



BAKER RIVER PROJECT RELICENSE

Aquatic Resources Working Group

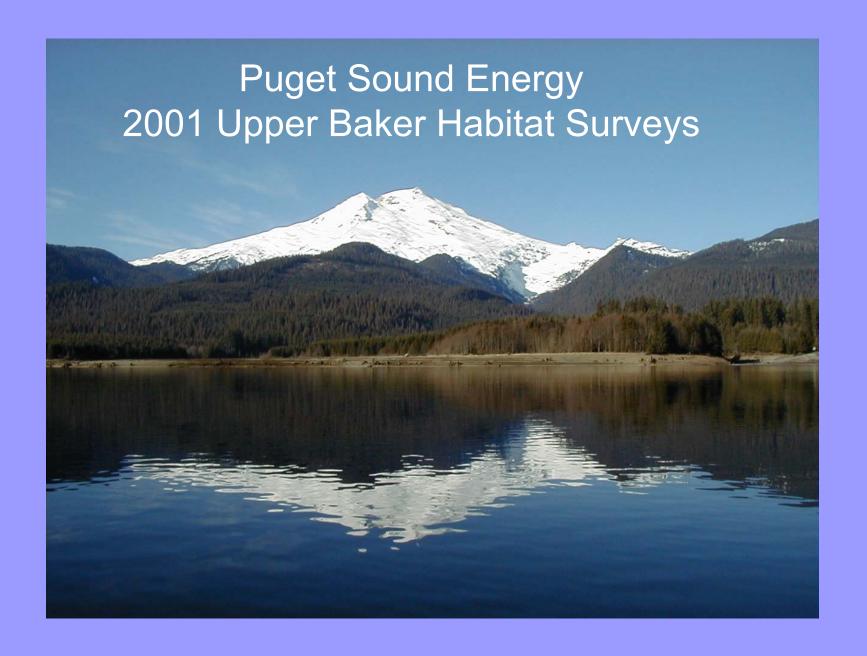
October 23, 2001

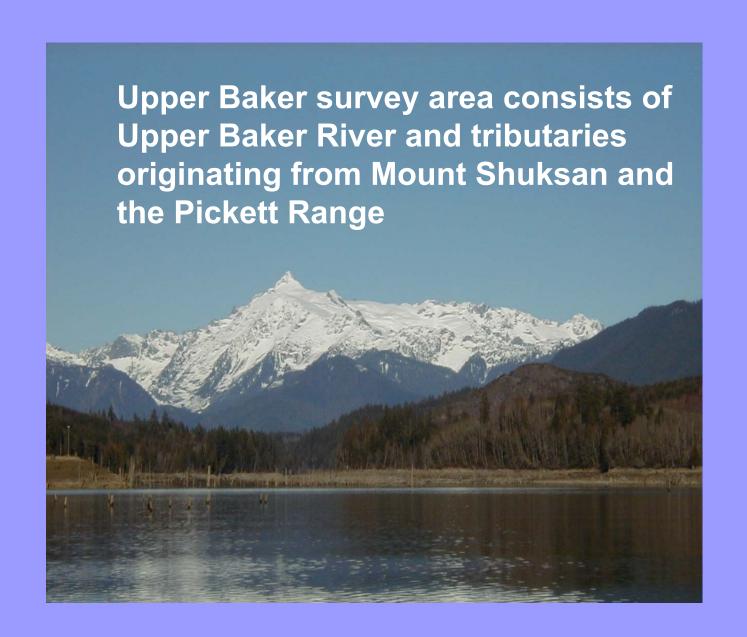
9:00 a.m. – 2:30 p.m. U.S. Forest Service (360-856-1934) 810 State Route 20, Sedro Woolley, WA (Highway 9 N. & SR 20 E. -Across from 3 Rivers Hotel)

AGENDA

1.	Review Agenda and Minutes
2.	Review Action Items
3.	Report from Fish Passage Technical Working Group & Baker River Committee
4.	Update on Ramping Rates
5.	Presentations: A01- Tributary Habitat Survey
6.	Continue Review of Study Plans and Requests
7.	Additional Issues
8.	Set Agenda for November 8 Meeting (USFS-Mountlake Terrace)
9.	Evaluate Meeting

