

HABITAT COMMITTEE PROPOSED ACTION FORM

HC Sponsor: Paul Engelmeyer

Title of Issue: Programmatic letter regarding hydropower relicensing actions **Deadline (if any):**

Proposed Action: Letter for Council signature

Addressed To: The Honorable Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20246

Description of Issue:

A large number of FERC-licensed hydropower facilities within basins draining into Council Area waters have begun or are about to begin their relicensing process. These hydropower projects can have significant effects on Council-managed salmon species. We are providing input to FERC on the need to address many issues in their relicensing process including EFH, passage problems, cumulative impacts to salmon, and impacts to water quality.

Description of Regional Significance:

Many hydropower projects in California, Oregon, Washington and Idaho are currently undergoing, or are soon scheduled for, relicensing by FERC. With the term for FERC hydropower licenses generally running from 30 to 50 years, these relicensing measures are particularly important. The method that FERC uses to relicense hydropower projects makes it difficult for the agency to conduct cumulative impact assessments of the projects' effects on fish and habitat. The effects of hydropower projects on fish passage, stream flow and water quality, the lack of flexibility in the relicensing process, and mitigation and compensation measures are all matters of concern.

Potential Adverse Impacts to EFH? Yes No

For Which Species? All anadromous fish in the Council region whose habitat is affected by hydropower projects, including coho and chinook, which are Council-managed species.

Potential Benefits of Proposed Action:

The letter will ensure that the Council's policies and recommendations will be presented in a consistent manner for all of the FERC relicensing projects.

Attach draft document for Habitat Committee consideration.

DRAFT

The Honorable Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20246

Dear Secretary Salas:

The Pacific Fishery Management Council (Council) is writing to assure that the Federal Energy Regulatory Commission's licensing actions under the Federal Power Act are consistent with the Magnuson-Stevens Fishery Conservation and Management Act. Specifically, the Council is concerned that in making its hydropower project relicensing decisions, FERC meets its responsibilities regarding conservation of Essential Fish Habitat (EFH). Such responsibilities include consultation with the Council and NMFS to assure minimization of acute and cumulative impacts on salmon from hydropower operations.

This Essential Fish Habitat mandate will also help FERC assure consistency with its obligations under the 1986 Electric Power Consumers' Act, which requires FERC to take a balanced approach to hydropower project licensing. The Act requires that when deciding whether to issue a license, FERC consider not only the power generation potential of a river, but *give equal consideration to energy conservation, protection of fish and wildlife, and general environmental quality*. This mandate requires FERC to consult with federal, state and local resource agencies, including fish, wildlife, recreation and land management agencies, in order to assess the impact of a hydropower project on the environment. We are concerned that new FERC regulations may reduce FERC's obligations to environmental and energy conservation functions and values.

The Council is also concerned about cumulative impacts of hydropower projects and the methods FERC uses to analyze these impacts. Specifically, the Council is concerned about fish passage conditions that are designed to minimize mortality; the effects of hydropower projects on stream flow and water quality; mitigation and compensation measures; and the lack of flexibility in the relicensing process. Below, we provide some background and detail our concerns with the FERC process.

Background: Essential Fish Habitat

The Magnuson-Stevens Act, as revised in 1996, requires federal fishery management plans to include Essential Fish Habitat descriptions, and calls for federal agencies to consult with National Marine Fisheries Service (NMFS) on activities that may harm Essential Fish Habitat. The Magnuson-Stevens Act includes the following definition:

"EFH for Pacific coast salmon fishery means those waters and substrate necessary for salmon spawning, rearing, breeding, feeding, or growth to maturity, needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem."

We have enclosed the relevant section of the Magnuson-Stevens Act in order to clarify

current concerns related to habitat for coho and chinook salmon and Puget Sound pink salmon.

