Agenda Item E.1
Situation Summary
November 2006

CURRENT HABITAT ISSUES

The Habitat Committee (HC) will meet on Monday, November 13, and Tuesday, November 14, 2006, to discuss the Klamath overfishing concern report outline requested by the Pacific Fishery Management Council (Council) (Attachment 1), comments on Klamath River hydropower relicensing, national marine sanctuary issues, and other issues on the Council agenda. The HC will also meet jointly with the Scientific and Statistical Committee's Ecosystem-Based Management Subcommittee on November 14, 2006 to discuss issues related to ecosystem based management.

The HC has prepared a draft letter for the Council's consideration. Supplemental Attachment 2 is a draft letter to the Federal Energy Regulatory Commission (FERC) providing comments on their recently released draft environmental impact statement regarding Klamath River hydropower operations.

Council Action:

Consider comments and recommendations developed by the HC at its November 2006 meeting.

Reference Materials:

1. Agenda Item E.1.a, Attachment 1: Outline for Klamath overfishing concern report.
2. Agenda Item E.1.b, Supplemental HC Report.
3. Agenda Item E.1.c, Public Comment.

Agenda Order:

a. Report of the HC — Stuart Ellis
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. **Council Action:** Consider HC Recommendations

PFMC
10/25/06

HABITAT COMMITTEE REPORT ON CURRENT HABITAT ISSUES

Summary of Council tasks associated with this report:

- Provide comments on proposed Federal Energy Regulatory Commission (FERC) letter
- Provide comments on Klamath report outline
- Provide input on proposed future meeting between Habitat Committee (HC) and Scientific and Statistical Committee (SSC) Ecosystem-based Management Subcommittee

Klamath Issues

Proposed letter to FERC

The HC made some minor edits to the proposed letter to the FERC (Attachment 1). The purpose of the changes was to reflect issues settled by the Administrative Law Judge and the fact that FERC's draft environmental impact statement fails to address the removal of all four dams as an option.

Klamath Overfishing Concern outline

The HC has developed a draft outline for the Klamath overfishing concern report (Attachment 2). Some minor formatting changes and simplifications were made during the HC meeting yesterday. As required by the Salmon Fishery Management Plan, the report will be prepared for the March Council meeting.

Joint Meeting of the Habitat Committee and Ecosystem-based Management Subcommittee of the Scientific and Statistical Committee (SSC)

The HC met with the SSC's Ecosystem-based Management Subcommittee. Due to time constraints and the absence of the subcommittee chairperson, a joint statement is not possible at this time. However, the group agreed that there is mutual interest in helping the Council move forward on this issue.

The group seeks permission to meet again in joint session to:

- Explore ways to summarize the status of the ecosystem in a manner oriented to assisting Council decision making.
- Make recommendations to the Council on the utility of pursuing an umbrella Fishery Ecosystem Plan (FEP) that supports existing fishery management plans (FMPs) and meets current goals (e.g. rationale for managing essential fish habitat (EFH) in the water column) and future needs.
- Work towards a joint statement regarding Council direction with regard to ecosystem-based fishery management (EBFM).

The group also agreed that the definition of EBFM found in the Pacific States Marine Fisheries Commission panel report is a useful one:

> "Ecosystem-based Fishery Management recognizes the physical, biological, economic, and social interactions among the affected components of the ecosystem and attempts to manage fisheries to achieve a stipulated spectrum of societal goals, some of which may be in competition."

The group also reviewed the table that the HC drafted entitled "Current Council Actions Contributing to an Ecosystem Approach (and Possible Next Steps) November 14, 2006 (draft)" (Attachment 3). The table is an initial attempt to address the Council's request to summarize existing activities that contribute to EBFM and suggest ways of moving forward. The table should be considered a draft working document and does not require Council action at this time.

In response to the Council's request, the group also reviewed the summary of other Councils' actions on EBFM produced by Hal Weeks (Attachment 4).

Other Habitat Issues:

Hypoxia on the Central Oregon Coast

The low-oxygen (hypoxia) observed near the central Oregon Coast is dissipating as is expected with the shift to fall weather and oceanic patterns. Oregon Department of Fish and Wildlife collaborated with Oregon State University (OSU) oceanographers and zoologists in early September in preparing a research proposal to NOAA to model the development of seasonal hypoxic conditions and to better understand the population level effects on harvested fishery resources. A decision on this funding proposal is expected in April 2007. A coastal hypoxia research and planning meeting is scheduled for late November at OSU.

Bradwood Landing Liquified Natural Gas (LNG) Project

The Northern Star LLC company has filed a Biological Assessment (BA) with FERC for their Bradwood Landing LNG terminal project in the lower Columbia River. At this time, FERC has not forwarded the BA to the U.S. Fish and Wildlife Service and National Marine Fisheries Service, so it is not yet an appropriate time for the Council to provide comments on the EFH consultation which will be done with the BA. The EFH consultation will include a consultation on salmon habitat as well as a consultation on groundfish habitat for starry flounder.

In general the BA does indicate that they expect some adverse impacts to listed salmon and steelhead populations. These impacts are primarily expected to occur during construction of the terminal and pipeline. The proponents expect much lower impacts associated with the operation of the facility. The proponents are proposing mitigation activities through various habitat restoration activities, land acquisition, as well as a "Salmon Enhancement Initiative" which will provide funding to various salmon, sturgeon, or even lamprey restoration activities in the Columbia Basin.

The project proponents have expressed interest in giving a presentation on the project to the HC at the April Council meeting. A meeting such as this would probably be helpful to the Council should they want to comment on the EFH consultation for this project.

Letter on Recreational Fishing and EFH

At the September Council Meeting, the HC suggested writing a letter clarifying the effects of EFH closures on recreational fisheries. After further discussion, the HC realizes that this is a complex legal question that will require further input and discussion.

U.S. Army Corps of Engineers Nationwide Permits

In a Federal Register notice published in September of this year, the U.S. Army Corps of Engineers (Corps) solicited comments on the reissuance of existing nationwide permits (NWPs) with some modifications, and proposed to issue six new NWPs. A nationwide permit is intended to streamline the regulatory process by authorizing actions that have no more than minimal adverse impacts, either individually or cumulatively. The Corps intends to conduct EFH consultations between regional Corps districts and National Marine Fisheries Service regional offices. The HC believes that some of the proposed activities would adversely affect EFH. If the EFH consultation timeline matches the Council meeting schedule, the HC may recommend the Council provide comments and recommendations.

PFMC
11/15/06

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org

Habitat Report Attachment 1

November 15, 2006

The Honorable Magalie Salas
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Re: Pacific Fishery Management Council's essential fish habitat recommendations and comments on the Klamath Hydropower Project (FERC No. P-2082) Draft Environmental Impact Statement.

Dear Secretary Salas:

Enclosed for filing please find the original and eight (8) copies of a letter providing the Pacific Fishery Management Council's comments and essential fish habitat recommendations related to the Klamath Hydropower Project (FERC No. P-2082).

Sincerely,

DRAFT

Donald. O. McIsaac
Executive Director
(503)820-2280

Enclosures

DRAFT

Note: Additions and ~~deletions~~ made at Nov. 13 HC meeting are noted.

November 15, 2006

The Honorable Magalie Salas
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

RE: Docket Number P-2082 (Pacific Fishery Management Council's Comments on the Draft Environmental Impact Statement, and Essential Fish Habitat [EFH] Recommendations for the Klamath Hydropower Project).