October 23, 2001

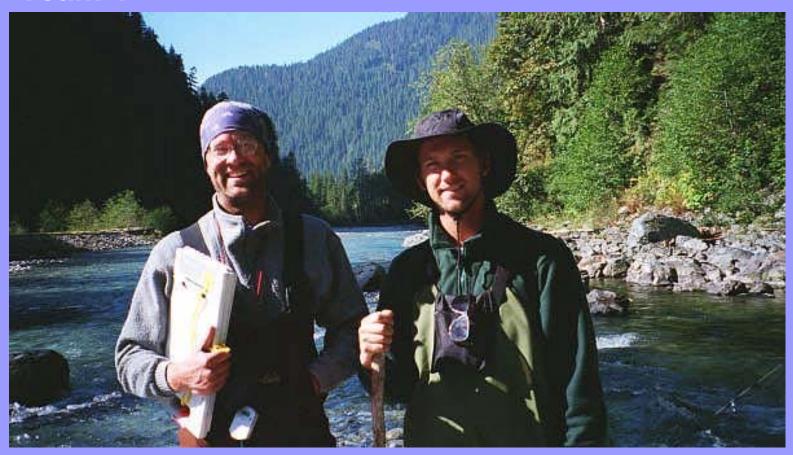




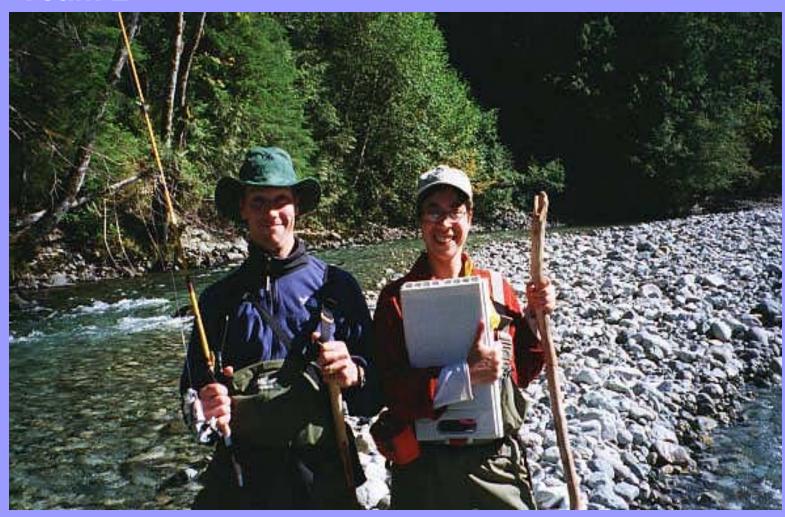
Baker River survey crew



Team 1



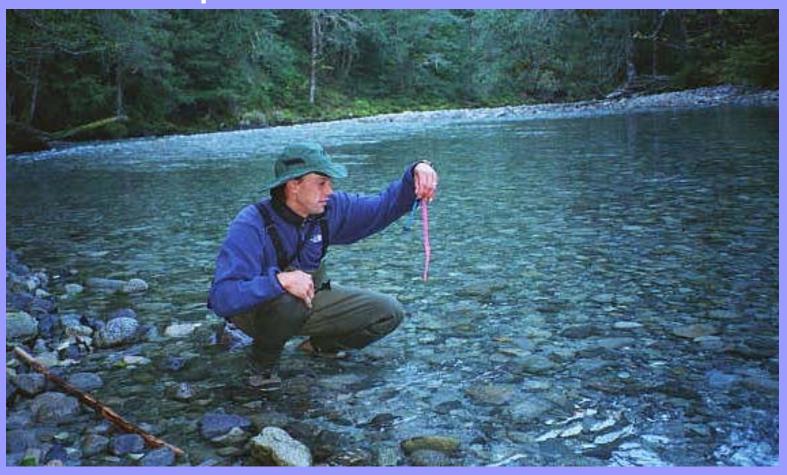
Team 2



Team support

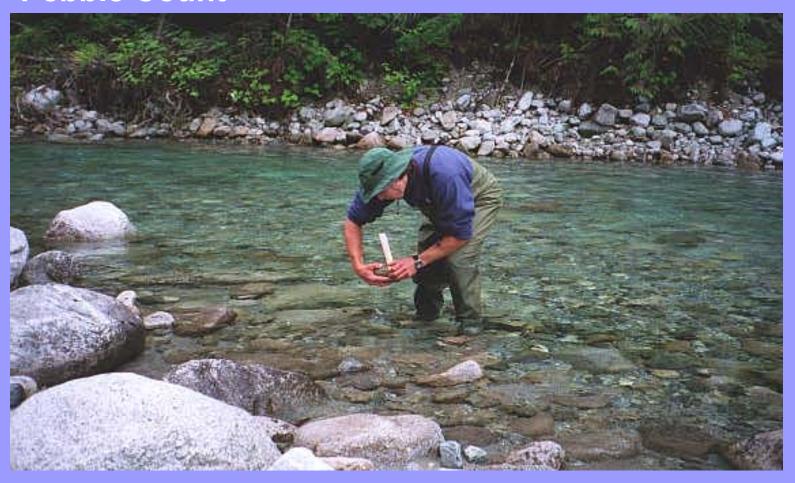


