APPENDIX B (1 of 2)

FIRST STAGE CONSULTATION DOCUMENT COMMENTS

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
1.	HART-Klassen - Oregon Water Resource Department (OWRD) 3/20/01	Pg. 1 Para 2	Concerned with impact to power generation of varying the flows at each development and subsequent economic impact.	PacifiCorp will propose in the final license application flows that consider a variety of resources including generation.
2.	HART-Klassen - OWRD 3/20/01	Pg. 1 Para 2	Understanding of economic impact of various alternatives (e. g. fish ladders) related to length of license.	See Socioeconomic Study 7.2 - *Analysis of Project Effects on the Socioeconomic Environment*
3.	HART-Klassen - OWRD 3/20/01	Pg. 1 Para 2	Public benefits of alternatives at each development, including value of the projects electric generation.	See Socioeconomic Study 7.2 - *Analysis of Project Effects on the Socioeconomic Environment*
4.	HART-Klassen - OWRD 3/20/01	Pg. 1 Para 2	Wants sufficient info to ensure that water use does not exceed authorized amounts.	Compliance with current FERC license minimum instream flows will be described in draft and final applications.
5.	HART-Klassen - OWRD 3/20/01	Pg. 1 Para 2	East Side development at the Link River Dam is authorized for 1150 cfs but FSCD reports 1200 cfs is used; West Side development at the Link River Dam is authorized for 205 cfs but the FSCD reports 250 cfs; J.C. Boyle diversion is authorized for 2500 cfs, but FSCD reports 3000 cfs.	The values identified for each facility are the maximum hydraulic capacities and do not reflect the authorized amount.
6.	HART – Houck - Oregon Parks & Recreation (OPR) 3/8/01	Pg.1 Para 2	Address intentions to conduct land exchanges with BLM.	BLM has expressed interest in land exchange or purchase for PacifiCorp's Klamath River Ranch lands (non-project lands). This interest will be documented in the BLM Recreation Plan and EIS being developed for the Management of the Wild and Scenic River stretch between JC Boyle and Copco Reservoir. PacifiCorp has indicated their interest but is also looking at other options including the possibility of a market sale. PacifiCorp would also like to obtain project lands, which currently are in BLM ownership. In these cases we would also consider possible land exchanges.
7.	HART – Houck - OPR 3/8/01	Pg. 1 Para 3	Add to FSCD section 3.1.5 that in 1988 the 11 miles from the J.C. Boyle Powerhouse to the state line was designated a State Scenic Waterway.	Information will be clarified in the draft license application to FERC.
8.	HART – Shuyler - Oregon State Marine Board (OSMB) 3/16/01	Pg. 1 Para 2	No mention of the Marine Board who has jurisdiction over state waters including the Klamath River, Lake Ewauna, Keno Reservoir and J.C. Boyle Reservoir.	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
9.	HART – Shuyler - OSMB 3/16/01	Pg. 1 Para 5	Possible expansion of the recreation user study in FSCD sec.10.2.5. to include visitor services, site and facility maintenance and repair, and a review of site security and enforcement activities.	These issues are addressed in the recreation studies and will be discussed in the Recreation Resource Management Plan.
10.	HART – Shuyler - OSMB 3/16/01	Pg. 2 Para 6	How would changes in the flow regimes affect reservoir recreation?	Impacts of license-proposed flows related to reservoir recreation will be described in draft and final license applications.
11.	Oregon Department of Fish & Wildlife (ODFW) – Stuart 3/19/01	Pg. 1 Para 2	FSCD lacks detailed descriptions of existing conditions, affected resources, and proposed studies.	Comment noted.
12.	ODFW – Stuart 3/19/01	Pg. 1 Para 2	Proposed compilation of plant communities with wildlife habitat features that would help determine the effects of ongoing project operations should have been done prior to the FSCD.	Comment noted. The referenced study is much more than a compilation of existing information; it requires a substantial effort including fieldwork.
13.	ODFW – Stuart 3/19/01	Pg. 1 Para 2	FSCD contains limited information on the hydrology of the Klamath River.	Comment noted. Additional information will be presented in the license application.
14.	ODFW – Stuart 3/19/01	Pg. 1 Para 2	Water quality studies are insufficient.	PacifiCorp has increased the number and type of water quality studies.
15.	ODFW – Stuart 3/19/01	Pg. 2 Para 2	Need to conduct studies that encompass the project boundary and beyond.	PacifiCorp's study area varies according to each specific study. It is based on Project impacts on studied resource. It may include areas outside of FERC boundary.
16.	ODFW – Stuart 3/19/01 Attachment A Recommended Study.	Pg. 7 Para 1.1	Evaluate upstream fish passage to restore anadromous fish to historic habitat in the Upper Klamath Basin above Iron Gate Dam and reconnect resident trout populations throughout project reaches.	See study 1.10 *Fish Passage Planning and Evaluation*.