Dear Secretary Salas:

The Pacific Fishery Management Council (Council) submits these comments regarding the Draft Environmental Impact Statement (DEIS) for Hydropower License for the Klamath Hydroelectric Project (P-2082).

First, we reiterate our comments sent in a letter dated April 24, 2006 (enclosed). In that letter, the Council submitted its recommendation that the Federal Energy Regulatory Commission (FERC) order the removal of the lowermost four dams on the Klamath River (Iron Gate, Copco 1 and 2, and JC Boyle Dams). The current draft EIS does not include this option, and, therefore, is inadequate in addressing the full range of reasonable alternatives as required by 40 CFR 1502.14.

FERC replied to the Council's letter on May 12, 2006, noting that "We will consider your April 24, 2006, EFH comments under section 10(a) of the Federal Power Act as we prepare our Draft Environmental Impact Statement (DEIS)… We will look forward to your comments and any EFH recommendations after you've reviewed our DEIS and EFH Assessment."

We note with disappointment that the DEIS contains no alternative for the removal of all four lower Klamath dams. Instead, FERC's proposed final action is unclear. Although FERC is mandated to follow prescriptions submitted to it by the Secretaries of Commerce and Interior under Section 18 of the Federal Power Act, it has failed to adopt these prescriptions for fishways in its "Staff Alternative." Similarly, FERC has failed to include many of the mandatory 4(e) conditions in its "Staff Alternative." These mandatory conditions were based upon facts that were affirmed by the Administrative Law Judge in September of 2006. FERC needs to clearly lay out a preferred alternative that includes these mandatory terms and conditions.

The Council requests that FERC augment its analysis of the removal of two dams (Iron Gate and Copco 1) with a full analysis of the removal of the lowermost four dams. In addition, we strongly urge FERC to modify its "Staff Alternative" to reflect the mandatory conditions placed upon the new license by the Departments of Interior and Commerce and upheld by the courts.

The Council believes that FERC's ~~essential fish habitat (EFH)~~ analysis is ~~completely~~ inadequate. On page 5-88, FERC addresses essential fish habitat (EFH) issues as they relate to the Klamath River Hydroelectric Project. This ~~"~~analysis~~"~~ reiterates the measures that PacifiCorp and FERC propose in the DEIS, and then, comparing with today's extremely impaired baseline, states that the proposed action will "not adversely affect EFH." We believe that this analysis misses the point – that the current facilities and operations have caused the degradation of EFH below the Klamath River Hydroelectric Project, and that measures should be taken to address those damages.

The Council further notes that of the five additional measures proposed by FERC (in addition to PacifiCorp's proposed measures), four are requirements for PacifiCorp to make maps or plans with no obligation to implement any actual measures to improve EFH downstream. This is unacceptable. Measures to protect or enhance EFH must encompass real actions, not simply more plans and studies.

As the near-shutdown of ocean fisheries demonstrated this year, Klamath stock abundance affects economies up and down the coast. Thus, the economic consequences that result from the degradation of EFH located below the Klamath Hydroelectric Project can be quite large. Thus, it is important to address effects to EFH completely, and to fully explore ways to mitigate for such impacts.

In summary, the Council requests that FERC add a *four* dam removal scenario to its analysis, and further, based upon the recommendations of numerous individuals, agencies, and other organizations, select the removal option as the preferred alternative. Volitional, or other fish passage scenarios, do nothing to address serious water quality problems that FERC's own analyses show impact anadromous fish. We anticipate a new draft EIS that includes the requested analyses will soon be available for further review. Thank you for the opportunity to comment.

Sincerely,

DRAFT

Pacific Fishery Management Council

Enc: April 24, 2006 letter from PFMC to FERC

Factors Affecting the Low Abundance of Klamath Naturally-Spawning Fall Chinook salmon in 2004 and 2005

1. Introduction
    - 1.1. Status of stock
        - 1.1.1. Historical numbers
        - 1.1.2. 2004-2005 status
            - 1.1.2.1. Years directly affecting 2004/2005 stocks (2000-2003)
    - 1.2. Salmon FMP charge
    - 1.3. Process of this document
2. Fishing
    - 2.1. Harvest management objectives
        - 2.1.1. Stock recruit analysis
        - 2.1.2. 66% spawner reduction rate
        - 2.1.3. 35,000 minimum natural spawning escapement floor
        - 2.1.4. Amendment 15
    - 2.2. Possible effects of Fishing
        - 2.2.1. Overfishing in parent years
        - 2.2.2. Overescapement in parent years
        - 2.2.3. Overfishing in return years
    - 2.3. Harvest rate
        - 2.3.1. In parent years
        - 2.3.2. In years leading to 2004 and 2005
        - 2.3.3. In 2004 and 2005
    - 2.4. Technical infrastructure
        - 2.4.1. F_1 generation – hatchery fish counted as natural spawners
            - 2.4.1.1. Spatial trends of hatchery/natural composition of spawners
        - 2.4.2. Other issues

3. Habitat
    - 3.1. Historical perspective
        - 3.1.1. Early impacts
        - 3.1.2. Decline of fish and fisheries
    - 3.2. Dams and their effects
        - 3.2.1. General dam operations
        - 3.2.2. Mainstem Dams
        - 3.2.3. Dwinell Dam
        - 3.2.4. Trinity River Diversion Project
        - 3.2.5. Lack of fish passage
            - 3.2.5.1. Unreachable habitat
        - 3.2.6. Impacts of impoundment/alteration of the natural hydrologic regime
            - 3.2.6.1. Changes to water temperature
            - 3.2.6.2. Changes to dissolved oxygen
            - 3.2.6.3. Changes to nutrient loads

3.2.6.4. Gravel depletion
3.2.6.5. Loss of thermal refugia
3.2.6.5.1. Loss of ecosystem function

3.3. Water Management
3.3.1. Low flows and drought conditions
3.3.1.1. Recent droughts
3.3.1.2. Crisis water management
3.3.1.3. Relationship between flows and temperatures
3.3.1.4. Low flows as barriers to upstream migration
3.3.1.5. Water temperatures and dissolved oxygen
3.3.1.6. Restricted fish movement
3.3.1.7. Decreased water quality
3.3.2. Federal Klamath Irrigation Project
3.3.2.1. BO for Klamath operations; long-term nature of impacts
3.3.3. Private Off-Project Upper Basin water diversions
3.3.4. Shasta River water use
3.3.5. Scott River water use
3.3.6. Trinity River Water diversion
3.3.7. Miscellaneous water diversions

3.4. Fish Disease
3.4.1. Adult disease issues
3.4.1.1. 2002 adult fish kill
3.4.1.2. Other years
3.4.1.2.1. Pathogens
3.4.1.2.2. Causative environmental factors
3.4.2. Juvenile disease issues
3.4.2.1. Overview of problem
3.4.2.2. Pathogens
3.4.2.3. Causative environmental factors

3.5. Other inriver habitat impacts
3.5.1. Water withdrawals (see dams, etc.)
3.5.2. Timber harvest practices
3.5.3. Road building
3.5.4. Mining
3.5.5. Grazing
3.5.6. Channel alteration

3.6. Ocean conditions

4. Hatcheries
4.1. Mitigation purpose
4.2. Juvenile interactions
4.2.1. Magnitude, size and timing of hatchery releases with regard to competition with naturally produced juveniles
4.3. Adult interactions
4.3.1. Contributions to natural spawners in 2004 and 2005 (less than anticipated, as a “cause” of shortfall?)