Impact of FERC-licensed hydroelectric projects on Essential Fish Habitat

There are currently a total of 254 FERC-licensed hydropower projects in California, Oregon, Washington and Idaho. Many of these projects are currently undergoing, or are soon scheduled for, relicensing. With the term for FERC hydropower licenses generally running from 30 to 50 years, these projects present unique challenges to anadromous fish. Only a small proportion of these projects have upstream and downstream fish passage facilities, and many of these facilities perform poorly. In addition, many hydropower projects decrease streamflow, impair water quality and destroy important fish habitat, causing serious harm to anadromous fish.

Example: California's Central Valley

In California's Central Valley (which includes the Sacramento and San Joaquin Watersheds), dams block as much as 95% of historic salmonid spawning habitat. As a result, salmonids have disappeared from approximately 5,700 miles of their historic habitat in the Central Valley. In most cases, the remaining habitat is of much lower quality than the lost habitat, and is further degraded by the impacts of hydroelectric operations. According to a FERC review, 149 FERC licensed and exempted projects are located in the Central Valley. Although most of these projects are small (114 have capacities less than 5 MW), total reservoir storage is about 40 percent of all surface water storage in the Central Valley. Most storage is located at relatively few projects. Twenty-nine projects account for 95 percent of the FERC-licensed storage in the Valley.

In 1985 the Oak Ridge National Laboratory analyzed the adverse effects of Central Valley hydroelectric projects on sensitive fish populations. The results of this analysis are contained in a FERC report that concludes that 27 FERC-licensed hydroelectric projects adversely affect stream flows in areas where sensitive fish species (including chinook salmon) are located. The report further concludes that nine other FERC-licensed hydro projects (involving 22 storage reservoirs) appear to have significant direct and cumulative impacts.

Cumulative Impact Assessment

Programmatic decision-making should use cumulative impact analysis to address the effects of multiple actions, some of which may have minor impacts individually, but which collectively may have significant impacts on a watershed. It is critical that FERC use analytical tools to determine such impacts and identify appropriate mitigation measures. Some of these tools include NMFS' 1996 *Matrix of Pathways and Indicators*, a method for evaluating the effects of human activities on salmonid habitat; watershed assessment protocols; research programs; and predictive watershed models for testing policies and assessing adverse impacts. Predictive models can be particularly useful for assessing cumulative impacts. FERC should use these tools to develop its cumulative impacts analysis in its environmental analysis conducted pursuant to the National Environmental Policy Act, and should support fish and wildlife agency requests for such analysis by applicants during the study phase of the relicensing proceeding.

In general, FERC has conducted impact assessments on a project-by-project basis. An exception to this is the recent FERC Draft Environmental Impact Statement on four Upper Snake River hydroprojects. Even this effort, however, does not include direct or cumulative impacts of the four projects with the Hells Canyon hydroprojects, or the effects on the watershed below the four upper Snake River projects.

With the exception of the four Upper Snake River projects, relicensings are not coordinated by watershed or impact area. Expiration of existing licenses is based on the date and duration of the current license, and relicensing occurs shortly before the FERC license for a hydroelectric project expires. This lack of coordination precludes the development of effective cumulative impact assessments and system-wide operating plans for improving efficiency, facilitating relicensing and minimizing impacts on listed species. This lack of coordination also limits opportunities for improving fish passage on rivers where consecutive hydroelectric projects create multiple migration barriers. We believe FERC should initiate reopener proceedings where it has retained the authority to do so in order to coordinate relicensing proceedings, so that expiration dates are coordinated by watershed or system, whichever is more relevant to aquatic habitat.

Further, FERC should periodically review license conditions to assure that license holders are fully meeting license conditions. Annual licenses should be subject to current and new environmental laws and standards. In addition, FERC should maintain the flexibility to reopen licenses and should require interim mitigation and/or monitoring upon receiving evidence that licenses fall short of meeting environmental and energy conservation requirements. Lastly, FERC should abstain from adding conditions to existing licenses during the relicensing process that might degrade salmon passage and important habitat. Instead, such modifications should be part of the relicensing proposal.