Stream Temperature





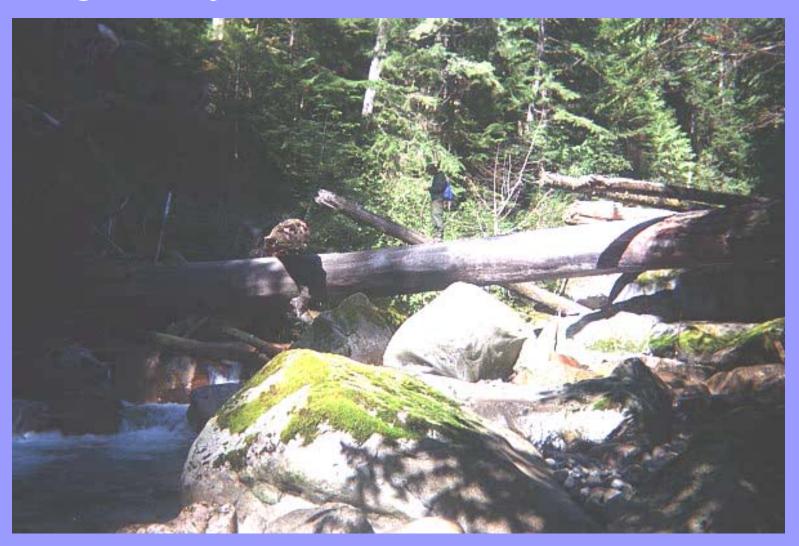
Pebble Count



Boulder count?



Large Woody Debris



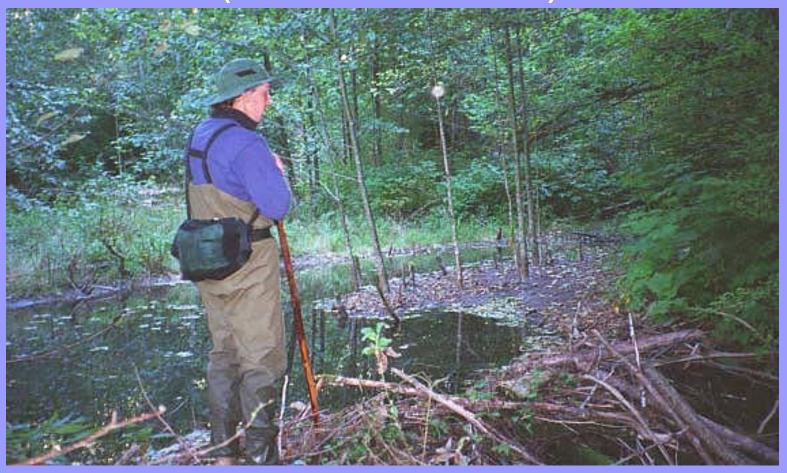
Log Jam weir



Baker River near confluence with Crystal Creek



Beaver Pond (side channel habitat)