Current Council Actions Contributing to an Ecosystem Approach
(and Possible Next Steps)
November 14, 2006 (DRAFT)

Topics	Current Council Actions	Potential Steps and/or Tools to Improve Fisheries Management/Move Towards an Ecosystem-Based Approach
Formalize Council intentions toward EBFM	• Joint HC/SSC EBMSC meeting • Questions regarding fishing regulations in NMS (CINMS)	• Establish ongoing committee to continue explore implementing EBFM
Establish EFH	• Groundfish EFH mapping & EIS • comprehensive assembly of groundfish life history info • Study fishing gear types and their environmental effects • Habitat suitability index – species assemblages	
Spatial management (Place-based management) / Habitat protection measures	• Bottom contact gear closures in areas of biogenic habitat • Gear restrictions; beam trawl, dredge gear • SSC Marine Reserves White paper	
Protect prey	• Krill ban • Low CPS harvest rates in recognition of roles as prey for other managed species	• Expand list of protected forage species
Weak stock protection measures	• Cowcod and RCA closures (effect benefits ecosystem) • Bycatch Reduction measures	
Coordination with place-based processes / programs	• Council consultations on nonfishing impacts in EFH (including comments to FERC and Klamath report) • Coordination between NMS and Council	• Foster coordination with state (and other federal) processes • Expand state MPAs into federal waters where appropriate

Topics	Current Council Actions	Potential Steps and/or Tools to Improve Fisheries Management/Move Towards an Ecosystem-Based Approach
Acknowledge climate, oceanic, terrestrial, life history factors specifically in management (tools; models)	• CPS FMP Temp elements • OPI coho forecast incorporates upwelling • Sablefish model incorporates ecosystem components (predation; forage; temperature)	• Ask NOAA's help in synthesizing available information relevant to California Current ecosystem and useful for management • Consider incorporating environmental or climatic/oceanographic factors into salmon forecasts • Expand use of freshwater, estuarine, juvenile survivals, pelagic age structures into models.
Ecosystem monitoring	• Research and data needs document describes data needed	• Track metrics: bird, mammal, and baitfish populations; socioeconomic trends; other ecosystem metrics/indicators in an Ecosystem SAFE document • More effective use / distribution to Research and Data Needs document to NMS and Academic communities • Partner with NMS to synthesize current monitoring information (incorporate ecosystem considerations chapter in rebuilding plans and Our Living Oceans document)
Stock assessments	•	Questions used in NPFMC to enhance SAFE document: • What are the ecosystem impacts on the stock you're assessing? (Oceanographic conditions, status of forage and predators). • What are the ecosystem effects of the fishery for the stock that you're assessing? (Impacts of mobile-tending bottom gear on habitat features, removal of prey and predator (impacts to food web), etc.)

Habitat Report Attachment 4

Ecosystem-based Fishery Management

Overview of Actions by Regional Fishery Management Councils

North Pacific Fishery Management Council (http://www.fakr.noaa.gov/npfmc/)

The NPFMC has a longer track record of involvement with ecosystem issues and questions than other Councils. (http://www.fakr.noaa.gov/npfmc/current_issues/ecosystem/Ecosystem.htm) The annual SAFE (stock assessment and fishery evaluation) document has had an 'ecosystem considerations' chapter since 1995. This is primarily the product of the ecosystems task group at the Alaska Fishery Science Center (see http://access.afsc.noaa.gov/reem/ecoweb/index.cfm). The ecosystem considerations chapter of the SAFE has grown in size and sophistication since its initial version, and most recently (2005) was 300+ pages in length.

The Council formed an ecosystem committee in the late 1990s, largely at the initiative of Council member David Fluharty. The committee was active for a while, and then was suspended. In 2005, the ecosystem committee was reconstituted.

Council management includes substantial closed areas for habitat protection, bycatch minimization, gear conflict reduction, and Stellar Sea Lion & walrus protection. Some of these areas are closed to bottom trawl, while the Stellar Sea Lion & walrus exclusion areas are closed to all fishing vessels.

The NPFMC observer program was begun in the early 1990s with the principal purpose being to measure total biological removals. This is an industry funded program, and observer coverage is tiered to vessel size (100% on vessels > 125', 30% on vessels > 60' and <125', and 0% on vessels <60'). The premise was that observer's are a fixed cost independent of vessel size, while larger vessels harvest larger volumes of fish and are more able (financially and physically) to host an observer.

Directed harvest of forage fishes (with the notable exception of herring that is important commercially and for subsistence harvest) has been precluded, dating from 1998 (I think).

South Atlantic Fishery Management Council (http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx)

This Council has also been active and involved in ecosystem-based management. The website has a multipart ecosystem management section that addresses habitat protection, food web, fishery removals, ecosystem health and research/monitoring. Related elements include habitat protection and management plans for some of the Council's coral

Hal Weeks
prepared 16 June 2006
updated 1 November 2006

resources. The Council also has a Sargassum FMP to protect Sargassum from large-scale commercial harvest because of its important as habitat for pelagic species.

The Council has a Habitat Plan (dated October 1998; http://www.safmc.net/Default.aspx?tabid=80) that is its EFH designation and description document for all of its management plans. Out of this, there is an action plan (dated December 2004) to develop a fishery ecosystem plan. http://www.safmc.net/Portals/0/FEP%2012_04.pdf

The Council maintains committees addressing ecosystem-based management committee, marine protected areas and habitat and environmental protection.

Western Pacific Fishery Management Council (http://www.wpcouncil.org/)

Established a working group in 2002 in response to EO 13158 of May 2000. A Marine Protected Area policy document was drafted that is short, not very detailed, and seems to be more a statement of intent.

Strategic Plan for the Conservation & Management of Marine Resources in the Pacific Islands Region (March 2004)

Held a workshop to explore ecosystem-based management in April 2005, and has subsequently prepared several Draft Ecosystem Fishery Plans:

American Samoa Archipelago
Hawaiin Archipelago
Mariana
Pacific Pelagic Fisheries
Pacific Remote Island Areas
– all dated Dec 1, 2005

New England Fishery Management Council (http://www.nefmc.org./ecosystems/index.html)

Has formed a Habitat/MPA/Ecosystems Oversight Committee and has conducted a series of workshops describing the pilot project. A suite of presentations pertaining to the Ecosystems Pilot Project (from workshops, SSC meetings and Council meetings) are available through the website.

I'm not able to discern direction from the material available.

The Council is in the process of designating Essential Fish Habitat; the agenda for the NEFMC June 13 – 15, 2006 meeting included an item to review and approve a range of

EFH designation alternatives and prey-species sections. The prey species material on the website is a review of what is know of prey for each life stage of each managed species.

The committee has announced a meeting for Tuesday, 14 November 2006 to review HAPC proposals for incorporation into a draft EIS for the Council's omnibus EFH amendment.

Mid-Atlantic Fishery Management Council (http://www.mafmc.org/mid-atlantic/mafmc.htm)

The Council has an Ecosystem Committee, but I can find no information on any activities or products from their efforts.

