



**DEPARTMENT OF FISH AND GAME**

<http://www.dfg.ca.gov>

POST OFFICE BOX 47  
YOUNIVILLE, CALIFORNIA 94599  
(707) 944-5500



December 19, 2002

Ms. Magalie R. Salas  
Office of the Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

Dear Ms. Salas:

Pacific Gas and Electric Company (PG&E)  
Project 77-110 (Potter Valley Project)

The California Department of Fish and Game (DFG) was dismayed to review the National Marine Fisheries Service (NMFS) November 26, 2002 Biological Opinion (B.O.) for the Potter Valley Project. DFG does not agree with NMFS that the Federal Energy Regulatory Commission (FERC) proposed action is likely to jeopardize the continued existence of coho salmon, Chinook salmon and steelhead in the Eel River. The FERC proposed action (that is, the proposal developed by PG&E, DFG, NMFS, and U. S. Fish and wildlife Service, with modifications by the Potter Valley Irrigation District) represents a significant enhancement to the fisheries protection afforded in the existing project license. The Reasonable and Prudent Alternative (RPA) NMFS proposes in the B.O. offers no significant biological advantages over FERC proposed action, but actually DFG believes increases the risk to anadromous salmonids in the Eel River. For this reason, DFG continues to support the FERC proposed action over NMFS RPA as the best choice for protection of Eel River fisheries.

On August 30, 2002, the California Fish and Game Commission determined that coho salmon populations north of San Francisco Bay are warranted for listing under the California Endangered Species Act (CESA). These populations of coho salmon are now a candidate species and are protected from "take" under CESA. Populations north of Punta Gorda (including the Eel River drainage) were determined to warrant listing as threatened. Within the Eel River, recent surveys suggest that coho populations in the Outlet Creek watershed are perilously low.

Ms. Magalie R. Salas

December 19, 2002

Page 2

Adult coho salmon migrating up the mainstem Eel River to Outlet Creek and coho salmon smolts emigrating from Outlet Creek down the Eel River could be affected by project operations. DFG has concluded that certain aspects of the RPA, if implemented, could threaten the continued existence of coho salmon populations in Outlet Creek and may constitute "take" under CESA.

There are three primary areas where DFG finds the RPA is deficient to FERC's proposed action: stream gaging, summer flows, and monitoring/management measures,.

#### Stream Gaging

With respect to stream gaging, the RPA proposes to require indexing the daily adjustment of flow releases from fall through spring on back calculation of inflow to Lake Pillsbury the previous seven days. We believe that this is a step backward in the biological responsiveness of the RPA compared to the FERC proposal, which relies on real-time data from a gage on Tomki Creek to adjust Project flow releases, and which allows for adjustment up to three times daily in November and December in response to storm runoff. The FERC proposal ensures that Project flow releases are augmented by tributary inflow below the Project in real time in areas still accessible by anadromous fish. This alternative affords the best opportunity to mimic the natural hydrograph.

Back calculation of inflow to Lake Pillsbury in the RPA will result in Project releases being made several days after a storm passes. This could cause the Project releases to miss the peak of the hydrograph and send confusing cues to migrating fish.

#### Summer Flows

The FERC proposed action calls for a flow of 5 cfs below Cape Horn Dam from July 8 through September 30. The RPA calls for summer flows of 3, 5, 9, 20, 25, 30 and 35 cfs depending on classification of both the current and previous water years. DFG asserts that even at flows of 35 cfs very little residual coolness from the Lake Pillsbury hypolimnion will be carried downstream of Cape Horn Dam to potentially benefit rearing juvenile steelhead. There is a large body of data that has

Ms. Magalie R. Salas

December 19, 2002

Page 3

found lethal water temperatures to occur in comparable sections of the Eel River with unimpaired flow (Puckett and Van Woert 1972, Kubicek 1977, Friedrichson 1999). Lewis et al. (2000) found landscape level features, such as distance from the basin divide and proximity to marine cooling, were primary determinates of water temperatures in the Eel River.

The increased summer discharge called for in the RPA would, DFG believes, primarily provide increased habitat for rearing predatory pikeminnow, which have already effectively eliminated juvenile steelhead from historic use of mainstem Eel River thermal refugia including pools that thermally stratify at low flow. Flows up to 35 cfs called for in the RPA are expected to increase habitat for juvenile pikeminnow rather than juvenile steelhead, and would remove the pikeminnow population bottleneck created by the existing 5 cfs release. This would potentially result in higher over-summer survival of pikeminnow thereby increasing the predation threat during the spring downstream migration for coho salmon, Chinook and steelhead in over 100 miles of the mainstem Eel River (see DFG filing of April 26, 1999 for an expanded discussion). DFG recognizes that summer flows in the RPA vary from year to year, so the effect of NMFS proposal on juvenile pikeminnow survival will not be consistent from year to year. However, pikeminnow are a long-lived species and the impact of increased over-summer survival of pikeminnow in even a few years may result in increased predation on downstream migrant salmonids for many years.