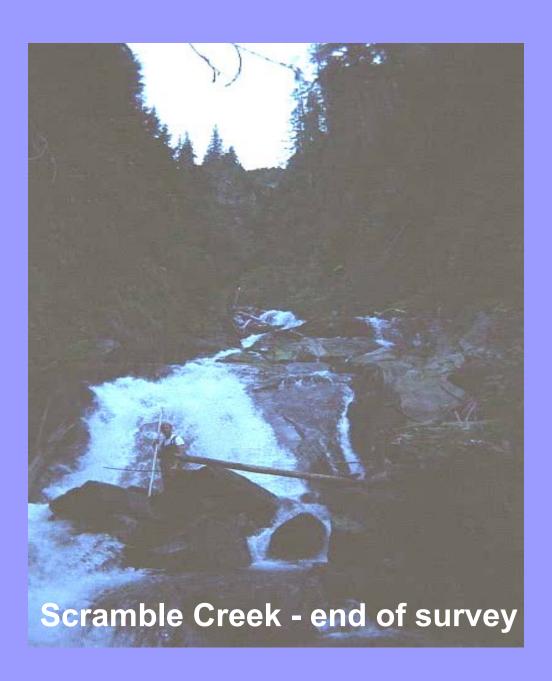


6% gradient Baker River

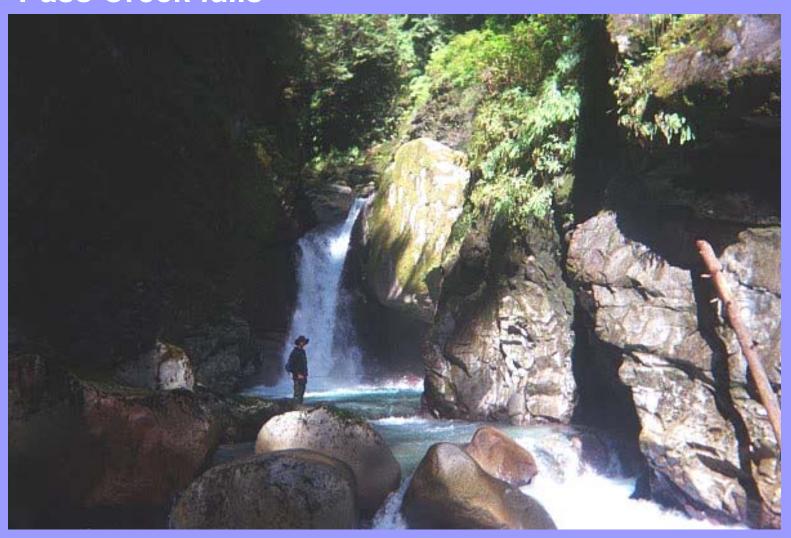


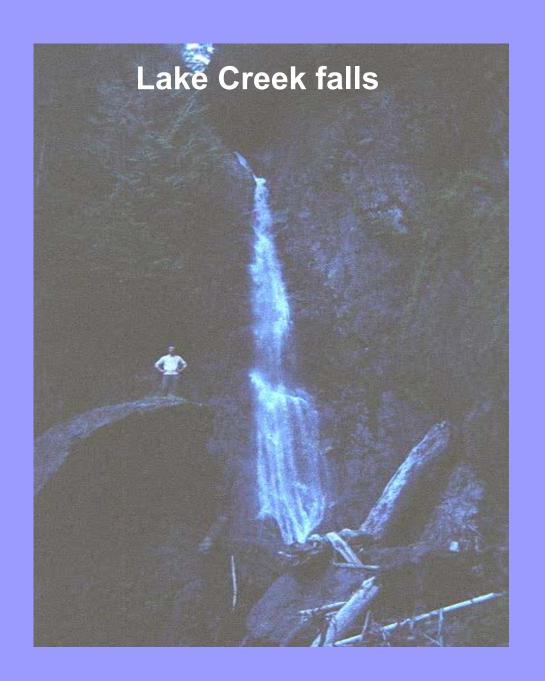
Scramble Creek (23% gradient)





Pass Creek falls



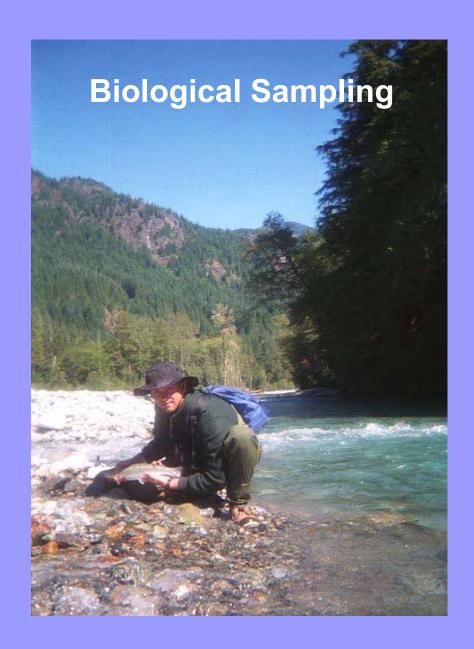


Hidden Creek barrier



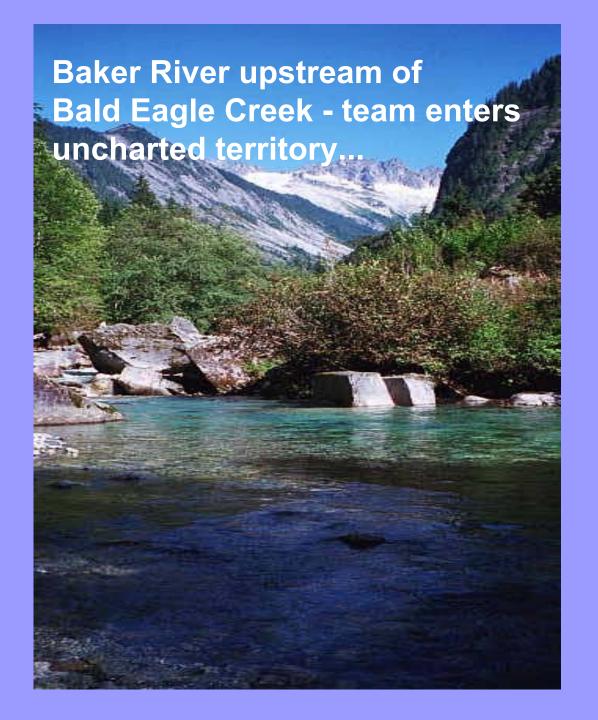
Bald Eagle Creek falls





Biological Sampling





We are not alone...



If the footprint fits?





ESA and Section 7 Consultation Overview

- ESA Overview
- Section 7 Process
- Services Response
- Questions

Endangered Species Act of 1973

Findings of Congress

"Various species of fish, wildlife, and plants have been rendered extinct as a consequence of growth untempered by adequate conservation."

"These species are of esthetic, ecological, educational, historical, recreational, and scientific value to this Nation and its people."

Purpose of ESA

"To provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved."

Endangered

A species that is in danger of extinction throughout all or a significant portion of its range.

Threatened

A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Candidate Species

• Any species under consideration by the Secretary of Interior (USFWS) or Commerce (NMFS) for listing as an endangered or a threatened species, but not yet the subject of a proposed rule.

No substantive protection under the ESA.

Critical Habitat

- The physical and biological features that are 1) essential to the conservation of the species and 2) which may require special management considerations or protection; and
- Areas outside the species' currently occupied range that are essential for the conservation of the species.



Constituent elements of critical habitat:

biological and physical attributes that are essential to the species' conservation, such as: space; food, water and nutrition; cover or shelter; reproduction; and special habitats.

ESA Overview

Listing – Recovery – Delisting

Section 4

- > listing
- >recovery planning
- > recovery implementation
- > 4 (d) rules

Section 6

> cooperative agreements with States

ESA Overview (cont.)