17.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 7 Para 1.1	Assess options for fish passage including one or more dam removals.	Dam removal is being considered as an alternative for fish passage.
18.	ODFW – Stuart 3/19/01 Concern	Pg. 9 Para 4	Concerns with PacifiCorp's approach to evaluating fish passage.	Comment noted.
19.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 11 Para 2.1	Evaluate downstream fish passage/entrainment in power canals at J.C. Boyle Dam, Copco1 and 2 and Iron Gate for anadromous fish restoration to the Upper Klamath Basin.	Will assess likelihood of entrainment based on fisheries assessment and habitat conditions. Will estimate turbine mortality percentage. Will review entrainment reduction measures. Study under discussion.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
20.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 13 Para 3.1	Summarize and analyze hydrology and project operations in the Klamath River Basin to evaluate scenarios to minimize project impacts.	Project impacts on hydrology will be included in the Water Use and Quality technical report and draft and final applications. See study 1.4 *Analysis of Project Effects on Hydrology.*
21.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 13 Para 3.1	Conduct a sediment budget study to evaluate sediment storage behind dams and bedload changes below dams.	PacifiCorp will conduct a bathymetric study in the Project reservoirs. Results of reservoir bathymetric studies will be presented in the water quality study report and draft and final application. Bedload changes will be addressed. See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*.
22.	ODFW – Stuart 3/19/01 Concern	Pg. 14 Para 1	PacifiCorp's operational flexibility with BOR is unclear.	For a description of the PacifiCorp/BOR operational relationship, see license application Exhibit B.
23.	ODFW – Stuart 3/19/01 Concern	Pg. 14 Para 5	PacifiCorp has indirectly proposed to evaluate hydrologic regime of the basin.	Hydrologic information will be addressed through study 1.4 *Analysis of Project Effects on Hydrology.*
24.	ODFW – Stuart 3/19/01 Concern	Pg. 15 Para 1	Salt Caves IFIM Study was inappropriately conducted and IFIM data doesn't properly evaluate the impacts of the project on basin hydrology through project storage and sporadic releases.	PacifiCorp is conducting instream flow studies. See study 1.8 *Instream Flow Scoping Plan* and study 1.12 *Instream Flow Analysis.*
25.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 17 Para 4.1	Identify seasonal minimum flows in all river reaches.	This information will be clearly laid out in table form in the draft and final application. The table will include a list of all FERC minimum flows in the bypass reaches as well as those reaches that do not have FERC minimum flows but are stipulated in less formal agreements with other agencies.
26.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 19 Para 5.1	Identify ramp rates, particularly for the Link River bypass reach and J.C. Boyle bypass and full flow reaches, for both normal operations and during power outages and start-ups. The existing 9 inches per hour ramping rate below J.C. Boyle, a peaking facility, have impacts on resident trout populations and other important aquatic life below the project.	This information will be clearly described in the draft and final application. Ramp rate effects and potential modifications to ramp rates will be assessed as described in study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, and Copco No. 2 Dam*.
27.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 22 Para 6.1	Conduct a comprehensive water quality study.	See studies 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 for detailed descriptions of water quality studies to be conducted by PacifiCorp. Analysis of Project impacts on water quality will be included in the Water Use and Quality technical report and draft and final applications.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
28.	ODFW – Stuart 3/19/01 Concern	Pg. 22 Para 6.2	Water quality issues pertaining to facilities and operations impact fish populations or amphibians and their habitat.	See studies 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 for detailed descriptions of water quality studies to be conducted by PacifiCorp. A detailed analysis of Project effects on water quality will be included in the Water Use and Quality technical report and draft and final applications.
29.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 26 Para 7.1	Habitat Surveys: conduct an inventory of existing and potential habitat for each anadromous species within the project-affected reaches and in the upper basin above Upper Klamath Lake.	Habitat will be assessed. See study 1.10 *Fish Passage Planning and Evaluation*.
30.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 28 Para 8.1	Conduct native trout, sucker and wild fish surveys focused on relative abundance, migration, and project impacts. Assess stocks for anadromous species that could be proposed for reintroduction.	See studies 1.9 *Fisheries Assessment* and 1.10 *Fish Passage Planning and Evaluation*.
31.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 30 Para 9.1	Assessment of project impacts to terrestrial and botanical resources. Evaluate spread of noxious weeds and exotic plants in project vicinity.	An assessment of noxious weeds has been added. AND PacifiCorp will evaluate spread of noxious weeds and exotic plants following the noxious weed inventory.
32.	ODFW – Stuart 3/19/01 Concern	Pg. 31 Para 1	Noxious weeds were barely mentioned in FSCD.	PacifiCorp is completing study 2.7 *Noxious Week Inventory*.
33.	ODFW – Stuart 3/19/01 Recommended Study	Pg. 35 Para 10.1	Assess accumulative impacts of the Klamath Hydro Project.	Within the NEPA process, FERC may consider a cumulative impacts analysis.