Gulf of Mexico Fishery Management Council (http://www.gulfcouncil.org/)

9 workshops on Ecosystem-based Management conducted in August and September 2005
Summary document at:
http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/GMFMC%20Ecosystem%20Fisheries%20Management%20Report.pdf

and presentation at:
http://www.gulfcouncil.org/Old/Ecosystem%20Workshops%20Overview_files/frame.htm

Has formed an Ecosystem Scientific and Statistical Committee – constituted of economists, biologists, sociologists and natural resource attorneys that first met
1st meeting June 9 – 10, 2005
http://www.gulfcouncil.org/Beta/GMFMCWeb/prrel/pr2005-07.htm
and convened via conference call March 11, 2006
http://www.gulfcouncil.org/Old/prrel/pr%202006-07.pdf

Congressional allocation of $2 million to 4 councils (Gulf of Mexico, South Atlantic, Mid-Atlantic and New England) for ecosystem pilot projects (http://www.gulfcouncil.org/Old/Ecosystem%20Workshops%20Overview_files/frame.htm#slide0020.htm) – slide 4 – this was for FY 04 and so likely dates from 2003(?)

Caribbean Fishery Management Council (http://www.caribbeanfmc.com/)

could find no references to ecosystem-based management
Council does maintain a Habitat Advisory Panel

Proposed Letter to the Federal Energy Regulatory Commission (FERC) in response to their Draft Environmental Impact Statement (DEIS) on Klamath Hydropower Operations

Developed by the Habitat Committee

Attachments:

1. Summary of alternatives from the Klamath Hydropower Project DEIS developed by FERC
2. Cover letter to FERC
3. Draft letter to FERC reiterating the Council's April 24, 2006 letter calling for the removal of the four lower Klamath dams, and commenting briefly on the DEIS
4. Executive summary of FERC DEIS

Summary of Alternatives from the
Klamath Hydropower Project Draft Environmental Impact Statement
(Federal Energy Regulatory Commission, or FERC)

1. **Status Quo**
   - Eight dams operating as they do in the Klamath River (one in a tributary to the Klamath).

2. **PacifiCorp's Proposed alternative**
   - Remove Keno Dam (the dam doesn't produce electricity and is primarily used for regulating water to power plants downstream and allowing agricultural diversions)
   - Remove the East Side and West Side power plant (small diversions that produce power near Upper Klamath Lake – in light of their minimal power production, the cost of installing screens to protect endangered suckers would be prohibitive).
   - Retain four mainstem dams (Iron Gate, Copco I and II, and J.C. Boyle) and a tributary power plant (Fall Creek).
   - This alternative includes many mitigation/enhancement measures such as operating Iron Gate Hatchery, oxygenating Iron Gate Reservoir, etc. (See page xxviii of executive summary)

3. **FERC's staff alternative**
   - Similar to PacifiCorp's proposed alternative with additions, including those listed below.
   - Note that the staff alternative does not include the Department of Interior and National Marine Fisheries Service's **mandatory** terms and conditions regarding fishways and conditions on Federal property (such as instream flow and ramp rates). The basis for these terms and conditions was strongly upheld in the recent Administrative Law Judge hearing (the DEIS was released two days prior to the Judge's ruling).
   - Staff alternative additions include
     - Implementation of turbine venting as a dissolved oxygen enhancement measure
     - Implementation of an anadromous fish restoration plan, including installing fishways needed to restore passage to a project reach to be selected for initial restoration efforts. Emphasis is on studying fish reintroduction with no commitment to full-scale reintroduction.
     - Paying for all of Iron Gate Hatchery operations and marking 100% of production
     - Evaluating the potential for cool water releases from Iron Gate Dam
     - See page xxix of executive summary for more details

4. **Staff alternative with mandatory conditions included**
   - This would include the installation of fishways (upstream and downstream) at all mainstem dams, as well as the following:
     - Substantially increased flow in the J.C. Boyle bypass reach. (Status Quo is approximately 90 cfs, Staff Alternative is 200 cfs., and Staff Alternative with mandatory conditions is 470 cfs.)
     - More restrictive ramping rates. Peaking would be limited to once per week rather than daily.
     - Fishways would be installed at all facilities.
     - Implementation of a gravel augmentation plan.

V. **Removal of Iron Gate and Copco I dams alternative.**
   - This alternative includes removal of two of four mainstem dams.

Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org

November 9, 2006

The Honorable Magalie Salas
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Re: Pacific Fishery Management Council's essential fish habitat recommendations and comments on the Klamath Hydropower Project (FERC No. P-2082) Draft Environmental Impact Statement.

Dear Secretary Salas:

Enclosed for filing please find the original and eight (8) copies of a letter providing the Pacific Fishery Management Council's comments and essential fish habitat recommendations related to the Klamath Hydropower Project (FERC No. P-2082).

Sincerely,

DRAFT

Donald. O. McIsaac
Executive Director
(503)820-2280

Enclosures

DRAFT

November 9, 2006

The Honorable Magalie Salas
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

RE: Docket Number P-2082 (Pacific Fishery Management Council's Comments on the Draft Environmental Impact Statement, and Essential Fish Habitat [EFH] Recommendations for the Klamath Hydropower Project).

Dear Secretary Salas:

The Pacific Fishery Management Council (Council) submits these comments regarding the Draft Environmental Impact Statement (DEIS) for Hydropower License for the Klamath Hydroelectric Project (P-2082).

In a letter dated April 24, 2006, the Council submitted its recommendation that the Federal Energy Regulatory Commission (FERC) order the removal of the lowermost four dams on the Klamath River (Iron Gate, Copco 1 and 2, and JC Boyle Dams). FERC replied on May 12, 2006, noting that "We will consider your April 24, 2006, EFH comments under section 10(a) of the Federal Power Act as we prepare our Draft Environmental Impact Statement (DEIS)... We will look forward to your comments and any EFH recommendations after you've reviewed our DEIS and EFH Assessment."

We note with disappointment that the DEIS contains no alternative for the removal of all four lower Klamath dams. Instead, FERC's proposed final action is unclear. Although FERC is mandated to follow prescriptions submitted to it by the Secretaries of Commerce and Interior under Section 18 of the Federal Power Act, it has failed to adopt these prescriptions for fishways in its "Staff Alternative." Similarly, FERC has failed to include many of the mandatory 4(e) conditions in its "Staff Alternative." FERC needs to clearly lay out a preferred alternative that includes these mandatory terms and conditions.

The Council requests that FERC augment its analysis of the removal of two dams (Iron Gate and Copco 1) with a full analysis of the removal of the lowermost four dams. In addition, we strongly urge FERC to modify its "Staff Alternative" to reflect the mandatory conditions placed upon the new license by the Departments of Interior and Commerce.

The Council believes that FERC's essential fish habitat (EFH) analysis is completely inadequate. On page 5-88, FERC addresses EFH issues as they relate to the Klamath River Hydroelectric Project. This "analysis" reiterates the measures that PacifiCorp and FERC propose in the DEIS, and then, comparing with today's extremely impaired baseline, states that the proposed action

will "not adversely affect EFH." We believe that this analysis misses the point – that the current facilities and operations have caused the degradation of EFH below the Klamath River Hydroelectric Project, and that measures should be taken to address those damages.

The Council further notes that of the five additional measures proposed by FERC (in addition to PacifiCorp's proposed measures), four are requirements for PacifiCorp to make maps or plans with no obligation to implement any actual measures to improve EFH downstream. This is unacceptable. Measures to protect or enhance EFH must encompass real actions, not simply more plans and studies.