Section 9

>"take"--harass, harm, pursue, hunt, shoot....

Section 10

- rightharpoonup enhancement of survival permits 10(a)(1)(A)
- \triangleright incidental take permits 10(a)(1)(B)

Take

Harass: an intentional or negligent act or omission which creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

Harm: an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Take Via Habitat Degradation

- An act causing habitat degradation that actually kills listed salmon is take (harm).
- An act which adversely affects the reproductive output of listed salmon may constitute take (harm or harass).
 - e.g., reducing fecundity by decrease in habitat quality or amount, or or by restricting access to such habitat.
- Acceptable levels of take may be allowed under the authorities in sections 4, 7, and 10.

Take Authorization Options

Section 7

- take must be incidental
- · Federal agency must be involved
- applies to discretionary actions

Section 10(a)(1)(A)

- · take is related to conservation activities
- · applies to Federal and non-Federal

Section 10(a)(1)(B)

- · take must be incidental
- applies to non-Federal parties



Section 7

• Section 7(a)(1) Affirmative Conservation Mandate: Federal agencies shall use their authorities to carry out their programs for the conservation of endangered & threatened species.

• Section 7(a)(2) Duty to Avoid Jeopardy:

Federal agencies shall consult with the Services to ensure that any actions they authorize, fund or carry out do not jeopardize the continued existence of listed species or destroy or adversely modify critical habitat.

Candidate, Proposed, and Listed Species

Section 7 applies as soon as a species is proposed for listing under the ESA.

"Conferences" are conducted for proposed species and proposed critical habitat.

"Consultations" are conducted for listed species and designated critical habitat.

Informal Consultation

A process to assist federal agencies in determining if formal consultation is required.

Allows federal agencies to:

- request Service concurrence with "not likely to adversely affect" or "no effect" determinations and
- explore opportunities to meet their conservation mandate under Section 7(a)(1).

Formal Consultation

Required for federal actions that may adversely affect a listed species or designated critical habitat.

Involves the submittal of a Biological Assessment and the receipt of a Biological Opinion and Incidental Take Statement.

Beginning the Section 7 Process

Is there a federal action?

Anything funded, authorized, or carried out by a federal agency.



Biological Assessments

• Required: for all federal actions that are major construction activities. Recommended as the "analysis document" for all other federal actions.

Definition: Information prepared by the federal agency concerning listed and proposed species and critical habitat that may be present in the action area, and how they may be affected by the action.

Purpose: Documents the agency's analysis of effects and assists in determining the type of consultation required.



Evaluating Effects and Making an Effect Determination

• <u>Direct effects</u> and <u>indirect effects</u> of the proposed action and its <u>interrelated and</u> <u>interdependent actions</u> should be evaluated in relation to the <u>environmental baseline</u>. The geographic extent of effects determines the action area.

Direct and Indirect Effects Consider:

- Location (proximity to listed, proposed and candidate species)
- Timing (as it relates to critical periods)
- Duration
- Nature of effect (frequency and severity of disturbance and habitat impacts; direct mortality)
- Environmental Baseline (all pertinent habitat parameters)

Interrelated and Interdependent Effects

- Both are assessed by applying the "but for" test, which asks whether an activity and its associated impacts would occur "but for" the action under consideration.
- Are considered part of the action's direct effects.

Direct and Indirect Effects from Construction of a Hydropower Dam (including the Interrelated and Interdependent Actions)

- Building of the Dam
- Roads to the Dam to be built by another party
- Operational effects downstream
- Transmission lines to connect hydropower to grid
- Stocking plans by State Fish agency
- New agriculture from stored water
- Houses built using electricity from Dam

Effects Are Considered in Relation to the Environmental Baseline

Defined as: The total effects of all past and present federal and non-federal activities, as well as the effects of proposed federal actions that have completed section 7 consultation.

Action Area

- Defined as: the extent of the action's direct and indirect biotic, physical, and chemical effects, to the point at which those effects attenuate to background levels.
- Action areas do not have to be contiguous.
- Environmental baseline, effects analyses, and incidental take estimates are based upon the action area.

Cumulative Effects

• Are not considered "effects of the action" and do not drive the effect determination.

• However, they need to be included in the analysis that is completed for formal consultation.

Cumulative Effects under ESA

- Effects of future non-federal actions reasonably certain to occur in the action area.
- "Reasonably certain to occur" indicators may include: approvals or indications of approval by state or local govt's; obligation of capital; initiation of contracts.
- Look at NEPA Documents

Cumulative Effects under NEPA

The incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (federal or non-federal).

Effect Determinations for Listed Species or Designated Critical Habitat

No Effect

• Beneficial Effect

Not Likely to Adversely Affect

Likely to Adversely Affect

"No Effect"

• Appropriate if the proposed action will literally have no effect whatsoever.

• NOT appropriate if effects are expected to be small or unlikely to occur.

"Not Likely to Adversely Affect"

- When effects are expected to be insignificant or discountable.
- Insignificant relates to the size of the impacts and should never result in take.
 These effects should not be measurable or detectable.
- Discountable effects are extremely unlikely to occur.
- Requires Service concurrence through informal consultation.