34.	ODFW – Stuart 3/19/01	Pg. 36	PacifiCorp needs to clarify the contract with the BOR for the operation and release of water at Link River Dam and Iron Gate Dam, and has implications for responsibility to ESA and 401-water quality compliance.	For a description of the PacifiCorp/BOR operational relationship, see license application Exhibit B.
35.	ODFW – Stuart 3/19/01	Pg. 36	ODFW is concerned that the complexity and magnitude of the project would be better served by using the Alternative or Collaborative Process instead of the FERC Traditional Process.	PacifiCorp shifted to a more collaborative process in January 2001.
36.	ODFW – Stuart 3/19/01	Pg. 37	Fish passage needs to encompass all facilities, reservoirs, and water quality throughout all reaches. Sediment study needs to incorporate an area larger than	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
			simply the "project area" and must include sediment sources above the project, tributaries, and an analysis of impacted river reaches well below the project, to the point of undetectable impact.	
37.	ODFW – Stuart 3/19/01	Pg. 37 FSCD 5.0 and 6.0	Limiting some studies to one year could affect the ability to adequately complete some studies. Suggests a contingency plan to accommodate through the years 2002 and 2003 is necessary.	Same studies will be conducted in 2002 and possibly 2003.
38.	ODFW – Stuart 3/19/01	Pg. 37 FSCD 5.1.1 Para 1 Table 5-1	Several resident lamprey species considered present in the upper Klamath Basin are missing. Scientific name for Pacific Lamprey is Lampetra tridentata.	Comment noted.
39.	ODFW – Stuart 3/19/01	Pg. 37 FSCD 5.1.2.4 Para 4	Stating that J.C. Boyle is the most productive largemouth bass fishery appears to be a misstatement of information from ODFW.	Comment noted.
40.	ODFW – Stuart 3/19/01	Pg. 37 FSCD 5.1.2.5 Para 4	Where's the reference to the habitat inventory that would support the statement that there is lack of stranding habitat? What data support s the position that load factoring of this project in the reach doesn't cause stranding?	New information regarding this issue is being collected through the study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
41.	ODFW – Stuart 3/19/01	Pg. 37 FSCD 5.1.2.9 Para 1	A detailed discussion of steelhead and spring Chinook salmon habitat in the mainstem river and tributaries above Iron Gate Dam if passage were not a concern is necessary to understand the issue of water quality limitations and how they relate to the Klamath River and it's fisheries.	See study 1.10 *Fish Passage Planning and Evaluation.*
42.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.2.1 Para 1	If neither BOR nor PacifiCorp need the Keno Dam, why not remove the fish passage barrier?	The Keno dam provides operational benefit to both BOR and PacifiCorp.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
43.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.2.2	J.C. Boyle Reservoir - There is no discussion of the studies conducted on redband trout populations. Fluctuations likely affect redband life history and population characteristics.	Previous ODFW studies will be included in developing the fisheries assessment for JC Boyle Reservoir.
44.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.3.2 Para 1	Must address flow impacts.	Impacts will be described in Exhibit E of the license application.
45.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.3.3	Downstream from J.C. Boyle Dam - ODFW suggests PacifiCorp staff read the ODFW testimony provided by Louis Fredd, John Fortune and Dave Buchanan for the proposed Salt Cave Hydroelectric Project (1991).	Comment noted.
46.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.4	Ramping operations are not discussed in the context of riparian areas and related impacts to hydrologic or biologic resources.	See studies 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam* and 2.2 *Wetland and Riparian Plant Community Characterization.*
47.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.4.1	The rate of change for ramp rates below Link River Dam appears incorrect. Is the rate of ramp 20cfs per 5 minutes, which equates to 120 cfs per 30 minutes? In addition, what level of salvage actions would be expected to occur and under what operations and environmental factors would lead to its implementation that would lead to the conclusion that ramping would not longer be a concern at Link River dam?	Yes. See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.* PacifiCorp conducts fish salvage operations downstream of the dam whenever spill is reduced below 300 cfs.
48.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.4.2 Para 1	A ramp rate will be proposed in the license, but does not provide evidence to support the proposed ramp rates or the affects of ramping on this reach. Therefore, what is the biological basis for establishing a ramp rate and what is the effect of ramping on the fisheries of this reach including trout, suckers, etc?	PacifiCorp will use the results from study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam* to help establish appropriate ramp rates.