As the near-shutdown of ocean fisheries demonstrated this year, Klamath stock abundance affects economies up and down the coast. Thus, the economic consequences that result from the degradation of EFH located below the Klamath Hydroelectric Project can be quite large. Thus, it is important to address effects to EFH completely, and to fully explore ways to mitigate for such impacts.

In summary, the Council requests that FERC add a four dam removal scenario to its analysis, and further, based upon the recommendations of numerous individuals, agencies, and other organizations, select the removal option as the preferred alternative. Volitional, or other fish passage scenarios, do nothing to address serious water quality problems that FERC's own analyses show impact anadromous fish.

Sincerely,

DRAFT

Pacific Fishery Management Council

COVER SHEET

FEDERAL ENERGY REGULATORY COMMISSION

DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE KLAMATH HYDROELECTRIC PROJECT
Docket No. P-2082-027

Executive Summary
Pages xxvii to xxxviii
DEIS

SUMMARY

This draft environmental impact statement (EIS) for relicensing the Klamath Hydroelectric Project has been prepared by the staff of the Federal Energy Regulatory Commission (Commission or FERC) to fulfill the requirements of the National Environmental Policy Act (NEPA); the Commission's implementing regulations under Title 18, Code of Federal Regulations (CFR), Part 380; and the Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500-1508). The purpose of this document is to inform the Commission, the public, and the various federal and state agencies, tribes, and non-governmental organizations about the potential adverse and beneficial environmental effects of the proposed project and reasonable alternatives.

The Commission must decide whether to relicense the Klamath Hydroelectric Project and, if so, what conditions to place on any license issued. In deciding whether to authorize the continued operation of the hydroelectric project, the Commission must determine that the project will be best adapted to a comprehensive plan for improving or developing a waterway. In addition to the power and developmental purposes for which licenses are issued (e.g., flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of energy conservation; the protection and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection and enhancement of recreational opportunities; and the preservation of other aspects of environmental quality.

The principal issues that we address in the draft EIS include the influence of project operations on water quality, including downstream of Iron Gate dam; approaches to facilitate the restoration of native anadromous fish within and upstream of the project; the influence of peaking operations at J.C. Boyle development on downstream biota and whitewater boating opportunities; the effect of project operations on archaeological and historic sites and resources of concern to various tribes; the effects of decommissioning East Side and West Side developments and removing Keno development from the project; and decommissioning other project developments.

PacifiCorp's Proposal

On February 25, 2004, PacifiCorp filed an application with the Commission for a new license for the Klamath Hydroelectric Project, located principally on the Klamath River in Klamath County, Oregon and Siskiyou County, California, between Klamath Falls, Oregon, and Yreka, California. The existing project occupies 219 acres of lands of the United States, which are administered by the U.S. Bureau of Land Management or the U.S. Bureau of Reclamation. The current license expired on March 1, 2006, and the project is operating under an annual license.

The existing Klamath Hydroelectric Project consists of eight developments, seven of which are located on the Klamath River. One of the seven developments, Keno, serves as a regulating facility; it has no generation capabilities and PacifiCorp states that it no longer serves project purposes and should be deleted from the project. PacifiCorp also proposes to decommission East Side and West Side developments because the cost of installing screens that would be protective of federally listed suckers that reside in Upper Klamath Lake would be prohibitive. The remaining project developments on the mainstem of the Klamath River include J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate. The Iron Gate Fish Hatchery produces anadromous fish to compensate for lost spawning and rearing habitat between Iron Gate and Copco No. 2 dams. The eighth project development, Fall Creek, is on a Klamath River tributary that flows into Iron Gate reservoir. The installed capacity of the entire project is 161 megawatts (MW) and, on average, the project annually generates 716,820 megawatt-hours (MWh) of electricity.

PacifiCorp proposes to operate the five remaining developments in a manner similar to past operations with a set of 41 environmental measures (described in detail in section 2.2.3), the purposes of which include the following:

- Enhancement of the quality of project-influenced waters by installing a hypolimnetic oxygenation system at Iron Gate reservoir and evaluating other methods to increase dissolved oxygenation, decrease temperature, and decrease nutrient loading and associated problems.
- Enhancement of aquatic habitat in the J.C. Boyle bypassed and peaking reaches by increasing the minimum flows and controlling ramping rates.
- Elimination of the source of major slope failures downgradient of the J.C. Boyle emergency overflow spillway by installation of bypass valves at the powerhouse.
- Facilitation of fish passage at J.C. Boyle dam by installation of a surface collection system upstream of the dam and making improvements to the existing fish ladder.
- Enhancement of spawning habitat in the J.C. Boyle bypassed reach and downstream of Iron Gate dam by gravel placement.
- Enhancement of aquatic habitat downstream of the Fall Creek diversion by increasing the minimum flow to 5 cubic feet per second (cfs).
- Protection of habitat downstream of the Spring Creek diversion dam by not diverting flow during July and August and releasing a minimum flow of 1 cfs for the remainder of the year.
- Facilitation of fish passage at the Fall and Spring Creek diversion dams by installing fish screens and ladders at both sites.
- Enhancement of Iron Gate Hatchery stock management by purchasing and operating a facility capable of marking 25 percent of all Chinook salmon released.
- Management of vegetation resources by implementation of a vegetation resource management plan.
- Management of wildlife resources by implementation of a vegetation resource management plan.
- Enhancement of recreational opportunities by improving existing and construction of additional recreation sites and facilities and implementation of a recreation resources management plan.
- Enhancement of the appearance of project facilities by reducing their visibility and contrast through vegetative screening at recreation sites and at J.C. Boyle and Iron Gate developments via implementation of a visual resources management plan.
- Coordination of the management of project roads via implementation of a Project Roadway Management Plan.
- Protection of archaeological and historic resources via implementation of a Historic Properties Management Plan.

Staff Alternative

After evaluating PacifiCorp's proposal, along with the terms and conditions, prescriptions, and recommendations from resource agencies, tribes, and other interested parties, we compiled a set of environmental measures to address the resource issues raised in the proceeding. We call this the "Staff Alternative" (described in detail in section 2.3.2). The Staff Alternative incorporates most of PacifiCorp's proposed environmental measures, but in some instances, with modifications. Key modifications include:

- Implementation of turbine venting as an initial dissolved oxygen enhancement measure, rather than hypolimnetic oxygenation, and further evaluation of other measures to enhance water quality.
- Implementation of an anadromous fish restoration plan, including the installation of fishways needed to restore passage to a project reach to be selected for initial restoration efforts, rather than the proposed surface collector at J.C. Boyle.
- Implementation of an adaptive spawning gravel augmentation program in the J.C. Boyle bypassed reach and downstream of Iron Gate dam based on habitat mapping.
- Increasing the minimum flow in the Copco No. 2 bypassed reach to 70 cfs.
- Increased funding responsibilities for Iron Gate Hatchery operation and maintenance, tagging operations, and full funding of Fall Creek rearing facility operations.
- Addition of operation and maintenance responsibilities for Topsy Campground and Day Use area at J.C. Boyle development.
- Inclusion of Fall Creek and Copco No. 2 powerhouses and Copco No. 2 substation in the visual resources management plan.
- Expansion of the geographic scope of PacifiCorp's proposed area of potential effects pertaining to the protection of cultural resources.

The Staff Alternative includes 31 environmental measures additional to those proposed by PacifiCorp.