"Beneficial Effect"

• Project must be fully beneficial, with NO adverse effects at any point in time.

• Any adverse effects, regardless of timing or significance, override long-term beneficial effects for purposes of section 7.

• Requires Service concurrence.

"Likely to Adversely Affect"

- When adverse effects are not insignificant or discountable, or there is a risk of take.
- Requires formal consultation with the Services and the submittal of an <u>initiation</u> package, to include a complete biological assessment and a cumulative effects analysis.

Initiation of Formal Consultation

- required when a federal action is "likely to adversely affect" a listed species or designated critical habitat.
- the action agency is required to provide the best scientific and commercial data available.

When best available data are not provided:

• The Service's must give the benefit of the doubt to the species and consider a reasonable worst case scenario.(H.R. Conference Report No. 697, 96th Congress, 2nd Session 12 (1979)).

The Biological Opinion

The Service's response to a request for formal consultation.

The Biological Opinion determines whether the action "is" or "is not" likely to jeopardize the continued existence of a listed species or adversely modify critical habitat.

Jeopardy

 To engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the by reducing the reproduction, numbers, or distribution of that species.

Adverse Modification of CH

 direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.

Biological Opinion

- Description of the Proposed Action
- Status of Species
- Environmental Baseline
- Biological Opinion regarding Jeopardy and Adverse Modification
- Reasonable and Prudent Alternatives, if necessary

Biological Opinion (cont.)

- Incidental Take Statement
- Reasonable & Prudent Measures and Terms & Conditions to Reduce Take
- Conservation Recommendations
- Post-Opinion
 Requirements/Reinitiation

Reasonable and Prudent Measures, and Terms and Conditions

Reasonable and prudent measures

- mandatory actions that the Services believe necessary and appropriate to minimize the impacts; i.e., amount or extent, of incidental take
- generally describe actions required to minimize take

Reasonable and Prudent Measures, and Terms and Conditions (cont.)

Terms and conditions

- specific methods to accomplish each RPM
- only minor changes to proposed action
- includes reporting and monitoring requirements
- salvage and disposition of species



Conservation Recommendations

- discretionary measures to minimize or avoid adverse effects of an action on listed species or critical habitat, or develop information
 - -can be proactive and benefit the species
 - -can be more than a minor change to the action
 - -can be beyond the scope of the action
 - -ARE NOT BINDING

Reinitiation Requirements

When:

- Amount of incidental take is exceeded;
- New information reveals "new effects";
- Action is modified such that species are affected differently than previously considered; or
- A new species is listed or new critical habitat is designated in the action area.



Confused? It's O.K.

...under our ...Federal System, the Congress is constitutionally empowered to launch programs, the scope, impacts, consequences and workability of which are largely unknown, at least to the Congress, at the time of enactment; the Federal Bureaucracy is legally permitted to execute the Congressional mandate with a high degree of befuddlement, as long as it acts no more befuddled than the Congress must reasonably have anticipated...." -U.S. District Court Judge





BAKER RIVER PROJECT RELICENSE

Aquatic Resources Working Group

October 23, 2001 9:00 a.m. – 2:30 p.m. USFS Office, 810 State Route 20 Sedro-Woolley, 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: Arnie Aspelund (PSE), Cary Feldmann (PSE), Phil Hilgert and Sue Madsen (R2 Resource Consultants), Nick Verretto (PSE), Stan Walsh (Skagit System Cooperative), Brady Green (U.S. Forest Service), Arn Thoreen (Skagit Fisheries Enhancement Group), Fred Seavey (USFWS), Gary Sprague (WDFW), Doug Bruland, (PSE), Bob Wright (WA Dept. of Ecology), Rod Sakrison (WA Dept. of Ecology), Don Schluter (Trout Unlimited, by phone), Lyn Wiltse (facilitator, PDSA Consulting)

INTRODUCTIONS:

The group welcomed visitor Ardis Bynum (U.S. Forest Service) who is a member of the Recreation and Cultural Working Groups.

Note: If unable to attend meetings, please notify Team Leader.

FUTURE DATES AND LOCATIONS:

November 20 at FS Office in Mountlake Terrace from 8:30 to 2:30. December 13 at FS Office in Mountlake Terrace from 9:00 to 2:30.

AGENDA

October 23, 2001 9:00 a.m. - 2:30 p.m. US Forest Service Office Sedro-Woolley, WA

- 1. Review Agenda and Minutes
- 2. Review Action Items
- 3. Reports from Fish Passage Technical Working Group and Baker River Committee
- 4. Update on Ramping Rates
- 5. Presentations:

A01: Habitat Survey Results (Doug Bruland) ESA (Fred Seavey)

- 6. Review of Study Plans and Requests
- 7. Additional Issues?
- 8. Set agenda for November 8 (now rescheduled for 20th) meeting (USFS Office-Mountlake Terrace)
- 9. Evaluate Meeting

NEW ACTION ITEMS

- ALL: Get additional reference data to Arnie or Phil before November 20 meeting.
- ALL: Give Nick your gaging requirements/input.
- ALL: Send references (unpublished white papers, etc.) on char/native cutthroat passing through impassable areas to Don.
- Nick: Give update on new boat purchase progress.
- Don: Provide references on information on cutthroat and char passage through cascades to Arnie
- Brady: Email Adult Trap protocol rationale text to Arnie to distribute.

