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## BAKER RIVER PROJECT RELICENSE

### Aquatic Resources Group

January 9, 2007

9:00 a.m. – 2:30 p.m.

USFS Supervisor's Office

21905 64<sup>th</sup> Avenue W

Mountlake Terrace, WA

(425) 775-9702

### Conference Call Procedures-Dial In Info:

1-888-228-0484 (call automatically charged to PSE)-Dial in at the designated date and time –

Conference ID: 6058

Conference Password: 12345

### DRAFT AGENDA

1. Review Agenda, Notes, Actions	9:00 – 9:15
2. Fish Facilities Operations Topics	9:15 – 11:30
<ul style="list-style-type: none"><li>• Juvenile Fish Facilities Planning</li><li>• Juvenile Passage Biological Studies</li><li>• Sockeye Spawning Beach 3 &amp; 4 Operations</li><li>• Artificial Incubation Operations</li><li>• 2007 Sockeye Fry Allocation</li><li>• Fish Rearing Inventories &amp; Releases</li><li>• Adult Trap Protocol Update or Changes</li></ul> <p><i>Break at 10:30</i></p>	
3. Update on Implementation Activities	11:30 - 12:00
<ul style="list-style-type: none"><li>• Fish Propagation Facilities Design</li></ul>	
<i>Lunch (provided)</i>	12:00 – 12:30
4. Implementation Activities (cont.)	12:30 - 1:00
<ul style="list-style-type: none"><li>• Fish Propagation Facilities Design Update (cont)</li><li>• Fish Passage Technical WG Report (FSC, Adult Trap, Biological Studies)</li><li>• Initiate Other Article Plan Proposals in 2007</li></ul>	
5. Relicense Aquatic Studies Update	1:00 - 1:45
6. BRICC/Re-License FERC Process Update	1:45 - 2:15
7. Confirm Date & Agenda for Next Meeting (tent. Feb 13), Mtg Evaluation	2:15 - 2:30

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## **Baker River Project License Implementation**

### **Aquatics Resource Group Meeting Final Meeting Notes**

January 9, 2007  
9:00 am - 2:30 pm  
**USFS Mountlake Terrace Office**

### **FINAL MEETING NOTES**

**Team Leader: Arnie Aspelund, PSE,** (arnie.aspelund@pse.com)

#### **PRESENT**

Arnie Aspelund, Jacob Venard, Doug Koens, Dave Jenness, Nick Verretto, and Doug Bruland (PSE); Phil Hilgert (R2 Resource Consultants); Arn Thoreen (Skagit Fisheries); Kirt Hughes, Brett Barkdull, Jed Varney, Mike Muller, Kevin Kurras; Ted Thygesen, and Rich Johnson (WDFW); Stan Zyskowski (NPS); Chuck Ebel (USACE); Scott Lentz (USFS); Bob Helton (Citizen); Craig Olson (NWIFC); Jeff McGowan (Skagit Co.); Stan Walsh (SRSC); Steve Fransen (NMFS); Lyn Wiltse and Jamie Riche (PDSA Consulting, Inc).

**NEXT ARG MEETING DATES** *(These are scheduled to occur the 2<sup>nd</sup> Tuesday of each month and each will be confirmed on a month-by-month basis, by consensus of the ARG based on need.)*

February 13, March 13, April 10, May 8, June 12, July 10, Aug. 14, September 11

These meetings will run from 9 – 3 and will be held at USFS Office in Mountlake Terrace

We will need to find a new location for 4<sup>th</sup> quarter meetings: October 9, November 13, December 11

#### **ACTION ITEMS**

- All – Let Arnie know if your facility is available for meetings (USFS Mountlake Terrace Office will only be available through the end of their fiscal year.)
- All – Send suggested changes to the adult trap protocol (now or in the future) to Arnie for distribution to co-managers ... or send directly to Kirt/Rich/Jon-Paul/Stan.
- Jed – Write letters to FS and Whatcom Co. re: need for access to Blue Tarp road and Beach 3 with implications if access is not provided; cc Stan, Rich and Jon-Paul.
- Doug B.-Contact Whatcom County about Baker Lake Highway Sulphur Cr bridge replacement.
- Scott – Get permit to take down hazard tree at Big Spring headworks ASAP (and possibly get it taken down).