DFG estimates that in 2001, fewer than 60 coho salmon spawned in the Outlet Creek watershed, continuing a pattern of low spawner abundance that has existed for more than the three-year life cycle of coho salmon. As such, DFG considers this stock to be on the brink of extirpation. Coho salmon that migrate over 125 miles to spawn in Outlet Creek constitute the longest run of coho in the State, and loss of this potentially unique genetic coding would be a serious blow to the recovery of coho salmon in California.

Given the critically low numbers of Outlet Creek coho salmon and the probability that increased summer flows in the Eel River would increase the rate of pikeminnow predation upon coho outmigrants, DFG's position is that any increase in summer flow recommended with the RPA, or other similar increases in

flow above the existing condition, may constitute "take" of coho salmon under the provisions of CESA.

NMFS B.O. states (page 64), in reference to the 5 cfs summer flow release in the proposed action, that, "Under these crowded conditions, large Sacramento pikeminnow prey on all food items, including juvenile salmonids, and displace juvenile steelhead from thermal refugia, primarily through predator-prey interactions." DFG concurs with NMFS's statement but would add that, i) A desired outcome of the 5 cfs summer release is to create these "crowded conditions" to limit the food and space available to pikeminnow through the summer months to maximize the annual pikeminnow mortality rate, and ii) The interspecific relationships between pikeminnow and juvenile steelhead will not be abated during release of NMFS flows (up to 35 cfs). Pikeminnow occupation of the South Fork of the Eel River has virtually eliminated over summer juvenile steelhead utilization of the lower 50 miles of the South Fork Eel River, which is subject to unimpaired flows (DFG filing of April 26, 1999, Appendix A). We disagree with the statement on page 63, "low summer flows ...have provided ideal conditions for Sacramento pikeminnow." We point out that pikeminnow populations are thriving immediately below Scott Dam during the summer months in a discharge of 150 cfs, with cold water temperatures ranging from 56 to 58° F. (personal observation L. Week), (SEC 1990, 1991, 1992, 1993, 1998). We note the following passage in the B.O. (page 55): "SEC (1996 b) cite USACE (1982) and Prolysts (1984) who found that since 1922, increased summer flows and temperatures in the mainstem Russian River not only decreased salmonid habitat, but actually created ideal warm water habitat. SEC (1996 b) reviewed sources which indicated that Sacramento pikeminnow, a native [to the Russian River] warm water species which competes with or directly preys upon juvenile salmonids, dominate much of the mainstem [Russian River], and have become the most widespread predator in the basin." It is apparent that it is not low flows that favor pikeminnow to the contrary, their populations expand into the available habitat created by larger magnitude flows. The addition of up to 35 cfs of summer flow to the mainstem Eel River will relieve the 5 cfs "bottleneck" provided in the proposed action and is likely to increase the threat of pikeminnow predation for spring outmigrating coho, Chinook and steelhead. The increased threat of "take" created by the RPA

Ms. Magalie R. Salas  
December 19, 2002  
Page 5

summer flow releases does not exist in the FERC proposal, which maintains essentially the same summer flows as the baseline (existing) conditions.

With respect to the notion that the RPA flows will enhance summer rearing habitat, the evidence suggests that it will actually diminish rearing habitat. As already noted, very little residual coolness from the Lake Pillsbury hypolimnion will be carried for any significant distance downstream of Cape Horn Dam, leaving juvenile steelhead dependent on thermal refugia such as stratified pools for suitable habitat. DWR (1976) found that as flows increase the amount of cool water in stratified pools decreases. Significant decay of pool stratification was noted at 26 cfs, with nearly complete destratification at a discharge of 83 cfs. The proposed action flow of 5 cfs most closely approximates the 8 cfs release, which DWR found maximizes juvenile steelhead habitat in stratified pools. Flows above 20 cfs, as found in the RPA, will clearly adversely impact critical habitat for listed steelhead in a significant reach of the mainstem Eel River.

#### Monitoring and Fisheries Management Measures

DFG is concerned that the scope of fisheries monitoring and pikeminnow control activities proposed in the B.O. is inadequate to address the potential impact of the RPA. In the FERC proposal, PG&E will provide \$60,000 annually (approximately \$1.2 million total) to DFG for operations at Van Arsdale Fisheries Station, including pikeminnow suppression in Van Arsdale Reservoir. In contrast, the RPA (page 94) requires that "PG&E shall provide \$60,000 annually in order to fund the costs of implementing the pikeminnow suppression program and monitoring requirements of this RPA and Incidental Take Statement." Given our concerns about the potential for NMFS summer flows to increase predation on downstream migrant salmon and steelhead, placing a \$60,000 cap on annual monitoring and pikeminnow suppression will produce an inadequate program. Redirecting part or all of these funds away from DFG operation of Van Arsdale Fisheries Station will also have an adverse effect on Department management activities during the current State budget crisis.