REPORT ON OLD ACTION ITEMS

- All: Reviewed recently submitted Study Requests for A-25, 26, 28.
- Arnie: Had Connie Freeland contact Bill Ryan/EPA Hydro at 206-553-856 to give overview of relicense process and invite him to working group meetings. He will likely begin attending the Solution Team Meetings beginning in November this year.
- Fred: Talked with Terrestrial Group re: wetlands that are hydrologically but not directly connected to the river.
- **Stan:** Invited Bob Hayman to present to us in November an update of Lower Skagit Fall Chinook, etc. We decided to postpone this presentation until after the new year.
- **Nick:** Coordinated with DOE and Forest Service re: A-13 Draft Study Plan for review prior to next meeting.
- **Doug:** Got new hip and chest waders!
- **Phil:** Contacted Ed Connor re: radio tags for native char. Distributed email from Ed. Ed is trying to establish a working group for the middle and lower Skagit. There are radio tags available. We may want to use them for native char. We'll get an update after this meeting takes place.

- **Arnie:** Checked with Fred re: ESA presentation at October 23 meeting.
- **Arnie:** Got summary data of average daily flows over the last 10 years (inflow to Baker Lake).and for Watershed.
- **Arnie:** Got information on trap protocol. Distributed spreadsheet *Baker Adult Fish Trap Protocol* (revised 9/19/2001 Baker River Committee). And also a Draft of *Baker Hydroelectric Project Adult Trap Protocols* Baker River Committee, Proposed 6/12/2001. This text was prepared by Brady Green and explained the rationale behind the protocol.
- **Phil:** Compiled list of existing data regarding fish population characteristics.
- Phil: Sue distributed plots of raw stage: discharge data
- **Bob W:** Talked with Bob Barnes re: existing water quality data. Bob will be proposing a plan of different parameters/locations/frequencies, etc. to be examined for 401 certification.
- Phil & Don: Discussed boats.
- **Brady:** Sent Phil standards and guidelines relating to the affected section of Upper Baker River
- Nick/Bob: Provided update on PSE plans for gaging of Baker River. Still considering this. Need input from the group. Potential Wild & Scenic River Act designation may limit what we can do here. This will be handled as part of A9.
- Chuck: Sent Phil a copy of Scope of Work for Little Baker Feasibility Study.

WILD & SCENIC RIVERS

Brady reported that Congress awarded \$2 million to the USFS to buy and protect land along the Wild & Scenic River corridor. He distributed a copy of the Seattle Times, October 22, 2001 article.

REPORT FROM FISH PASSAGE TECHNICAL WORKING GROUP

They are narrowing down the downstream passage options to those that are most feasible. They postponed the October 17 session due to multiple scheduling conflicts among participants. During the November 1 meeting, they are going to brainstorm upstream passage options. They will also be looking at process and considering studies that will be helpful in narrowing options. The firm of Montgomery-Watson is developing a conceptual overview of some options such as fish ladders at both dams.

REPORT FROM BAKER RIVER COMMITTEE

This group is an ad hoc technical group that has been meeting quarterly for the last fifteen years. Participants include USFS, PSE, NMFS, USFWS, WDFW, SSC, NPS and other interested persons. These meetings are open to anyone interested in attending. The goal of the group is to address fish issues and on going project operations related to fish. They discuss a variety of systemic issues. They are not dealing directly with any relicensing issues. We will continue to share information back and forth with this group as appropriate. We'll share the minutes from each of these quarterly meeting of the Baker River Committee with this Working Group. The 2002 meetings will be January 16, at the U.S. Forest Service Bldg, Sedro-Woolley; March 20 at Mountlake Terrace; June 19 at the Baker Project; and September 18 at La Conner.

UPDATE ON RAMPING RATES

PSE has put together a ramping protocol that meets the 2000 cfs/hour voluntary gradual unit shutdown that was established in 1978. This is achieved in two steps. First, they take the unit from 3000 cfs down to 1600 cfs and hold it for an hour. Then from there they drop it to minimum flow. PSE is continuing to investigate other opportunities.

PRESENTATION ON A01: TRIBUTARY HABITAT SURVEY RESULTS

Doug Bruland gave an enjoyable PowerPoint presentation that summarized the results of the Tributary Habitat Survey. It is available on the PSE Relicensing Website. This is only the beginning of the data analysis. The field data will be analyzed to quantify the areas accessible to anadramous fish to identify basin production potential. Areas will be identified for potential enhancement as will surface areas available to specific species and habitat areas above barriers.

PRESENTATION ON ENDANGERED SPECIES ACT (ESA)

Fred Seavey gave a very informative PowerPoint presentation on the details of the law as outlined in the Endangered Species Act (ESA) established by Congress in 1973. He did a great job of illustrating the various points (and confusing terms) with Baker-specific examples. He will email the presentation to Arnie to send out to meeting participants. The presentation will also be available on the PSE Relicensing Website.