49.	ODFW – Stuart 3/19/01	Pg. 38 FSCD 5.3.4.4	Downstream from J.C. Boyle Powerhouse - Riparian vegetation was not discussed as to affects of ramping of the development and maintenance of vegetative components. Substantial information supports that vegetated areas are very important supporting greater abundance of fish species than non-vegetated areas.	Comment noted. PM&Es will be developed in the draft license application and the need for a comprehensive mitigation plan will be assessed at that time. The relationship between ramping and riparian communities will be assessed in study 2.2 *Wetland and Riparian Plant Community*

Num.	Agency	Page	Comment Summary	Response Summary
			Riparian vegetation communities provide important instream habitat components such as large wood, coarse wood, bank stabilization, increased water storage capacity, thermal buffering, and cover (ODFW 1997). How does ramping affect riparian communities, and the fisheries, in this reach of the river?	*Characterization* and in the draft license application.
50.	ODFW – Stuart 3/19/01	Pg. 39 FSCD 5.3.5	Upstream Fish Passage - Based on current standards for fish ladders in the state of Oregon and California, which of the project dams are in compliance/non-compliance with existing standards?	Information will be collected as part of study 1.10 *Fish Passage Planning and Evaluation.*
51.	ODFW – Stuart 3/19/01	Pg. 39 FSCD 5.3.6.	Downstream Fish Passage - Need to include discussion and evaluation of surface water movement in the reservoirs.	Study is under consideration.
52.	ODFW – Stuart 3/19/01	Pg. 39 FSCD 5.3.8.	Water Quality - PacifiCorp states that the only relevant issue of water quality related to fisheries that the company can control is the amount of water released into bypass reaches of J.C. Boyle. What about the bypass reach for Eastside and Westside powerhouses? This statement is refuted by ODFW staff testimony for the proposed Salt Caves project.	Water quality in the bypass reach for Eastside and Westside is being addressed in studies 1.1, 1.2, 1.3, 1.4, 1.6 and 1.11.
53.	ODFW – Stuart 3/19/01	Pg. 39 FSCD 5.5.1.1 Para 1	The Keno reach needs to be assessed for biological impacts from ramping.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
54.	ODFW – Stuart 3/19/01	Pg. 39 FSCD 5.5.1.2, Para 1	If PacifiCorp wishes to pursue Phabsim modeling, ODFW recommends that PacifiCorp convene agency personnel and university experts. Onsite visits, office discussions, and additional research will be necessary to determine additional data needs, data analysis, and development of appropriate data recommendations for all parameters of Phabsim modeling.	See studies 1.8 *Instream Flow Scoping Plan* and 1.12 *Instream Flow Analysis.*
55.	ODFW – Stuart 3/19/01	Pg. 39 FSCD 8.0	No mention is made of the project area for consumptive and non-consumptive wildlife recreation activities (FSCD 8-5). Recreation is not described very well from a fish and wildlife perspective and should include 1) effects of project operations on a quality fish	Duly noted. This information will be included in future documents including draft and final applications.

Num.	Agency	Page	Comment Summary	Response Summary
			experience, 20 access in the project area via vehicle, foot and boat, and 30 reservoir angling and access.	
56.	Oregon Department of Environmental Quality (ODEQ) - DeVito 3/19/01	Pg. 1 Para 2	FSCD lacks detailed description of existing conditions, affected resources, and proposed studies.	Comment noted.
57.	ODEQ - DeVito 3/19/01	Pg. 1 Para 3	More study plans will need to be forthcoming such that a Federal Clean Water Act Section 401 can be supported.	PacifiCorp has worked with stakeholders including ODEQ so the necessary water quality studies will be completed.
58.	ODEQ - DeVito 3/19/01	Attach. A Part 2 FSCD 1.2	Project impacts may be experienced outside the Project area and beyond the FERC boundaries. PacifiCorp needs to extend its protection and enhancement.	PacifiCorp's study area varies according to each specific study. It is based on Project impacts on studied resource. It may include areas outside of FERC boundary. PacifiCorp will consider areas outside the FERC boundary for potential PM&E measures.
59.	ODEQ - DeVito 3/19/01	Attach. A FSCD 1.4	Suggests using a collaborative approach.	PacifiCorp shifted to a more collaborative process in January 2001.
60.	ODEQ - DeVito 3/19/01	Attach. A FSCD 1.4(1)	What is meant by "best investment for the resource?"	To consider those PMEs that specifically address the needs - the limiting factors of the resource.
61.	ODEQ - DeVito 3/19/01	Attach. A FSCD 1.4.	How does choosing the traditional process facilitate PacifiCorp's stated commitment?	It is a structured process that should help bring clarity to a complex relicensing. The revised collaborative process goes even further in providing accurate and timely information to the process stakeholders.
62.	ODEQ - DeVito 3/19/01	Attach. A FSCD 1.5	Suggests that an Internet website also be provided by PacifiCorp tracking relicensing events, study plans, study reports, etc. to provide better information, involvement, and earlier identification and resolution of issues.	PacifiCorp established an internet website to assist relicensing participants in the process.
63.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.1.	Does the contract between USBR and PacifiCorp provide PacifiCorp with any operational flexibility? If so, how much?	No, please see Exhibit B of the license application.