Ms. Magalie R. Salas

December 19, 2002

Page 6

The DFG is also concerned that aside from inadequate funding, the RPA does not provide for timely adaptive management of pikeminnow populations in the mainstem Eel River. NMFS proposes that PG&E develop a ten-year summer monitoring plan for rearing steelhead and pikeminnow from Cape Horn Dam to below Outlet Creek; however the NMFS plan (page 110) specifically defers any re-evaluation of the summer flows or other measures until after ten years of monitoring. As previously noted, the coho salmon population in Outlet Creek is at very low levels, and any increased predation on downstream migrants represents a serious threat to its survival. In order to minimize the risk to coho salmon and other anadromous salmonids in the Eel River, NMFS summer flow plan if implemented, needs to also include an adaptive management plan for more quickly adjusting summer flow and/or suppressing pikeminnow populations. This plan should be in place prior to implementing higher summer flows, so that if it is found that the NMFS summer flows increase pikeminnow populations, the predation threat can be addressed without delay.

#### Conclusions

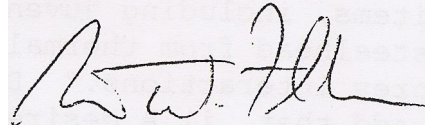
In summary, DFG does not concur with NMFS's proposed jeopardy finding with the FRG/PVID proposal when every element of that proposal is superior for fish in the Eel River over existing conditions, with the exception of summer flows which are proposed to remain unchanged. We disagree with many of NMFS's assertions and analysis in the B.O. In particular, we find that the potential increased risk of predation on out-migrant coho salmon created by the NMFS summer flow schedule could constitute "take" under CESA. For this reason, DFG continues to support the FERC proposed action over the RPA as the best choice for protection of Eel River fisheries.

There remains a significant difference of opinion between DFG and NMFS regarding the interpretation of the biological and physical factors affecting salmonid and pikeminnow production in the Eel River. Given this difference of opinion, we believe it

Ms. Magalie R. Salas  
December 19, 2002  
Page 7

would be appropriate to refer this issue to a scientific peer review panel prior to FERC issuance of an amendment to the Potter Valley Project license.

Sincerely,



Robert W. Floerke  
Regional Manager  
Central Coast Region

cc: Ms. Rhonda Shiffman  
Pacific Gas and Electric Company  
Post Office Box 770000  
Mail Code: N11C  
San Francisco, CA 94177

Mr. Randy Brown  
U. S. Fish and Wildlife Service  
1655 Heindon Road  
Arcata, CA 95521

Pat Rutten  
Northern California Supervisor  
Protected Resources Division  
National Marine Fisheries Service  
777 Sonoma Avenue! Suite 325  
Santa Rosa, CA 95404

Service List

Ms. Magalie R. Salas

December 19, 2002

Page 8

**References -**

- DWR (California Department of Water Resources). 1976. Eel-Russian rivers streamflow augmentations studies. DWR Bulletin No. 105-5
- Friedrichsen, G.L. 1999. Eel River water quality monitoring project. Preliminary report submitted to the California Association of Resource Conservation Districts. Humboldt County Resource Conservation District, Fields Landing, California.
- Lewis, T.E., D.W. Lampher, D.R. McCanne, A.S. Webb, J.P. Krieter, W.D. Conroy. 2000. Regional assessment of stream temperatures across Northern California and their relationship to landscape-level and site-specific attributes. Forest Science Project, Humboldt State University Foundation, Arcata, California. Dated October 6, 2000.
- puckett, L.K. and W.F. Van Woert. 1972. Water temperature observations in the Eel River system 1957-1969, a data report. California Department of Fish and Game. Mimeograph. 150 p.
- SEC (Steiner Environmental Consulting). 1990. Potter Valley Project Monitoring Program (FERC No. 77, Article 39): Effects of Operations on Upper Eel River Anadromous Salmonids, 1998-89 Progress Report. Prepared for Pacific Gas and Electric Company, San Ramon, CA.
- SEC (Steiner Environmental Consulting). 1990. Potter Valley Project Monitoring Program (FERC No. 77, Article 39): Effects of Operations on Upper Eel River Anadromous Salmonids, 1989/90 Progress Report. Prepared for Pacific Gas and Electric Company, San Ramon, CA.
- SEC (Steiner Environmental Consulting). 1990. Potter Valley Project Monitoring Program (FERC No. 77, Article 39): Effects of Operations on Upper Eel River Anadromous Salmonids, 1990/91 Progress Report. Prepared for Pacific Gas and Electric Company, San Ramon, CA.



Ms. Magalie R. Salas

December 19, 2002

Page 9

SEC (Steiner Environmental Consulting). 1990. Potter Valley Project Monitoring Program (FERC No. 77, Article 39): Effects of Operations on Upper Eel River Anadromous Salmonids, 1991/92 Progress Report. Prepared for Pacific Gas and Electric Company, San Ramon, CA.

SEC (Steiner Environmental Consulting). 1990. Potter Valley Project Monitoring Program (FERC No. 77, Article 39): Effects of Operations on Upper Eel River Anadromous Salmonids, Final Report. Prepared for Pacific Gas and Electric Company, San Ramon, CA.