Notes/Next Stens

STUDY REQUEST SUBMITTALS/STUDY PLAN DEVELOPMENT

Title

Stuay	# 1 lue	Notes/Next Steps
A01.A	Reservoir Tributary Habitat Surveys	Follow up meeting in January
A01.B	Reservoir Tributary Biological Surveys	Since the last meeting, PSE and R2 staff
		conducted a combo walking/snorkel of the
		Baker River from Crystal Creek (RM 24.7) to
		the reservoir (RM 19) on 9/27-28, 10/4 and
		10/16, NPS staff conducted a similar survey
		downstream from Bald Eagle Creek waterfall
		(RM 1 @ Baker RM 26.9) on 10/17/01. NPS
		provided a copy of the year 2000 walk/snorkel
		survey of Baker River from Sulphide Creek
		(RM 23) to reservoir (RM 19) conducted on
		10/31/00, 11/14/00 and 11/28/00.
A01.C	Reservoir Tributary Delta Surveys	We've been hitting these when we do delta
		spawning surveys. Hasn't been a lot to see.
		Another part of this project is to map potential
		habitat along the margins. We will begin to do
		this now that the reservoir pool is dropping.
		We also also looking for redds.
A02	LB River Habitat Mapping	Doug & Sue got out on Sept. 30 to identify
		habitat areas, pebble counts, and measure
		cross-sections. Nick and Phil will be going out
		in next two weeks to assess fish usage.

Study #

A20	Large Woody Debris Management	R2 will draft a Study Request for Brady to
		review.
A21	Skagit Wild & Scenic River Values	Study Request is under review
A22	Baker Lake Trout Impacts Evaluation	Discussion will be deferred to Baker River
		Committee
A23	Baker River Wild & Scenic River	Study Request needs clarification
	Values	
A24	Hydrologic and Geomorphic Analysis	We have the algorithms prepared to compare various hydrologic metrics for regulated and unregulated flows. They are awaiting a record of daily inflows from Bob before running the analyses.
A25	Reservoir Predation	Discuss at November meeting
A26	Reservoir Production Potential	Discuss at November Meeting
A27	Middle Skagit Incubation Flows	Covered in A9.
A28	Fish Passage-Reservoir Management	Discuss at November Meeting

LIST OF MEETING HANDOUTS

- Email exchange between Ed Connor to Phil Hilgert (9/18 and 9/26) re: native char radio tagging efforts in the Middle Skagit River
- Draft of *Baker River Natural Daily Flows At Concrete, Summarized By Month For The* 1926-2000 Calendar Years Based on observed discharges corrected for changes in storage at upstream dam d(s). Unpublished work, Copyright 2001 PSE, Inc. These data have a 10-15% error rate (increases as flow magnitude decreases). Based upon both dams. Intakes in forebay at dams.
- Spreadsheet: Baker Adult Fish Trap Protocol (Rev. 9/19/01- Baker River Committee)
- Draft paper authored by Brady Green: *Baker Hydroelectric Project Adult Trap Protocols* (explains the history of the Baker River Committee and the rationale behind the fish trap protocols.
- Newly-Updated Draft of constraints section of the Skagit Chinook Restoration Plan (from Bob Hayman)
- Seattle Times October 23, 01 article: \$2 Million Awarded to Protect Skagit River
- R2 Summary: Baker Lake and Lake Shannon Fish Information Sources DRAFT: October 17, 2001
- Stage Relationships for Temporary Stage Recorders (draft sage vs. discharge charts)
- Updated gage map.
- Technical Report by Brenkman, S.J. 2001. Spawning Migration of Lacustrine-Adfluvial Bull Trout in a Natural Area. Transactions of the American Fisheries Society 130:981-987.

PARKING LOT

- State agency presentations re: mandates (agency direction)
- Create a master list of possible studies across all working groups and share with all
- Access to the Baker River Project hourly operational model
- Participate in Lower Skagit Work Group for native char

EVALUATION OF MEETING

Well-Dones

- Thank you Brady for being a wonderful host at this beautiful new location!
- Great presentations by Doug and Fred!
- Wonderful food, as usual! Thanks Arnie and Nick!
- We're doing a lot.
- Good to have everybody on same page.

Opportunities to Improve

- Took a while to get through action items
- Need better speaker phone
- Parking
- Get Don's Federal Express out a day earlier

Tentative Agenda for Next Meeting November 20, 2001 8:30 a.m. - 2:30 p.m. U. S. Forest Service Office Mountlake Terrace, WA

- 1. Review Agenda and Minutes
- 2. Review Action Items
- 3. Reports from Fish Passage Technical Working Group
- 4. Study Plans/Requests

R-A25

R-A26

R-A29

R-A20

R-A14

- 5. Review of Study Requests/Plans
- 6. Additional Issues?
- 7. Set agenda for December 13 meeting at USFS Office in Mountlake Terrace
- 8. Evaluate Meeting