Staff Alternative with Mandatory Conditions

Section 18 of the Federal Power Act, 16 U.S.C §811, states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of the U.S. Department of Commerce (Commerce) and U.S. Department of Interior (Interior) may prescribe. In March 29, 2006, filings with the Commission, Commerce and Interior submitted joint preliminary fishway prescriptions for anadromous and resident fish consisting of 7 general prescriptions and 31 development-specific prescriptions, summarized in section 2.3.1.2. PacifiCorp filed alternative fishway prescriptions by letter dated April 28, 2006, in accordance with section 241 of the Energy Policy Act of 2005, that take an adaptive approach for restoring anadromous fish to historically accessible habitat.

Section 4(e) of the Federal Power Act gives the Secretary of Interior authority to impose conditions on a license issued by the Commission for hydropower projects located on "reservations" under the Secretary's supervision (16 U.S.C §§796[2], 797[e]). In a March 29, 2006, filing with the Commission, Interior submitted nine preliminary section 4(e) conditions (seven with multiple components) on behalf of the Bureau of Land Management and 7 preliminary section 4(e) conditions (one with multiple components) on behalf of Reclamation (see section 2.3.13). PacifiCorp filed alternative section 4(e) conditions to most of the measures specified by Interior by letter dated April 28, 2006, in accordance with section 241 of the Energy Policy Act of 2005. The alternative conditions, in general, either eliminated the 4(e) condition or reduced the scope of the measure described in the 4(e) condition.

When finalized, the fishway prescriptions and 4(e) conditions may need to be included in a new license for this project. Incorporation of these mandatory conditions into a new license would cause us to modify or eliminate some of the environmental measures that we include in the Staff Alternative. Because the Staff Alternative does not include East Side, West Side, and Keno developments, we do not include any mandatory conditions associated with these developments in this alternative. Key differences in this alternative compared to the Staff Alternative include the following:

- The minimum flow in the J.C. Boyle bypassed reach would be increased from 200 to 470 cfs or more.
- The ramping rates in the J.C. Boyle peaking reach would be considerably more restrictive.
- J.C. Boyle powerhouse would only be able to operate in a peaking mode 1 day per week.
- The anadromous fish restoration plan would be replaced by the installation of fishways at each development.
- Substantially more gravel would be placed in the J.C. Boyle bypassed reach, and additional gravel would be added to the peaking reach.

Retirement of Copco No. 1 and Iron Gate Developments

We have identified for analysis a dam removal and development retirement alternative, consisting of the removal of Copco No. 1 and Iron Gate developments from the project. This alternative would address water quality issues that originate in the reservoirs associated with both developments, facilitate restoration of anadromous fish to habitat upstream of Iron Gate dam, and retain a substantial portion of the generation capability of the project. In this alternative, we modify or eliminate some of the environmental measures that we include in the Staff Alternative. Key differences in this alternative compared to the Staff Alternative include the following:

- Potential corrective actions to enhance water quality would no longer be necessary, and the water quality management plan would be replaced with a water quality monitoring plan.
- More restrictive down-ramping rates would be implemented downstream of project powerhouses.
- Gravel augmentation downstream of Iron Gate dam would be eliminated.
- The anadromous fish restoration plan would be replaced by the installation of upstream and downstream fishways at Copco No. 2 dam, and the spillway of Copco No. 2 dam would be modified to protect downstream migrating smolts.
- The cooperative fish disease risk monitoring and management plan would be eliminated.
- Funding obligations for Iron Gate Hatchery and the Fall Creek rearing facility would be eliminated.
- Operation and maintenance requirements for existing recreational facilities at Copco No. 1 and Iron Gate developments would be eliminated, as would proposed new facilities at both developments.
- Proposed visual enhancements at Iron Gate development would be eliminated.
- Consultation with the California Historic Preservation Officer regarding measures to protect or mitigate for historic properties associated with both developments would be necessary.

Other Alternatives Considered

Under the No-action Alternative, the project would continue to operate under the terms and conditions of the existing license and existing agreements. No new environmental measures would be implemented. We use this alternative to establish baseline conditions for comparison with PacifiCorp's Proposal, the Staff Alternative, the Staff Alternative with Mandatory Conditions, and the Retirement of Copco No. 1 and Iron Gate Developments, and to judge the benefits and costs of any measures that might be required under a new license. We also considered federal takeover, issuance of a nonpower license, project decommissioning with dams in place, and decommissioning other developments besides East

Side, West Side, Keno, Copco No. 1, and Iron Gate, but concluded that none of these alternatives are reasonable in the context of this proceeding.

Project Effects

We summarize the more substantial differences between PacifiCorp's Proposal, the Staff Alternative, the Staff Alternative with Mandatory Conditions, and Retirement of Copco No. 1 and Iron Gate Developments in table ES-1. Based on our detailed analysis of the environmental benefits and costs associated with the four alternatives considered in detail in this draft EIS, we conclude that the best alternative for the Klamath Hydroelectric Project would be to issue a new license consistent with the environmental measures specified in the Staff Alternative.

Table ES-1. Summary of effects of PacifiCorp's Proposal, the Staff Alternative, the Staff Alternative with Mandatory Conditions, and Retirement of Copco No. 1 and Iron Gate Developments. (Source: Staff)

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Power Benefits				
Annual generation (MWh)	676,455	669,215	497,931	448,605
Net annual power benefits	$12,753,430	$7,325,700	-$28,749,400	-$5,680,030
Geology and Soils				
Sediment Supply and Transport	Minor enhancement of spawning gravel supply from one time placement in J.C. Boyle bypassed reach and downstream of Iron Gate dam.	Moderate enhancement of spawning gravel supply based on mapping and monitoring of distribution in J.C. Boyle bypassed reach and from Iron Gate to Shasta River; quantity and frequency based on habitat needs.	Deposition of from 1,226 to 6,134 tons of gravel a year downstream of J.C. Boyle dam would also provide a moderate enhancement of spawning gravel supply and could increase channel complexity in the peaking reach. Diverting all flow to the J.C. Boyle bypassed reach for 7 days during the spring could serve to transport deposited, and naturally occurring gravel from the bypassed reach into the peaking reach.	Similar to Staff Alternative for J.C. Boyle bypassed reach. Sediment stored in Iron Gate reservoir would likely be released to downstream reaches which would have short term adverse effects on aquatic habitat but eventually stabilize, and spawning gravel released from the reservoir could enhance salmon spawning habitat. Copco No. 2 dam may trap some sediments released from Copco reservoir, but would likely fill and require dredging to maintain powerhouse operations; dredged and natural sediment could be passed downstream to contribute to fluvial geomorphologic processes interrupted by the dams.

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Slope stabilization	Installation of bypass valve at J.C. Boyle powerhouse would reduce use of emergency spillway, the source of a major slope failure.	In addition to PacifiCorp's measure, would address stabilization and restoration of this and other slope failures along the J.C. Boyle bypassed reach; removal of sidecast material from bypassed reach channel would enhance access of salmonids to thermal refugium and recreational boating opportunities.	Similar to Staff Alternative, although channel restoration would extend downstream through the peaking reach.	Similar to Staff Alternative; provisions for stabilizing exposed banks following dam removal would be addressed in development decommissioning plan.
Water Quality				
	Hypolimnetic oxygenation at Iron Gate reservoir would enhance DO downstream of Iron Gate compared to No-action but would still likely not meet applicable standards for much of the summer. Implementation could have unintended adverse effects in the reservoir. Reservoir management plans could identify measures to further address DO, as well as temperature and nutrient-related problems.	Turbine venting at Iron Gate would offer immediate downstream DO enhancement, while other options would be evaluated in response to monitoring results. DO would meet applicable standards at a level comparable to PacifiCorp's Proposal, but without potential for water quality degradation that could occur with hypolimnetic oxygenation. *Microcystis* monitoring would enable public notification of potential health risks from contact recreation at project reservoirs. Other effects similar to PacifiCorp's.	Similar to Staff Alternative.	The major sources of project-related water quality problems would be eliminated. Temperature regime downstream of Iron Gate would be more suitable for salmon, DO would usually meet applicable objectives, nutrient load would be reduced downstream of Iron Gate, which may reduce abundance of algae that form habitat for the intermediate host for at least two salmon pathogens.