- Arnie – Attach the revised adult trap protocol sheet from Kirt to these notes for distribution.
- Nick – Arrange FSC field trips: May and mid-summer.
- All – Let Jacob know if you're interested in joining the Aquatic Riparian teamlet.
- Doug B.- Contact Concrete to clean up the boat launch.
- All – Reserve the tentative 2007 ARG meeting dates in your calendars.
- Nick – Send hard copies of the FPTWG notes to Bob Helton.

### **Jan. 9, 2007 AGENDA**

- 9:00 – 9:15 Review Notes, Agenda
- 9:15 – 11:30 Fish Facilities Operations Topics
- Juvenile Fish Facilities
  - Sockeye Spawning Beach 3 & 4 Ops
  - Artificial Incubation Ops
  - Fish Rearing Inventories & Releases
  - Adult Trap Protocol / Changes
  - 2007 Sockeye Fry Allocation
  - Lower Baker Outage Update
  - Juvenile Passage Biological Studies
- 11:30 – 1:00 Update on Implementation Activities
- Fish Propagation Facilities Design
  - *Lunch (provided)*
  - Fish Passage TWG Report
  - FSC, Adult Trap, and Biological Studies
  - 2007: Initiate Other Article Plan Proposals
- 1:00 – 1:45 Relicense Studies Update (A-38 Native Char & A-09 Instream Flow)
- 1:45 – 2:00 BRICC / FERC DEIS Update
- 2:00 – 2:15 Confirm date (Jan. 9) & agenda for next meeting; evaluate meeting

### **IN SYMPATHY**

We were sorry to note the passing of Imogene Bowen (Upper Skagit Tribal Elder). Bob shared some highlights of her impressive heritage.

### **FISH FACILITIES OPERATIONAL TOPICS**

#### **Juvenile Fish Facilities, Artificial Incubation Ops, and Fish Rearing Inventories & Release**

Doug B (PSE) walked the group through the Dec 2006 Baker Fish Inventory and the History of Salmon & Rainbow releases. He explained that we will be using net pens in the Upper Baker forebay to help with space limitations in Raceway 1 and 2. Sockeye in Raceway 1 will be pit-tagged and then freeze branded toward the end of this month. Raceway 2 will hold Coho for freeze branding as well.

We will start distributing Rainbow from the Trout pond to tribes and will release some to the Upper Skagit and hold some for the Trout Fest in June. He noted a poor Coho return Puget Sound-wide; there was enough to meet PSE needs, but not enough to stock Lake Shannon.

Doug shared that they hold onto Sockeye through the summer for a fall release; these are ad-clipped and

released into Baker Lake. We hope to recover them as they migrate out as smolts in the spring. In addition to the 50k released at the Blue Tarp in Dec., an additional 500 were pit-tagged with transponders and will be released for the springtime biological study.

The Lower Baker trap box, which recovers migrants from Lake Shannon is being repaired and will be reinstalled in February. A new panel in the guide net will be installed in March. They'll be doing an ROV inspection to inspect the Upper Baker guide net in February. A new, re-designed net will be installed with the FSC.

Doug announced that PSE has hired two new bio-techs at the project to meet current needs and prepare for license implementation activities.

### **Sockeye Spawning Beaches 3 & 4**

Kevin reported we emptied Beach 3 in September and planted the fish at Blue Tarp. The road leading up to beach three is no longer passable; it needs a new road bed after being washed out by high water events. We were able to recover equipment before the high water events. We also lost the road in two other places; hope to open it up to Blue Tarp this month, though we may need to use an alternate route, as the County-owned bridge is impassible.

Kevin also reported that a large Cedar tree is endangering the headworks. Asplundh will address as soon as they're freed up and secure the necessary permits. Scott will see if the Forest Service can help. Jed will write letters to the Forest Service and Whatcom Co. re: need for access to Blue Tarp road and Beach 3 with implications to the fisheries program and urgency / timing requirements and alternative actions (what we'll do if the road isn't repaired). Jed will send the Forest Service letter directly to Scott so he (Scott) can help move it through the FS system. Stan asked Jed to cc: Stan, Rich and Jon-Paul.