64.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.1.	Does PacifiCorp have a responsibility or agreement to buffer inflows and outflows from the USBR irrigation Project? If so, what is it and is it tied to the contractual agreement for the Link River Dam or other contract? Does PacifiCorp derive benefit from buffering the flows with Keno Dam?	See Exhibit B of the license application for the BOR/PacifiCorp operational relationship.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
65.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.2.	1) Why and where does PacifiCorp anticipate boundary revision? 2) Does PacifiCorp anticipate that Link River Dam will be included in a new FERC boundary? 3) How do FERC boundary lines relate to resource analysis area? 4) Would a modified FERC boundary potentially result in a modified resource analysis area? Please elaborate.	1) Potentially the FERC boundary may need to be expanded to include new PM&E areas or sites. Boundary revisions will be first proposed in the draft application. 2) No 3) They help define the area of impact of the Project. 4) Possibly. If any area outside FERC boundary is under review for PM&E development.
66.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.3.	PacifiCorp should provide accurate quantification of the flow, quality, and seasonality of these inputs to Keno Reservoir from the Lost River and Klamath Straits Drain since it will be vital to parsing out Project versus non-Project impacts on water quality and beneficial uses.	PacifiCorp will include such information as available from other resources in the analysis of water quality and hydrology.
67.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.3.	ODEQ requests copies of any and all contractual agreements that PacifiCorp has with USBR or other entities that place limits on the range of PacifiCorp's ability to operate or manage the Project. How will renegotiations of Link River and any other USBR contract fit with the FERC relicensing process?	See Exhibit B of the license application.
68.	ODEQ - DeVito 3/19/01	Attach. A FSCD Fig. 2-2.	The Keno Reservoir should have an input arrow for the Klamath Straits Drain. The Spencer Creek arrow should be shown entering J.C. Boyle Res. As opposed to a river segment upstream of the reservoir. Diversions from Spring Creek to Fall Creek should be depicted.	Comment noted.
69.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.4	Project facilities are at scale too small to discern diagram details and text.	Comment noted.
70.	ODEQ - DeVito 3/19/01	Attach. A FSCD Table 2-1.	Information on diversion lengths and canal dimensions would be helpful, including diversions from Spring Creek.	Diversion lengths will be included in the table mentioned above in the Hydrology study. Canal dimensions will be included on engineering drawings in the draft and final applications. Information on the Spring Creek diversion will be provided in the Hydrology Study report and draft and final applications.
71.	ODEQ - DeVito 3/19/01	Attach. A FSCD Table 2-2.	What is the range of depth that water may be withdrawn from each of the reservoirs?	This information will be presented in the Hydrology study report and draft and final applications.
72.	ODEQ - DeVito 3/19/01	Attach. A FSCD	There is a reference to section 2.4.8 for discussion of the USBR contract for Link River Dam operations.	See Exhibit B of the license application.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
		2.4.1.2	However, section 2.4.8 discusses transmission lines. Please provide a copy of the contract.	
73.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.4.1.2.	In the 3rd paragraph it is indicated that ODFW and PacifiCorp have agreed upon a minimum instream flow below Link River Dam of 90 cfs. PacifiCorp tour of 9/26/00 the dam appeared to be much less than 90 cfs. How is the flow being released from the dam measured?	Spillgate rating curve
74.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.4.2.2.	What are PacifiCorp's future plans for developing hydropower or otherwise modifying facilities at Keno Dam? And What is the nature of PacifiCorp's responsibility, if any, to the irrigators or USBR to maintain a constant reservoir level or to maintain the reach behind the dam as a reservoir?	Currently there are no plans to install generation facilities or modify Keno Dam. This information will be presented in the Hydrology study report and draft and final applications.
75.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.4.3.2.	At the maximum allowable ramp rate of 9-inches per hour, how long does it take to up and down ramp with both turbines? What time of day do these ramping events commence?	This information will be presented in the Hydrology study report and draft and final applications.
76.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.4.7.1.	Diagram on pg. A-20 of Appendix A shows Fall Creek dam and diversion but not the Spring Creek dam and diversion. Does the Spring Creek Dam and diversion lie within the FERC boundary? Is water diverted to the Project from Jenny Creek, also? How much flow is diverted from Spring Creek (and Jenny Creek if applicable) versus released downstream? Please provide a non-reduced, detailed diagram of this and other developments clearly depicting all significant facilities at each development.	This information will be presented in the Hydrology study report and draft and final applications.
77.	ODEQ - DeVito 3/19/01	Attach. A FSCD 2.5.2.	In the second paragraph the Klamath Straits Drain is incorrectly referred to as a diversion. How much flow does the North Canal route away from Keno Reservoir?	200 cfs
78.	ODEQ - DeVito 3/19/01	Attach. A FSCD 3.1.3	It is not appropriate to use the single study performed by Ayres Associates (1999) when discussing the river's geomorphic response to Project operations as the two areas being discussed (Project area and Ayres Assoc. study area) are different.	PacifiCorp is completing study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* to address geomorphic issues.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
79.	ODEQ - DeVito 3/19/01	Attach. A FSCD 3.2.1.	Ady Canal does not discharge to Keno Reservoir. However, the Klamath Straits Drain, not listed, does.	Comment noted. Further discussion of Reclamation project operations will be discussed in the Hydrology study report and draft and final applications.