Cumulative impact analysis should be included in programmatic decision-making since even seemingly minor actions can have unforeseen adverse effects. State-of-the-art analytical tools can be used to predict cumulative impacts and help FERC identify appropriate protection, mitigation and enhancement measures.

Critical Issues

The Council urges FERC to address the following issues as it considers relicensing actions in California, Washington and Oregon:

- (i) **Fish passage conditions at the project:** Hydropower projects affect both upstream migration of adult salmonids and downstream migration of juveniles. The passage facilities at some projects are improperly designed or operated, resulting in substantial direct and/or indirect harm to fish. Some projects totally block migration, eliminating access to historic habitat and disconnecting populations from their habitats.

During relicensing, existing fish passage conditions should be analyzed and strategies devised to improve passage conditions where necessary. Wherever fish are blocked from historic habitat, reintroduction measures should be evaluated and implemented. Such measures include installing fishways, trapping and hauling,

shutting down projects and removing dams. Mitigation should also be evaluated as an alternative. Under the Federal Power Act, NMFS and the U.S. Fish and Wildlife Service have mandatory authority to prescribe fishways at hydropower projects, and state fish and wildlife agencies have recommendation authority. FERC should assure that fishways prescribed by these agencies are constructed or modified and operated according to their criteria.

- (ii) **Impacts to stream flow and fish habitat in and below the project area:** Hydropower projects that are truly “run of the river” may have minimal effects on stream flow conditions because they pass all water through turbines or over spillways, maintaining consistent flow conditions below the project. However, few if any projects are truly “run of the river,” where inflow matches outflow on a 24-hour basis. Projects that are not “run of the river” can degrade both upstream and downstream habitat. In addition, “peaking projects” may store stream flows and release them later at specific times for power generation. These operations can strand fish due to rapid flow fluctuations, scour spawning and rearing areas, and reduce the abundance and diversity of the aquatic insects that are critical to fish productivity. Still other projects may divert stream flows from the river channel, thus removing water from aquatic habitat.

During relicensing, both pre-project and existing stream flow conditions in the affected area should be noted, and the modifications to project operations to improve fish passage, incubation, rearing and spawning habitat and to reduce other impacts on aquatic habitat should be provided. Both federal and state fish and wildlife agencies have been given authority under section 10(j) of the Federal Power Act to recommend conditions for new FERC licenses that will mitigate project impacts on fish, wildlife and habitat. FERC should cooperate with these agencies to develop improved stream flow, ramping, and period flushing flow requirements for new licenses.

- (iii) **Impacts to water quality in the project area:** Project operations that affect stream flow may also affect water quality. For example, storing water behind dams and similar structures usually results in increased water temperatures, disruption in the movement of sediments, and reduced dissolved oxygen downstream. Reducing stream flows may also reduce the water available for diluting point- and non-point pollution. Rapid release of water below projects can increase total dissolved gas levels, causing gas bubble trauma.

During relicensing, pre-project water quality in the affected area should be analyzed, including those parameters monitored under state, tribal, and federal Clean Water Act regulations. Studies should examine how project operations need to be modified to prevent degradation of existing water quality, or to improve water quality in water quality limited streams. Applicants should describe existing stream flow conditions in the affected area, the characteristics of a natural flow regime in the watershed, and how project operations will be modified to improve access and impacts on aquatic habitat. Conditions must be added to assure the needed modifications. The Council urges FERC to work with the appropriate state’s water quality agency to assure compliance under Section 401 of the Clean Water Act.