Arn expressed a desire to work with PSE/FS to use some fallen trees as large woody debris as Skagit County is currently importing trees with root wads from King County for LWD.

Beach 4 is empty and they're getting ready to put the shade covers on. Didn't have as many fish this year; waited an extra week due to the snow / weather. IHN sampling was completed on every section, with results all within norms. We took several hits on the headworks this year; silt got into the trout pond without tripping the alarm. It is running stable now. They are prepping containers at Beach 4 to take fry out of incubation. The counters have been worked on and should be installed at the end of the month ... maybe they'll work this year?! The last take was yesterday – 4.7% loss. Even with this loss Kevin reported that we have sufficient numbers to make the program.

### **2007 Sockeye Fry Allocation**

Stan shared that we came close to our goal for Sockeye brood stock. Last fall, we made a decision to revert back to our traditional 70/30 split (70% Baker, 30% Shannon), and that's our plan for this year. Planting is at Baker first, then Shannon after an IHN check. We will hold until March 15 and then start the release. 130,000 fry will be taken for the extended rearing program from two takes a week apart in the middle of the run.

## **Adult Trap Protocol**

Kirt walked us through the co-managers' recommended changes to the adult trap protocol. In trying to streamline the protocol and align with HSRG requirements, the May winter-run steelhead block would be shifted down to the summer-run. The winter-run allocation period will be through November. No ad-clipped fish will be taken to Marblemount in November. The egg take will be cut off January 31<sup>st</sup> in accordance with new agency policy. The recommendation is to sacrifice all hatchery steelhead at Baker or transfer them to Marblemount. There was discussion around the need to address the public relations... can the fish be given to the tribes or made available to the public, could they be put in a cooler and removed later?).

Brett summarized by saying that we are not wanting to put hatchery fish back up where they could spawn ... this would only affect 100 fish or so. In summer, marked fish would not be returned to the Skagit River. In Dec – Jan, all hatchery Steelhead will go to Marblemount. The default destination for Pink Salmon returns will be to Skagit River; in those rare years with an abundance, extra can go to Baker.

Kirt created a new protocol sheet during the meeting and projected it for live group review and feedback. He will send it to Arnie for attachment to these notes. If you have suggested changes for this (either now or in the future), please send them to Arnie for distribution to the co-managers ... or send directly to Kirt/Rich/Jon-Paul/Stam.

## **FISH PASSAGE TECHNICAL WORKING GROUP REPORT**

Nick will share graphics of the FSC and adult trap at our at the Feb. 13 meeting.

## **FSC Update**

Nick reported that the Floating Surface Collector is in fabrication now and will be online March 2008. Mobilization to the site will begin the end of January. The "belly tanks" are being manufactured in Montana with delivery set for early March. He estimates it will take five to six weeks to construct these and float them out into the reservoir. We'll be building a berm for truck / crane access out to the tanks. Construction will then occur on top of those tanks.

We have completed design for a fish sampling station. The plan is to extend the existing parking area up on the dam, and have a stairway building to allow access without having to go down the ladder (ladder will be replaced for back-up access). We will build a large landing station at the base of the dam for the docking and transport. Moorage will be complex; the net has been redesigned. Nick also explained that we will be placing an impermeable North/South wall along the spit to narrow and increase sweeping velocity along the net. PSE will staff to address security issues.

## **Migrant Fish Biological Study**

License articles stipulate high fish passage performance standards so we're working to develop an accurate evaluation procedure. We must first define "migrant" and then determine how best to measure them. Last year, we did an ATPase study to account for fish who just don't want to migrate (appears to be about 10% - but it's really hard to measure which fish have actually smolted).

This will inform our recapture rate that we apply against performance standards. Last year, we studied

Coho; this year's study will be expanded to include Sockeye. Since we can't use wild fish, we're using all captive fish for our stocks. We'll release some early to mimic wild fish.