80.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.1.	The acceptability of water quality data collected or referenced in support of a 401-certification application will be dependent upon the quality assurance used in collecting and processing the data and its compatibility with ODEQ protocols. http://www. oregon-plan. org	Approved QA/QC methods are included in the relevant water quality studies.
81.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.1.2.	The citations for the collection and summarization of water quality data from Keno Reservoir by USBR (1975) and U.S. Army Corps of Engineers (1979) are not included in the References (Literature Cited) section.	Comment noted.
82.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.1.2.	ODEQ is currently monitoring water quality at the sites identified in the last paragraph; sampling did NOT discontinue in 1995 and has been uninterrupted. Also monitoring effort in the early 1990's that included numerous sampling locations with Keno Reservoir.	Comment noted.
83.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.3.	In addition to water temperature, dissolved solids, sediments, turbidity, nutrients, and bacteria, the factors listed also commonly impact pH and toxics such as unionized ammonia.	Comment noted.
84.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.3.1 Para 2	This unionized ammonia is likely another contributor to fish die-offs.	Comment noted.
85.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.3.2 Para 1	In addition to the water column input of high organic matter and nutrients from Upper Klamath Lake to Keno Reservoir, the sediments within Keno Reservoir have very high organic content.	Comment noted. – See study 1.13 *Determination of Sediment Oxygen Demand in Selected Project Reservoirs.*
86.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.3.2 Para 3	To what extent does Keno Reservoir stratify? If Keno Reservoir does exert at least weak stratification during the summer, is the stratification at times interrupted by periods of mixing? What are the timeframes of stratification within J.C. Boyle and Keno Reservoirs?	Such water quality information will be presented in the Aquatics Final Technical Report (FTR).

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
87.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.2.3.2 Para 4	Similar to the reservoirs of Copco and Iron Gate, ODEQ data for Keno Reservoir indicates that samples collected near the bottom are also often anoxic during the summer.	Comment noted.
88.	ODEQ - DeVito 3/19/01	Attach. A FSCD Figures 4-5,6,7	The time period between grab samples was variable, yet they are distributed across the x-axes of these figures as if they were equal periods. Connecting the discrete grab sample data points is somewhat misleading in that it implies continuous sampling. Data collection at times intermediate to the actually collected, may or may not fall on or near the connecting lines. Not so much with the reservoir tailrace discharges, but with the Klamath River upstream of Shovel Creek, collection time-of-day could significantly effect sampling results for temperature, dissolved oxygen and pH.	Comment noted. See study 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area.*
89.	ODEQ - DeVito 3/19/01	Attach. A FSCD Figures 4-8 and 4-9.	Is temperature and dissolved oxygen depth profiles available for Keno Reservoir also?	Such water quality information will be presented in the Aquatics FTR.
90.	ODEQ - DeVito 3/19/01	Attach. A FSCD Figure 4-10.	Are pH depth profiles available for each of the reservoirs?	Such water quality information will be presented in the Aquatics FTR.
91.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.3.2.	Two additional designated beneficial uses to add to the Oregon list are Commercial Navigation & Transportation and Hydropower.	Comment noted.
92.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.3.2.	In the second sentence of the 3rd paragraph it is stated that ODEQ and CSWRCD "will" issue 401 certifications. It should be noted that issuance of 401 certifications is a discretionary action. Issuance will depend primarily on PacifiCorp's efforts to conduct needed studies and propose sufficient mitigation. It should also be noted that tribal waters, in addition to water of the States of Oregon and California, might also be impacted by the Project. Thus, EPA, or tribes with 401	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			delegation, may request or require that 401 certification applications also be submitted to them, as well.	
93.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.3.2 Last Para	It should be noted that TMDL completion target dates are targets; many uncertainties and complications may result in their later completion.	Comment noted.
94.	ODEQ - DeVito 3/19/01	Attach. A FSCD Table 4-1.	Many waterbody segments within the Project do not have sufficient data to determine compliance with each and every water quality standard. Thus, the 1998 303(d) list should not be looked upon as a comprehensive listing of all waterbody segments which violate state water quality standards. The 303(d) list is due to be updated by April 1, 2002 and again two years thereafter. *See further notes in letter.*	Comment noted.
95.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.	In numerous locations of the FSCD it is suggested that Project operations have limited control over activities that can affect water quality because of the limited active storage in reservoirs relative to river flow volume. This is not entirely accurate. *See further notes in letter.*	Project water quality impacts will be described in Exhibit E of the license application and the application to ODEQ.