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Aquatic Resources				
Instream flows	Additional 100 cfs released from J.C. Boyle dam would enhance physical habitat and retain important thermal refugium in the bypassed reach; proposed peaking operation restriction and ramping rates in the peaking reach would reduce the potential for fish stranding. Minor enhancement of habitat in Fall and Spring creeks.	Similar to PacifiCorp's proposal, although increased minimum flow in Copco No. 2 bypassed reach would substantially increase physical habitat. Warm water would likely continue to limit the suitability of the reach for salmonids during the summer.	Release of at least 470 cfs to the bypassed reach would wash out thermal refugium in J.C. Boyle bypassed reach, but would provide additional physical habitat; limiting peaking operations to one day a week would reduce likelihood of stranding, and provide more stable aquatic environment but would conflict with Outstanding Remarkable Value for this Wild and Scenic River reach by eliminating most whitewater boating opportunities and reducing the availability of optimal flows for angling.	Limiting ramping rate to 2 inches per hour at the USGS gage at Iron Gate, with a 12 inch per day limitation during Chinook salmon spawning and rearing period would likely curtail the ability to operate J.C. Boyle in a peaking mode, which could result in less downstream fluctuation, reducing the stranding potential more than the Staff Alternative, but also curtailing whitewater boating opportunities in the J.C. Boyle peaking reach. Ramping rate downstream of Iron Gate would be faster than Staff Alternative, but effects of ramping would be monitored with provisions for adaptive management of ramping rates during critical spawning, rearing and fry rearing periods. Water temperature of minimum flow to Copco No. 2 bypassed reach likely to be cooler than other alternatives, and more suitable for salmonids.

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Anadromous fish restoration and fish passage	Improvements to the existing fish ladder at J.C. Boyle dam, and use of a "fish gulper" to move downstream resident migrants past the dam, however, effectiveness of the proposed downstream passage system is uncertain. New fish ladders and screens at Spring and Fall creek diversion dams for resident fish. No specific provisions for restoration of anadromous fish.	Adaptive approach to restoring anadromous fish to most appropriate project reach using primarily trap and haul techniques, telemetry and smolt collection to assess use of habitat, and concentrated restoration effort to most promising reach. Provisions for expanding program to other project reaches based on monitoring results. No upstream or downstream resident fish passage provided at Fall or Spring Creek diversion dams.	Volitional upstream and downstream passage, with tailrace barriers and spillway modification at most project dams. Trap and haul element still included to transport adults and smolts around Keno reservoir during periods of poor water quality. Completion of fish passage facilities at all project developments would take up to 6 years. No provisions made for passing adults or smolts around Iron Gate and Copco reservoirs when water quality is poor or to minimize fish predation. Fish ladders and screens for resident fish prescribed for Fall and Spring creek diversion dams.	The two most problematic dams (based on height, reservoir size, and landscape constraints) for effective upstream and downstream passage would be removed. Upstream and downstream volitional fishways would be installed at Copco No. 2 dam and enhancements made to the existing fish ladder at J.C. Boyle dam. Water quality barrier to upstream and downstream passage of fish caused by both reservoirs would be eliminated. Migration corridor downstream of the project would be enhanced because conditions that foster disease outbreaks would be reduced.
Fish disease management	Reservoir management plan development could result in implementation of measures that would reduce nutrient load in project reservoirs, which could reduce downstream occurrence of algal populations that form habitat for fish pathogen host.	Implementation of a cooperative disease monitoring and management plan that integrates fish disease monitoring and management efforts by other entities with PacifiCorp's focused efforts between Iron Gate and Shasta River would address cumulative disease-related effects.	Similar to Staff Alternative.	Removal of the two dams would enhance downstream water quality and reduce cumulative effects that contribute to downstream fish kills caused by disease and poor water quality (low DO, high water temperature, variable pH and ammonia levels, crowding, nutrients and armored substrate favorable for algal populations that form habitat for fish pathogen host).

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Iron Gate Hatchery operations	Same level of funding (80%) for general operation and maintenance; unspecified minor improvements would be made to the hatchery; would purchase and operate facilities for tagging 25% of released Chinook salmon.	Increase level of hatchery funding to cover 100% of general operation and maintenance, purchase and operate facilities for tagging 100% of released Chinook and coho salmon. Refurbish and fund 100% of the operation of the Fall Creek rearing facility to enable shifting a greater portion of the released fish to yearlings rather than subyearlings, to reduce crowding effects with wild salmon.	Same as Staff Alternative.	Iron Gate Hatchery would either be dismantled or operated by others. Primary cold water supply, Iron Gate reservoir, would be eliminated. Fate of hatchery would be addressed in a decommissioning plan for the Iron Gate dam, in consultation with a fishery advisory committee that would include resource agency representatives.
Terrestrial Resources				
	Development of vegetation and wildlife management plans would provide for protection of sensitive plants, control of noxious weeds, consideration of plant of importance to Native Americans for revegetation projects, and implementation of measures to protect and enhance wildlife and associated habitat.	Similar to PacifiCorp's proposed measures	Similar to PacifiCorp's proposed measures.	Similar to PacifiCorp's proposed measures at remaining developments; exposed reservoir substrate would likely offer ideal conditions for re-establishment of vegetation. Eventually would reach equilibrium, but successional plant communities would likely diversify wildlife habitat.

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Recreational Resources				
	Propose to implement substantial recreational enhancements in accordance with its Recreation Resources Management Plan. Major new and modifications to existing facilities would be constructed at J.C. Boyle and Iron Gate developments, and moderate facilities at Copco and Fall Creek developments. Programmatic elements of the plan would also be implemented, including provisions for plan updates, coordination with agencies regarding shared operation and maintenance responsibilities, monitoring, project patrol, and an interpretation and education program.	Similar to PacifiCorp's proposal, although we would include Topsy Campground as a project facility for which PacifiCorp should have a share of the operation and maintenance costs and we provide for increased operation and maintenance at project recreational facilities during the term of a new license, if needed, to keep them current with applicable standards.	Similar to Staff Alternative, but would also include Spring Island Boater Access Site, Klamath Campground, dispersed day-use sites, and scouting trails at major rapids along the peaking reach among the facilities for which PacifiCorp was responsible. Provisions for peaking operations during only one day a week during the recreation season would substantially reduce whitewater boating opportunities in the peaking reach compared to PacifiCorp's proposal and the Staff Alternative. Because of this, commercial outfitters may attempt to crowd trips into the limited window that would be created, and create public safety hazards. Eventually, some commercial outfitters could go out of business because of lack of access to this Wild and Scenic River segment. Such diminishment of boating opportunities would be inconsistent with the Congressionally designated Outstanding Remarkable Value of whitewater boating.	The same as Staff Alternative for remaining developments. Existing recreational sites at Copco and Iron Gate developments would be either transferred to another entity or abandoned after appropriate decommissioning processes followed to secure the sites. Major new or enhanced facilities proposed at Iron Gate development would not be constructed. Some sites could serve as public access sites for the newly created riverine reaches. The length of the peaking reach would be increased by several miles, and additional riverine boating opportunities would be created at the Iron Gate reservoir site, potentially enhancing whitewater boating opportunities; however, restrictions to peaking operations to minimize stranding potential of salmon could reduce boatable days from the proposed project or the Staff Alternative.