We'll be pit-tagging about 7,000 more Coho and Sockeye the end of this month. Future FPTWG meetings will be shifting from FSC to performance standards, biological evaluation, adult trap, with special emphasis on the ground study for this year and who we would apply the results to the performance standards. Nick will look into arranging field trips in May and mid-summer.

## **IMPLEMENTATION ACTIVITIES**

### **Fish Propagation Facilities – Design and VE Update**

Dave Jenness (Project Manager from PSE) distributed a revised layout of the hatchery design, highlighting the changes since our September meeting. There was a value engineering session in October to review the key objectives of the hatchery:

- Continued operation of the spawning beaches
- Provide Phase I adult holding facilities for 6,000 adults and incubation facilities to produce 7 million fry,
- Provide for 20k pounds instantaneous production over 3 months, annual basis for any species (Sockeye, Spring Chinook, Steelhead, Coho, Rainbow Trout)
- Include provisions to meet Phase II goals (11 million Sockeye fry)

To meet those objectives, we will modify Spawning Beach 4, construct new hatchery facilities, adult holding ponds, raceways and circulars. The recent Value Engineering session resulted in some modifications: floor concrete thickness, corridor widths, and leaving open the start up tanks with a predation barrier. We also decided to start with four holding ponds (while building in the infrastructure for four additional); can see in phase 2 if we'll need two or four more (depending on production). We also increased the number of 16' circulars to eight by replacing the original design's 12' circulars with 16'. Note: There will be room for more 12' or 16' circulars in future if needed in the future.

Latest changes: Increased the width of the adult holding ponds from 16' to 20' and added four small 4x4x15 raceways giving the 20K program more flexibility. Dave reported they are also focusing on increasing vehicle access and mobility within the area; those modifications have worked well. We will be reducing the number of jib booms at the spawning beaches to two.

Dave explained that they are currently debating whether to use a hypalon barrier *as material for new liner* at the spawning beaches. Concern was expressed about exposure to the elements which could lead to degradation. We are not sure yet about an onsite disposal system (for fish anesthesia, etc); ARG input / recommendations will continue to be integrated into decisions here. Dave shared that PSE is preparing to issue an RFQ for a design / build contract – estimating April / May for the 85% plan.

## **LICENSE STUDIES UPDATE**

### **Connectivity:**

Settlement Agreement calls for upstream transport between Lake Shannon and Baker. Driven by the USFWS concern for Bull Trout ... will fold this into the FPTWG. *The current plan calls for two years of biological studies followed by* construction of a prototype facility to study pending the construction of a permanent facility.

### **Native Char (Bull Trout) Biological Study:**

Started tagging adult Char (color-coded by location) several years ago to help determine what we should do with fish from the *upstream* trap. They collected juvenile char from the headwaters to get tissue samples from separate and more discrete reaches and tributaries in the Baker.

They concentrated their efforts in Bald Eagle Creek (2), in the reach above Pass Creek (33) ... including Baker River between Bald Eagle and Pass Creek (15) and other areas, they collected 97 juvenile char total. Also collected samples from Sulphur Creek, dividing the creek into four reaches; one fish was captured in reach one and 33 were captured in reach two. Have not seen many adult char above reach two, and haven't seen any juveniles in night surveys above reach two. The USFWS will analyze these tissues to check the genetic signature against the adults in the adult trap at LB, then work with the Fish Passage TWG to determine transport protocol (e.g. catch fish earlier in bi-modal season when fish are brighter?). Will also look at where and what type of capture facility to place on Sulphur Creek.

Phil shared that they did snorkel surveys in Sulphur Creek every 10 to 12 days. They didn't go into Sulphur Creek during November due to the storms. When they went back into Sulphur Creek in December, visibility was good but there weren't any char sightings. Over the course of the season, they saw about 30 un-clipped Chinook ... they were bright, stocky, appear not to be ocean-going. They also found two dead ones which hadn't spawned but had well-developed eggs ... per last meeting's guidance, they took the snouts *and provided them to the Marblemount Hatchery folks*.

