



BAKER RIVER PROJECT RELICENSE

Aquatic Resources Working Group

June 14, 2001

9:00 a.m. – 2:30 p.m.
WA Department of Ecology
Room 1B/1C
3190 160th Ave. SE, Bellevue, WA

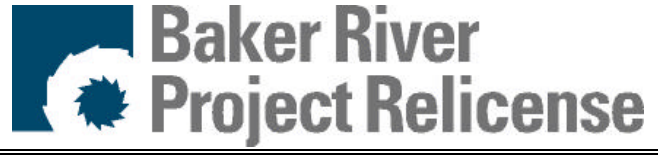
AGENDA

1. Review agenda and minutes
2. Review action items
3. Continue review of study plans and requests
4. Update on Fish Life History & Habitat Intersections
5. Presentation on USFS Watershed Analysis
6. Update on PSE operations model
7. Parking lot
8. Set agenda for next meeting (July 12)
9. Evaluate meeting

June 14, 2001

Driving Directions to Dept. of Ecology Office:

- 1) Eastbound on I-90 from I-5 or I-405: Take exit 11A, Keep left, drive past the 150th Ave. SE exit and take the 156th Ave. SE exit.



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- 2) **Cross over the freeway and move one lane to the left to avoid the 'exit only' lane.**
 - 3) **At the first light, turn right onto Eastgate Way. Follow Eastgate to 160th Ave. SE (3rd light) and turn left.**
 - 4) **Once on 160th Ave. SE, turn into the third driveway on the right. Beige two story building. Parking in front of the building or one block on the opposite side of 160th Ave. SE.**
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BAKER RIVER WATERSHED ANALYSIS (WA)

Aquatic Resources Overview

Mt. Baker-Snoqualmie National
Forest



10:22

WHAT IS A FEDERAL WA?

- **NW Forest Plan Requirement**
- **Aquatic Conservation Strategy (ACS) Component**
- **Characterizes** human, aquatic, riparian, and terrestrial features, conditions, processes, and interactions within a watershed
- **Watershed Scale Ecosystem Analysis**
- **Interactions of All Land Ownerships** (Especially Cumulative Effects)

WHAT IS A FEDERAL WA?

(cont.)

- **Guides Resource Mgt. Decisions**
- **Best Available Information**
- **Not A Decision Document!**
- **Revised & Updated As Appropriate**
- **Follows “Ecosystem Analysis at the Watershed Scale: Federal Guide for watershed Analysis Version 2.2” (USDA, USDI 1995)**

WA OUTLINE

- **CHP 1 – Watershed Characterization**
- **CHP 2 – Issues & Key Questions**
- **CHP 3 – Current Conditions & Trends**
- **CHP 4 – Synthesis & Interpretation**
- **CHP 5 – Recommendations**
- **APPD – Pertinent Background Info**

CHP 1- CHARACTERIZATION

- **BAKER R. SIZE** ~ **190,559 ac.** (~ 297 sq.mi.)
 - 106,048 ac. **NFSL** (56%)
 - 57,881ac. **NOCA** (30%)
 - 26,630 ac **DNR** & private (14%)
- **ORIGIN** Glaciers and Snowfields on Mt. Baker (10,778 ft.), Mt. Shuksan & Picket Range
- **LENGTH** ~ 32 miles long
- **LOWEST MAJOR TRIB.** to Skagit R. (largest, 6 most important Puget Sound watershed)



CHP 2- ISSUES & QUESTIONS

- **Maintain/Restore Ecological Role of Aquatic SP & Habitats (Baker & Skagit R.)**
- **Recreation vs Other Resource Protection**
- **Road & Trail Access vs Biophysical & Fiscal Limitations**
- **Energy Development vs Protect/Enhance Other Resources**
- **Cultural & Historic Resources, Values (Treaty Rights, etc.)**
- **Natural Hazards vs Public Safety**



CHP 3 - CURRENT COND/TRENDS

HUMAN DIMENSION

- Communities & Settlements
- Road Infrastructure
- Energy Development
- Flood Control
- Recreation

CHP 3- CURRENT COND/TRENDS

AQUATIC PROCESSES

- Hydrology
- Stream Flow & Water Quantity
- Water Quality
- Reservoir Shoreline Erosion
- Channel Processes

CHP 3 – CURRENT COND/TRENDS

HILLSLOPE PROCESSES

- Geomorphology & Soils
- Seismic Potential
- Volcanic Hazards
- Dam Foundations

CHP 3 – CURRENT COND/TRENDS

VEGETATION

- Vegetation Zones
- Plant Association Groups
- Plant Species & Habitats of Concern or Interest
- Natural Disturbances (fire, blow down, etc.)
- Range of Natural Variability