Resource	PacifiCorp's Proposal	Staff Alternative	Staff Alternative with Mandatory Conditions	Retirement of Copco No. 1 and Iron Gate Developments
Cultural Resources				
	Implementation of its revised HPMP would provide reasonable monitoring, inspection, and protective measures for cultural resources within PacifiCorp's defined APE.	We expand PacifiCorp's proposed APE, to include land within the existing and proposed project boundary, the area along the peaking reach influenced by the project, and downstream of Iron Gate dam to the confluence of the Scott River. The HPMP would be revised to address management of cultural resources in the APE.	Similar to Staff Alternative, although may provide for survey of areas outside our defined APE.	Similar to Staff Alternative for developments that remain in the project. However, major site monitoring, inspection, and treatments were proposed for areas at Copco and Iron Gate reservoirs. These sites would need to be addressed as part of a decommissioning plan that would include consultation with the CA SHPO and appropriate tribal and agency representatives.

Factors Affecting the Low Abundance of Klamath Naturally-Spawning Fall Chinook salmon in 2004 and 2005

1. Introduction
    a. Biological situation
        i. Historical numbers
        ii. 2004-2005 status
            1. Years directly affecting 2004/2005 stocks (2000-2003)
    b. Salmon FMP charge
    c. Process of this document
2. Fishing
    a. Possible effects of Fishing
        i. Overfishing in parent year
        ii. Overescapement in parent year
        iii. Overfishing in return year
    b. Number of fish caught
        i. In parent years
        ii. In years leading to 2004 and 2005
        iii. In 2004 and 2005
    c. Technical infrastructure
        i. F_1 generation – hatchery fish counted as natural spawners
        ii. Other issues
3. Habitat
    a. Historical perspective
        i. Early impacts
        ii. Decline of fish and fisheries
    b. Inriver habitat
        i. Dams and their effects
            1. General dam operations
            2. Mainstem Dams
            3. Dwinell Dam
            4. Trinity River Diversion Project
            5. Lack of fish passage
                a. Unreachable habitat
            6. BO for Klamath operations; long-term nature of impacts
            7. Low flows and drought conditions
                a. Recent droughts
                b. Crisis water management
                c. Reduced flows in bypassed reaches
                d. Relationship between flows and temperatures
                e. Low flows as barriers to upstream migration
                f. Water temperatures and dissolved oxygen
            8. Effects of hydroelectric peaking operations

a. Effects of large flow fluctuations in peaking reaches
b. Reduced abundance of macroinvertebrates
c. Restricted fish movement
d. Decreased water quality
e. Fish stranding

9. Impacts of impoundment/alteration of the natural hydrologic regime
    a. Changes to water temperature
    b. Changes to dissolved oxygen
    c. Changes to nutrient loads
    d. Gravel depletion
    e. Altered flood flows
    f. Loss of thermal refugia
    g. Loss of ecosystem function

ii. 2002 adult fish kill (and other fish kills)
1. Multiple fish kills have occurred
2. Major 2002 fish kill affected stocks of concern
    a. Causes of fish kills
        i. Enhanced conditions for toxic algae blooms and parasitic disease vectors
            1. Reduced flows
            2. High temperatures
3. Water management in the Klamath Basin
    a. Private Agricultural Diversions in the Upper Klamath Basin
    b. Federal Klamath Irrigation Project – the only water withdrawals on the Klamath Side with a Federal nexus.
4. Scott River
    a. Private water diversions primarily for agriculture. X number of acres, Y number of acre-feet on an annual basis.
5. Shasta River
    a. Private water diversions primarily for agriculture. X number of acres, Y number of acre-feet on an annual basis.
    b. Historically a primary producer of Klamath River fall Chinook.
    c. More than 80,000 fall Chinook in 193? (Shasta Racks data)
6. Trinity River

iii. EFH considerations

c. Other inriver habitat impacts
i. Water withdrawals (see dams, etc.)
ii. Timber harvest practices
iii. Road building

d. Ocean conditions

4. Hatcheries
    a. Mitigation purpose
    b. Juvenile interactions
        i. Magnitude, size and timing of hatchery releases with regard to competition with naturally produced juveniles
    c. Adult interactions
        i. Contributions to natural spawners in 2004 and 2005 (less than anticipated, as a "cause" of shortfall?)
        ii. Long term genetic effects of interbreeding over many generations
5. Cumulative effects
6. Conclusion
7. Recommendations
    a. Habitat recommendations
        i. Remove dams
        ii. Allocate water fairly
        iii. Develop interim measures to be implemented prior to dam removal
        iv. Protect Trinity River flows
        v. Reinitiate consultation with National Marine Fisheries Service (NMFS) as soon as possible regarding the effects of water project operations on chinook and coho salmon essential fish habitat (EFH)
        vi. Implement Hardy Phase II recommendations as an interim measure while consultations are ongoing.
        vii. Meet mitigation obligations
        viii. Establish a flow management advisory committee as soon as possible (DOI).
        ix. Revise water bank accounting.
        x. Support studies of juvenile survival and health and provide adequate funding for the Klamath monitoring programs.
        xi. Change hatchery operations (coded wire tags)
        xii. Develop credible long-term solutions to water management problems within the Klamath Basin.
        xiii. Directions for Council involvement [OPTIONAL]
        xiv. Timeline for FERC relicensing
        xv. Recommended studies
8. Appendices/bibliography

Messenger Express

Netscape Messenger Express for Jennifer Gilden

Folders Inbox Message Options Help Logout

Compose Reply Reply All Forward Move message to folder: Delete Prev Next

From "PFMC Comments" <pfmc.comments@noaa.gov>
Date Wednesday, October 11, 2006 9:26 am
To Chuck.Tracy@noaa.gov
Cc Jennifer.Gilden@noaa.gov
Subject Fwd: Dam removal
Attachments vCard(pfmc.comments) 1K

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220-1384
Phone: 503-820-2280
Fax: 503-820-2299
On the web at: http://www.pcouncil.org

----- Original Message -----
From "jhurley" <jhurley@shasta.com>
Date Tue, 10 Oct 2006 22:05:18 -0700
To <pfmc.comments@noaa.gov>
Subject Dam removal

PFMC:
As expensive measures are being considered to restore salmon runs, it appears that other factors should be considered along with dam removal.

What steps are being taken to clean up the meth labs and marijauna gardens in the Klamath watershed? Will aerial spraying be allowed? Will gill netting still be allowed? How many salmon will make it past the gill nets? Can law enforcement be relied upon to reduce the millions of cigarette butts from entering our waterways? How many citations have been given to smokers for littering in recent years? Is there any chance that any citations will be given to smokers? Their cigarette butts flavor our water and kill aquatic life, even endangered species.

Yours, Jerry Hurley, 1020 Yogi Ct., Redding, CA 96003 (530) 241-8525 jhurley@shasta.com