96.	ODEQ - DeVito 3/19/01	Attach. A FSCD Table 4-2.	The base assumption of the Project Operations Control column of this table is that no structural operational changes will be made. As indicated earlier, structural changes may be needed to comply with water quality standards, especially is there is only limited water quality mitigation available via non-structural operational changes.	PacifiCorp has no plans for major structural changes to project facilities. However, consideration of these changes may be required to meet PM&E measures.
97.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.1.1.	Need discussion regarding temperatures at the Fall Creek development including impacts to Spring Creek and Jenny Creek.	Information will be provided in the Aquatics FTR or Exhibit E of the license application.
98.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.1.2.	Need discussion regarding temperatures in Keno Reservoir.	Information will be provided in the Aquatics FTR or Exhibit E of the license application.
99.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.2.2.	Need discussion regarding dissolved oxygen at the Fall Creek development including impacts to Spring Creek and Jenny Creek.	Information will be provided in the Aquatics FTR or Exhibit E of the license application.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
100.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.3.	Although not identified here, pH is a problem within Link River, Keno Reservoir and J.C. Boyle Reservoir. *See further notes in letter.*	Comment noted. Information will be provided in the Aquatics FTR or Exhibit E of the license application.
101.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.4.	It is indicated in the 2nd paragraph that in an earlier study that the reservoirs *generally* act as sinks for both nitrogen and phosphorus. What is meant by generally? What is the basis of this conclusion? Are there other studies available that discuss Project affects on nutrient cycling? *See further notes and questions in letter.*	Information will be provided in the Aquatics FTR or Exhibit E of the license application.
102.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.5.	How do Project reservoir operations affect turbidity and suspended solids within and immediately downstream of the reservoirs? How do ramping (particularly up-ramping) operations below J.C. Boyle affect turbidity and total suspended solids? How do spilling operations affect turbidity and suspended solids below the dams?	Information will be provided in the Aquatics FTR or Exhibit E of the license application.
103.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.4.6.	Has total dissolved gas been evaluated during spill at any of the facilities? What is the measured range of total dissolved solids concentration that is being referenced here? Have toxics been evaluated in the reservoirs via sediment, water column of fish tissue sampling? *See further notes in letter.*	Information will be provided in the Aquatics FTR or Exhibit E of the license application.
104.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5	Remember that ODEQ and CWRCB, EPA and/or tribes with 401 authority may require 401 certifications if they determine that the Project may impact tribal waters.	Comment noted.
105.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.1.1.	The water quality database described in this section should have been compiled and processed prior to filing the FSCD.	Comment noted.
106.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.1.2.	ODEQ is concerned with the proposed schedule in terms of lost time. *See further notes in letter.*	Comment noted.
107.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.1.3.	Why is it assumed that the existing water quality data will adequately characterize water quality conditions in the Project area? *See further notes in letter.*	Existing data will help characterize water quality conditions; PacifiCorp is conducting additional studies.

Num.	Agency	Page	Comment Summary	Response Summary
108.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.1.4.	How will Project-related impacts be identified such that appropriate studies may be planned?	Through collaborative relicensing process.
109.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.2.	ODEQ encourages studying the water quality affects of routine maintenance activities and identifying alternate maintenance methods that are more protective of water quality. However, we caution that interpretation and extrapolation of the maintenance study results should be conservatively exercised due to the limited duration, season, scale, location, and water quality conditions under which they are performed.	See study 1.6 *Monitoring and Analysis of Water Quality During Project Maintenance Operations.*
110.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.3.1.	In this and other sections throughout the FSCD there appears to be a limited perception that only operational changes should be considered for mitigation of Project-related water quality impacts. *See further notes in letter.*	Comment noted.
111.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.3.2.	What quality assurance protocols are being used by PacifiCorp in its water quality sampling and monitoring? Other than temperature loggers, why is PacifiCorp not also surveying contemporary water quality in the impoundment behind Keno Dam?	See specific studies for QA/QC methods; see studies 1.1, 1.2, 1.13, and 1.14 for Keno information.
112.	ODEQ - DeVito 3/19/01	Attach. A FSCD 4.5.3.3 and 4.5.3.4.	The key assumption that "data assessment will identify and focus any additional measures needed for potential Project-related nutrient impacts" is faulty. It is not possible to predict with confidence, how the Project could otherwise affect nutrient conditions under alternative operations or facility configurations based upon nutrient data collected under conditions of existing operations and facilities. *See further notes in letter.*	Comment noted.
113.	ODEQ - DeVito 3/19/01	Attach. A FSCD Figure 5-1.	What is the source of this Table? Are Project-segment-specific life stage periodicity charts available for salmonid and TES species?	The Aquatic Working Group has revised the table. Yes it is available; see Fish Periodicity Table developed in study 1.10 *Fish Passage Planning and Evaluation.*
114.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.1.2.1	Do redband trout spawn and rear within the Link River? If so, where and when (including fry emergence)?	Fishery work is being conducted in this area. See results of Study 1.9 *Fisheries Assessment*.