CHP 3 – CURRENT COND/TRENDS

WL HAB, DIVERSITY, KEY SP

- Late Successional Reserve (LSR)
- Deer & Elk
- Grizzly Bear (GBMA)
- Mountain Goats
- Other Wildlife Species & Habitats



09:59

CHP 3 - CURRENT COND/TRENDS

AQUATIC SPECIES & HABITATS

- Aquatic Species
- Aquatic Habitat Conditions
- Indian Fishery
- Recreational Fishery

CHP 4 - SYNTHESIS & INTERPRETATION

Key Areas of Interest:

- **Human Uses** – Increased Demand/Restrictions
- **Baker Hydro Project** – Altered Aquatic Functions & Processes
- **Public Health & Safety** – Dam Safety, Floods, Water Recreation, etc.
- **Riparian Structure & Function** – Loss Mostly on Private Lands (L. Shannon)



10:23

CHP 4 - SYNTHESIS & INTERP (cont.)

- **Habitat Connectivity** – Aquatic Habitat Interrupted
- **LSR** – Condition Variable; Restricts Other Resources
- **Wilderness** ~ **89,000 ac.** (46%)
- **Biodiversity** – Lost/Altered By Mgt. Activities
- **T, E & S Species** – Several Listed Recently; Protection Emphasis Affects Recreation, Public Safety, etc.
- **Water Quality**- Considered good; Much Unknown
- **Access & Travel Mgt.** – Conflicts w/ Other Resources



CHP 5- RECOMMENDATIONS

- **Improved Fish (All Species) Passage**
(especially for smolts)
- **Road Culverts Replacement for Fish Passage**
- **Improve Management for Other Fish Species**
- **Manage Reservoir Levels & Flows To Minimize Impacts To Other Resources**







CHP 5- RECOMMENDATIONS

(cont.)

- **Assist On-Going Fish Passage Improvement Efforts (Baker R. Committee, etc.)**
- **Validate Estimates of Aquatic Habitats Inundated By Baker Hydro Project**
- **Investigate Aquatic Habitat Mitigation Opportunities**
- **Determine (Agree On) Historic Fish Use**
- **Determine Current & Potential Fish Use**

CHP 5- RECOMMENDATIONS

(cont.)

- **Determine Historic & Present Basin Nutrient & Water Temperature Regimes**
- **Develop Site-Specific Restoration For High Lakes Impacted By Recreation**
- **Establish Production & Escapement Goals For each Fish Species That Meet ESA & ACS**

BAKER RIVER PROJECT RELICENSE

Aquatic Resources Working Group

June 14, 2001
9:00 a.m. – 2:30 p.m.
Dept of Ecology
3190 160th Ave. SE
Bellevue, WA

MEETING NOTES

***Aquatics Working Group Mission:** “To identify issues and develop solutions and recommendations addressing fish and aquatic resource interests related to the Baker River Project and its operations, leading to a settlement agreement.”*

Fish Team Leader: Arnie Aspelund, 425-462-3442, aaspel@puget.com

PRESENT:

Karen Kloempken (WA Dept. Fish & Wildlife), Stan Walsh (Skagit System Cooperative), Arn Thoreen (Skagit Fisheries Enhancement Group), Rod Sakrison (WA Dept. of Ecology), Bob Wright (WA Dept. of Ecology), Brady Green (U.S. Forest Service), Arnie Aspelund (PSE), Cary Feldmann (PSE), Doug Bruland (PSE), Nick Verretto (PSE), Sue Madsen and Phil Hilgert (R2 Resource Consultants), Chuck Ebel (U.S. Army Corp of Engineers), Don Schluter (Trout Unlimited, by phone), Gary Sprague (WA Dept. Fish & Wildlife), Bob Barnes (PSE), Tony Fuchs (PSE), Dick Raisler (Fidalgo Fly Fishers, WA Council-Federation Fly Fishers), Lyn Wiltse (facilitator - PDSA Consulting)

AGENDA

June 14, 2001

9:00 a.m.–2:30 p.m.

Room 1b & 1c, Department of Ecology in Bellevue, WA

Bring lunch

1. Review Agenda and Minutes
2. Action Items
3. Study Request Submittals/Study Plan Development – 1A, 1B, 10, 1C
4. Brady's presentation on Watershed Analysis

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5. Study Request and Plans - A2-24
 6. Update on PSE Operations Model
 7. Parking lot
 8. Set agenda for July 12 meeting
 9. Evaluate meeting

FUTURE DATES AND LOCATIONS

The team will continue to meet on the second Thursday of each month, from 9:00 to 2:30: July 12, Aug. 9, Sept. 13, Oct. 11, etc.