### **Spawning Surveys in the Middle Skagit**

Phil shared results of the spawning surveys in the Middle Skagit River. The aim was to identify the locations, depth and risk of dewatering of Chinook redds. They *measured* 566 redds in 2006, all of them (100%) were protected from dewatering, even down to 3500 cfs. Phil explained that this was due to the lower flows during the survey. His handout includes a table showing flows during the surveys from 2001 – 2006. Years that have lower median daily flow conditions (ex: 2002, 2003, 2006) have fewer redds at risk of dewatering. If data show the relationship between flow conditions and risk of dewatering is consistent, perhaps we could decrease the frequency of surveys – unless other conditions change.

### **Lower Baker Four-Stage Shut Down Test Procedure**

Phil walked us through the four stages of the shut down test procedure. This test was conducted over eight hours on December 19 in response to the Settlement Agreement. PSE agreed to look for opportunities to reduce down-ramping on the Lower Baker with the current turbine until the new powerhouse comes online. They placed stage recorders in the Skagit above the confluence, *Skagit River* at transect one, and below the Baker powerhouse. The goal was to *maintain a downramping rate of less than 2 inches per hour at Skagit River Transect 1* and to the extent possible to stay within 0.5 inch every 15 minutes. We reviewed the results to river stage changes, and found that the test results were pretty close to the 2 inch target when looked at in one-hour increments ... the 15-minute target was not so close. PSE engineers are reviewing the implications of various changes on the turbine, other equipment and impact to power grid.

### **2007: Other Article Plan Proposals**

Arnie reported that we will begin development of the various aquatics management plans (LWD,

shoreline erosion, gravel, and flow implementation) in 2007. We will also consider reporting protocols. He, Jacob and Phil will create outlines of these plans for our review.

Jacob is also the lead for the Aquatic Riparian team; the first meeting is scheduled for 9:00 – noon, February 1. Arn, Scott, Stan, Rich, and Jon-Paul expressed interested in representing the ARG.

### **Boat Launch**

Doug B. will contact Concrete to clean up the boat launch ... it was covered in silt during the last high-water event.

### **BRICC / FERC UPDATE**

At the December BRICC (Baker River Interim Coordinating Committee) meeting, there was much discussion about the high water events, local jurisdictions' interest in flood control issues, and legislative issues around flood control. Most folks think we aren't likely to see the license until April. Possible budget problems and/or any appeals could add another 9 months to the process. USFWS is working with *NMFS* on the Biological Opinions and expect those to be done by the end of February.

The BRICC also discussed the operating definition of quorum relative for decision-making purposes. Cary Feldmann (PSE) will bring together a teamlet to discuss this and bring a recommendation to the next BRICC meeting. The next BRICC meeting will be February 28, 2007.

### **HANDOUTS**

- Agenda & Notes
- PSE Salmon and Trout Release Record
- Baker Project Fish Inventory (Dec. 2006)
- Sockeye Spawning and Incubation Log
- Baker Adult Fish Trap Protocol (revised 12/14/06)
- Hatchery Concept Overall Site Plan (modified 11/9/06)
- 2006 Middle Skagit Spawning Surveys (DRAFT, Jan 2007)
- Native Char Investigations PowerPoint (Jan – Nov 30, 2006 Results)
- Initial Results of Dec. 19, 2006 Lower Baker Shut-Down Test

### **MEETING EVALUATION**

#### **What Went Well**

- Good chemistry / good meeting
- Kirt – good under pressure!
- Phil's presentation
- Appreciate the color-coded handouts
- Appreciate the smorgasbord (thanks, Arnie!)

#### **What to Do Differently**

- Break out the popcorn before videos!
- Too few analogies



- Missed Jon-Paul & Cary

### **DRAFT AGENDA FOR NEXT ARG MEETING**

**February 13, 2007 at USFS-Mtlk Terrace, 9:00 a.m. - 3:00 p.m.**

1. Welcome, review notes, action items, agenda
2. Fish Facilities Operational Topics
3. Update on Implementation Activities
4. Update on Other Article Plan Proposals
5. Relicense Studies Updates
6. Evaluate meeting, set next meeting agenda & location