- (iv) **Impacts to ESA-listed species:** Hydropower projects are identified as one of the major causes of decline for ESA-listed salmon and steelhead stocks. As such, assessments undertaken by the applicant should provide a scientifically-based rationale demonstrating that the proposed actions protect, mitigate, and enhance salmon and their habitat throughout their life cycle.
- (v) **Effective monitoring and evaluation programs:** Monitoring of mitigation projects must accurately assess compliance and effectiveness within a watershed context. Much of the already cumbersome licensing process focuses on the details of mitigation and monitoring at individual projects. Continuing the current series of independent and site-specific efforts, without regional or basin-wide coordination, perpetuates a time-consuming and repetitive process, without assuring that the intended benefits to fish habitat and survival are being realized. This approach also makes it impossible to respond to environmental and energy needs in a timely way. Therefore, FERC's efforts to protect, mitigate or enhance aquatic resources should be based on a programmatic, basin-wide perspective and should have appropriately designed monitoring.
- (vi) **Multiple dam effects:** Within any larger watershed, structural configurations, operations and future relicensing of multiple hydropower projects must be evaluated with respect to both singular and cumulative impacts on salmon and habitat.
- (vii) **Adaptive management provisions:** A structured process of "learning by doing" needs to be included throughout the term of the license by evaluating monitoring data to determine any needed revisions of assumptions, management strategies, or objectives. Applicants must describe the conditions under which project operation and configuration revisions are to be made and the processes for accomplishing those revisions. However, the adaptive management approach should not be used as an excuse to avoid doing studies during the pre-licensing consultation phase. When misused, adaptive management provides an easy excuse to delay implementing on-the-ground mitigation measures for the first decade of a new license while studies are being conducted because good information on project impacts and mitigation was not collected during the consultation period.
- (viii) **Alternative licensing process:** The Council is concerned by the recent collaborative licensing alternative instituted by FERC. With so many licensing proceedings taking place, it is difficult for the Council and other important stakeholders to effectively engage in the alternative process because of the large time and resource commitment required. Thus, FERC should carefully weigh each licensing proceeding with respect to the alternative process, and defer to the traditional three-stage consultation process if stakeholders provide evidence that the alternative process is inappropriate based upon their available resources. Further, FERC should expedite the adoption of licenses when stakeholders have agreed on license conditions.

The Council is also concerned that FERC often does not support shorter license terms or the reopening of licenses. Such measures would allow for adaptive management of license conditions, and would provide more flexibility for fishery

agencies in their mandate to protect public fishery resources. Given the importance of these multiple licensing proceedings, which will establish new or renewed licenses for decades in the future, the Council recommends that FERC seek flexibility with respect to reopening licenses, as well as shorter license terms. In the standard thirty to fifty years of a FERC license, entire populations of fish can be fragmented or driven to extinction.

Commercial, tribal, and sport fisheries and the communities they support throughout Washington, Oregon, Idaho and California are greatly influenced by the operation of FERC-licensed facilities. FERC must work with stakeholders to balance these economic, cultural and environmental values. Agencies, tribes and other stakeholders cannot fully participate in license and relicensing proceedings unless they have the resources to do so, so both the applicants and FERC must provide these resources. FERC must engage applicants and current license holders early in the process and play a primary role in ensuring that license conditions protect, mitigate and enhance salmon and their critical habitats. In particular, FERC should improve the design and implementation of relicensing studies to ensure that all parties have timely and meaningful input. The burden of proof must not fall on fish and wildlife agencies and the resources they are charged to protect.

The Council strongly believes that during the upcoming relicensing decisions there is both opportunity and means to positively influence the survival of salmon through habitat, flow, and passage improvements. All of us involved in resource use and management have learned much during the first 50 years of dam operations and know that we have the knowledge and ingenuity to meet both our energy needs and to regain and rebuild the health of our salmon resources. We appreciate your attention to our concerns and suggestions.

Sincerely,

DRAFT

Dr. Hans Radtke
Chairman
Pacific Fishery Management Council

Enc: Section 3.2.5, Potential Impacts and Conservation Measures for Nonfishing Activities that may affect Salmon Essential Fish Habitat, of Appendix A, Identification and Description of EFH, Adverse Impacts, and Recommended Conservation Measures For Salmon - Amendment 14 to the Pacific Coast Salmon Plan (August 1999)