INTRODUCTIONS:

We welcomed Tony Fuchs, PSE Team Leader for Terrestrial Working Group and PSE representative on the Recreation Working Group.

NEW ACTION ITEMS

- **Arnie:** By 6/15 send out email reminder to team members re: all study-related action items and their due dates.
- **ALL:** Send study-related comments directly to Sue (R-2) and copy Phil, Arnie, and Nick.
- **ALL:** (especially Stan): Get any available fish spawning habitat information (supports A-1B study plan development) to Sue by June 25, or call R-2 (They will pick up!)
- **ALL:** Get Sue your feedback on Study Plan A-1C by June 25.
- **ALL:** Get comments to Sue on A-24 by 6/29.
- **ALL:** Get reservoir fish population data (supports A-03 study plan development) to Sue at earliest convenience.
- **Chuck:** Summarize A-10 data by September meeting.
- **Brady and Others:** Get Sue input for A-20 by 6/29.
- **Tony:** Send map data to Don.
- **Fred:** Talk with Terrestrial Group re: wetlands that are hydrologically but not directly connected to the river.
- **Sue:** Put together a one page summary of Type A vs. Type B data measurements/methods by 6/25.
- **Nick:** Set up a conference call to get direction on level of survey (Type A/B) for A-1a.
- **Don:** Provide information on cutthroat passage through Cascades to Arnie by June 25.
- **Bob:** Summarize current water quality data (by August 9 meeting)
- **Nick:** Coordinate with Forest Service re: A-13

REPORT ON OLD ACTION ITEMS

- Chuck notified team members when delta field survey took place. Sue accompanied him.
- Tony Fuchs reported that PSE is working toward making GIS the medium for their mapping. They are doing a digital terrain model for the reservoir fluctuation zone, in 5 ft. contour intervals. They are using digital topographical information to depict the FERC boundary. PSE is also working with Walker & Associates to create digital ortho photos (from a fly over in 1999). These show everything within the FERC boundary plus 100 meters out. Upper portions of tributaries are not included. There would have to be additional aerial photo

flights to capture these portions of tributaries. There was a request to have the relic Little Baker included in the area of study. Anyone wanting access to the data relating to the GIS map can make requests to Tony Fuchs at PSE : 425-462-3553. Reminder: these are all still in draft form.

- Rod: Met with PSE to come up with spill protocol.
- Arnie: Re-sent the most current version of A-2 for review.
- Brady: Invited Jim Chu to do presentation on Wild & Scenic River at July meeting. He is available.
- R-2: Completed Task 1 of R-A01.A by June 30.

STUDY REQUEST SUBMITTALS/STUDY PLAN DEVELOPMENT

Study #	Title	Notes/Next Steps
A01.A	Reservoir Tributary Habitat Surveys	Defer to conference call (decide Type A/B data measurements/methods)
A01.B	Reservoir Tributary Biological Surveys	Need additional information re: spawning habitats from team members. Get to Arnie by June 25. R-2 will bring map to supplement discussion on 7/12.
A01.C	Reservoir Tributary Delta Surveys	Distributed study plan and asked for team member feedback by 6/25. This study would address access (passage concerns from head cutting) and sub-surface flow. They hope to do these surveys this year.
A02	LB River Habitat Mapping	The group agreed to go ahead with the survey.
A03	Reservoir Fish Population Characteristics	Need available information from team members so can determine scope of survey.
A04	LB/Skagit River Flow, Gaging	Moving ahead (distributed gage location map).
A09 A24:	Skagit River Flow and Habitat Assessment (HIGH PRIORITY) Hydrologic and Geomorphic Analysis	Looking at flows, sediment transport. Will be looking at large woody debris. Will put together a study plan for A-20. Distributed study plan for A24 for comments. Get comments to Sue by 6/29. Sue reported they have some synthesized, unregulated data already. Will have comparison of flows: managed vs. unmanaged and an overall channel network analysis.

