incrementally, how hatchery and wild stocks are evaluated, and he added that he believes evaluations can be fine-tuned. He said that, for example, if Leavenworth production affects the run at large, but only 1 or 2 Leavenworth fish are detected at Rock Island, and the other fish are coming from other tributaries, they are not equally weighted. DeHart said that the only way to improve that is to increase marking.

Parker said that a comparison of SARs in the Snake and Upper Columbia may just reflect differences in SARs in hatchery and wild fish, as Kahler noted earlier. He added that these differences may incorrectly imply differences in hydropower systems or in hatchery versus wild fish. DeHart said that obtaining wild fish data is a more difficult process, and she added that the FPC worked with Idaho Fish and Game to improve wild data in the Snake River Basin by installing several traps in the area.

Parker asked if there are enough wild fish in the Upper Columbia to estimate reach-specific survival of populations. Tuomikoski said that smolt SARs to the first dam can be obtained; however, there are not enough fish to obtain subsequent survivals. Parker expressed doubt that people will be convinced that hatchery and wild SARs are comparable. He said that the concern is that low SARs in hatchery fish will decrease SARs in aggregate Upper Columbia populations, and he added that he would like to determine if there is a way to calculate SARs without wild fish. DeHart said that the only wild fish marking takes place in the Wenatchee, and she added that there are also some PIT-tagged wild fish in the Entiat and Methow.

Teresa Scott asked if the FPC is asking the PUDs if there is a way to increase tagging; and DeHart replied that the FPC believes that the PUDs know best what is available and what the options are. She added that Parker brought up a good point—is it feasible to tag a large number of wild fish? Tweit suggested combining tag technologies. Parker suggested PIT-tagging enough wild fish to at least calculate reach-specific survivals. He said that this may show a ratio of wild-to-hatchery performance through the system. DeHart said that tagging wild populations in the Snake River would be a huge effort, and that it only gets harder to obtain juvenile survival downstream because of fish mortalities.

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Nordlund said that since the inception of the HCPs, he has carefully tracked counts in the Upper Columbia, and adult counts for every species at Priest Rapids Dam, and likely Rock Island, Rocky Reach, and Wells dams as well, have markedly increased; and wondered how those counts reconcile with poor SARs calculated by the CSS study. He said it seems apparent that there are holes somewhere in the SAR estimates. Hemstrom also noted the high sockeye SARs based on Dr. Kim Hyatt's work, and he added that sockeye are the farthest migrating fish in the Upper Columbia.

Kahler asked if a power analysis has been run to determine what sample size is needed for a good SAR estimate, and Tuomikoski replied that 50,000 typically is enough for a robust estimate. Tuomikoski added that what was presented today represented smaller marked sizes, and that 50,000 would provide stronger transport and in-river data.

Denny Rohr thanked the HCP Coordinating Committees for hosting the FPC presentation, and thanked everyone for participating.

### **List of Attachments**

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| Attachment A | List of Attendees  |
| Attachment B | Photograph of the Repaired Rock Island Dam Right Bank Auxiliary Water System and Fishway |
| Attachment C | Chelan PUD's 2013 HCP Preliminary Rocky Reach and Rock Island Fish Spill Report          |
| Attachment D | Comparative Survival Study: Introduction and Snake River Basin Results                   |
| Attachment E | SARs and Juvenile Metrics of Upper Columbia Stocks                                       |
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**Attachment A**  
**List of Attendees**

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<b>Name</b>	<b>Organization</b>
Mike Schiewe	Anchor QEA, LLC
Kristi Geris	Anchor QEA, LLC
Denny Rohr†	D. Rohr & Associates, Inc.
Michele DeHart†	Fish Passage Center
Jack Tuomikoski†	Fish Passage Center
Erin Cooper†	Fish Passage Center
Steve Hemstrom*	Chelan PUD
Lance Keller*	Chelan PUD
Tom Kahler*	Douglas PUD
Curt Dotson†	Grant PUD
Russell Langshaw†	Grant PUD
Tom Dressert†	Grant PUD
Bob Rose*	Yakama Nation
Steve Parkert†	Yakama Nation
Patrick Wyena Sr.†	Wanapum Elder
Bryan Nordlund*	National Marine Fisheries Service
Scott Carlont†	National Marine Fisheries Service
Jim Craig*	U.S. Fish and Wildlife Service
Teresa Scott*	Washington Department of Fish and Wildlife
Robin Ehlke†	Washington Department of Fish and Wildlife
Bill Tweit†	Washington Department of Fish and Wildlife

Notes:

\* Denotes Coordinating Committees member or alternate

† Joined for the Fish Passage Center Comparative Survival Study Presentation

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