A05	Water Quality Sampling	Plan still pending. Still considering data collection methods. Need to identify critical path for sampling fecal coliform. This study ties to water quality certification required for license.
A06 A08	UB Passage Design Baffle Modification UB Passage System Evaluation	Completed May 25. Got in 2 weeks of study. The study is incomplete due to trouble raising the gates during early trial. Study is ongoing. Data from this preliminary study will help us set up a complete study in 2002. Will see summarized data in August.
A07	Lower Baker Forebay Bathymetric Survey	Will be done summer of 2001.
A10	Baker River Delta Habitat Assessment-Char	On May 10, Chuck, Sue and Doug (at elevation of 705 ft.) surveyed passage capability at tributary mouths. In general, they found no passage problems. Chuck will survey on June 15 to get full pool data.
A11	Nutrient Addition	Parking Lot- not for 2001.
A12	Instream Flows for Biodiversity	Parked until 2002 and beyond.
A13	Water Quality Assessment	Keep separate from A05.
A14	Reservoir Shoreline Erosion	Not for 2001-Needs further development.
A15	UB Delta Scour	Draft Study Plan is going through internal review at R-2.
A16	Lower Baker Delta/Channelization	Pending – Not for 2001.
A17	Tributaries Surveys Upstream of Barriers	Coordinate methodology with A01.
A18	Baker River Survey Upstream of 1 km.	Merged into A-1A.
A19	Review Limnological Information	Preview in August
A20	Large Woody Debris Management	Will begin drafting plan in August. Welcome input.
A21	Skagit Wild & Scenic River Values	Review Study Request for discussion at July meeting.
A22	Baker Lake Trout Impacts Evaluation	Review Study Request for approval at July 12 meeting. Get comments to Nick.
A23	Baker River Wild & Scenic River Values	Review Study Request for discussion at July 12 mtg.
A24	Hydrologic and Geomorphic Analysis	Study Plan distributed for comments. Comments due to Sue by 6/29.

BRADY'S PRESENTATION ON FEDERAL WATERSHED ANALYSIS

Brady Green walked the group through the purpose and content of the Federal Watershed Analysis. His power point presentation is available on the Puget Web Site. This is a working

document. Contributors will be asked to give feedback on the draft due to be distributed in July. The “final” version will be available to the public this fall.

UPDATE ON PSE OPERATIONS MODEL

Bob Barnes reported that they are on schedule for beta testing in August. They anticipate having the final product by the end of September. The model may not be able to explicitly deal with data needs relating to various resource areas. The model will be able to show different stage heights. It lacks an optimization function relating to specific resources. It will optimize under any scenario for power.

LIST OF MEETING HANDOUTS

- R-2 Consultants - Table 1. Summary of habitat data collected by various authors within tributaries to the Baker River upstream of lower Baker Dam. Includes Type A Data = Quantitative data on stream width, habitat units, substrate and the location and height/length of barriers. Type B Data = Quantitative data on stream width and the location and height/length of barriers. Type C Data = Qualitative description of stream habitat
- R-2 Consultants - Table 2a. Approximate length of channel accessible to anadromous salmonids and proportion for which Type A or B survey data are available in the Lake Shannon sub-basin
- R-2 Consultants - Table 2b. Approximate length of channel accessible to anadromous salmonids and proportion for which Type A or B survey data are available in the Baker Lake sub-basin
- R-2 Consultants – - Table 2c. Approximate length of channel accessible to anadromous salmonids and proportion for which Type A or B survey data are available in the Upper Baker Lake sub-basin
- U.S. Army Corps of Engineers – Chuck Ebel distributed a map entitled: The Baker River System as Fish Habitat
- STREAM NOTES, Rocky Mountain Research Station, Fort Collins, CO, April 2001. R-2 Consultants have a Nature Conservancy video:
- R-2 Consultants - Study Plan A-01.C, Reservoir Tributary Delta Surveys
- R-2 Consultants - Map – Location of Staff Gages Installed March 29, 2001
- R-2 Consultants - Study Plan A-24, Hydrologic and Geomorphic Evaluation of the Baker River

ADDITIONAL ISSUES

Water Quality/Quantity during planned maintenance outages

Water Quality/Quantity during unplanned outages

PARKING LOT

- Feedback on “Salmon on the Baker River” document
 - Different perspectives
 - Discuss posting reviews on web
- Chinook Working Group- Skagit River Chinook Recovery Plan
- Presentation on Northwest Forest Plan including Wild and Scenic Rivers Act (USFS) in fall?

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- Presentation on ESA (direct relationship to 4(d) Fred/August
 - State agency presentations re: mandates

EVALUATION OF MEETING

Well-Dones

- Finished early
- Thanks Ecology for hosting!
- Arnie's food
- Brady's presentation
- Tony's participation
- Got through status of all studies/requests
- Chuck's presentation
- Use/explanation of maps
- We work hard and get along well
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Opportunities to Improve

- Some side conversations
- Use crop
- Don not always getting information ahead of time
- Paper laden process!

Tentative Agenda for Next Meeting

July 12, 2001

9:00 a.m. - 2:30 p.m.

US Forest Service

Mountlake Terrace, WA

Bring Lunch

1. Review Agenda and Minutes
2. Review Action Items
3. Jim Chu – Wild & Scenic River Presentation
4. Study Requests/Plans
5. Update on PSE Operations model
6. Parking Lot
7. Set Agenda for August 9 (location TBD)
8. Evaluate Meeting