115.	ODEQ - DeVito	Attach. A	In addition to the noted sources contributing to poor	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/19/01	FSCD 5.1.2.2	water quality in Keno Reservoir, others include domestic wastewater discharges from South Suburban Sanitary District, domestic and industrial discharges from Collins Forest Products, and industrial discharge and log handling and storage at Columbia Plywood. Also not recognized here is that impounding water behind Keno Dam likely contributes very quite to poor water quality that is experienced in the reservoir.	
116.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.1.2.3	At what times of year do redband trout spawn, emerge, and rear between Keno Dam and J.C. Boyle Reservoir (Keno Reach)? At what locations? It is indicated that the turbulence of the Keno Reach maintains adequate dissolved oxygen for trout. What levels of dissolved oxygen are experienced seasonally and what locations? Do the dissolved oxygen levels meet the Oregon salmonid spawning criteria at all locations and times that spawning and emergence take place? Do dissolved oxygen levels meet the salmonid rearing criteria the remainder of the year?	Much of this information will be presented in the Aquatics FTR or Exhibit E of the license application. See studies 1.3 *Water Quality Analysis and Modeling Process* and 1.10 *Fish Passage Planning and Evaluation.*
117.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.1.2.4	At what locations (vertically) within the J.C. Boyle reservoir do redband trout occur on a seasonal basis in relation to seasonal dissolved oxygen and temperature levels? It is indicated in the 5th paragraph that Spencer Creek is of better water quality than the mainstem Klamath River throughout the year. What is the specific seasonal character of Spencer Creek water quality input to J.C. Boyle Reservoir?	Unknown.
118.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.1.2.5	At what times of year do redband trout spawn, emerge, and rear within the J.C. Boyle bypass reach and the J.C. Boyle full flow reach? At what locations?	See study 1.10 *Fish Passage Planning and Evaluation.*
119.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.1.2.10	What is the minimum flow below the Spring Creek diversion? How much flow is diverted from Spring Creek? What are the fish resource conditions of Spring Creek above and below the diversion point?	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.
120.	ODEQ - DeVito 3/19/01	Attach. A FSCD	In the 2nd paragraph it is indicated that ODEQ is focused on compliance with CWA Section 401	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
		5.2.4	*guidelines.* This should read *requirements.* ODEQ also has objectives that relate to the protection and enhancement of water quality per the statewide (OAR 340-41) and Klamath Basin (OAR 340-41-962 through 975). This includes protection and enhancement of designated beneficial uses including fish resources.	
121.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.3.1	The list does not include deposition and transport of sediment. Impounding water behind dams may preclude downstream transport of critical sediment and result in deposition behind the dams, significantly impacting fish and aquatic organism habitats.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
122.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.3.5	In the 6th paragraph there is discussion regarding the Klamath River Basin Fish Management Plan (ODFW, 1997), which indicates that "because of existing habitat problems, loss of native stocks, risk of disease introduction, and potential competition with remaining native redband trout, ODFW does not believe that it would be feasible or prudent to attempt to re-establish anadromous fish runs in the Klamath River, now or in the near future. " This statement, if taken out of context, can be misleading. Not mentioned in the FSCD is that the Klamath Basin Fish Plan goes on to state "ODFW will support such reintroduction if and when the biological and physical questions are addressed and show that such actions are prudent and feasible: and, "ODFW would support future studies addressing that feasibility and the habitat restoration that would be conducive to successful reintroduction. " *See more in the letter.*	Comment noted.
123.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.3.8	The 1st paragraph appears to minimize the Project's potential influence on upper Klamath River poor water quality. Although water quality of the upper Klamath River is greatly influenced by the quality of water which emanates from Upper Klamath Lake, the Klamath Straits Drain, and from other sources, the Project's operations and facilities likely exacerbate this	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			poor quality in several ways. For instance, increased retention time behind Project dams may allow for increased warming; increased deposition of sediments, which may include oxygen demanding and/or toxic materials; increased exposure of the retained water to sediment oxygen demand; phytoplankton blooms which may contribute to harmful pH and dissolved oxygen swings and extremes; potential bioaccumulation of toxics; in reservoir and downstream turbidity problems; and seasonally high downstream nutrient discharges. Dewatering of bypass reaches can cause reduced velocities and depths resulting in increased stream warming; increased periphyton growth; increased carbon dioxide uptake resulting in higher pH levels; and harmful dissolved oxygen swings and extremes. 2nd paragraph appears to minimize the potential measures by which the Project may otherwise influence water quality for the better. Although studies are needed to actually verify how the Project is indeed impacting water quality and means by which it may improve water quality, there are several potential alternatives that should be considered. In addition to the stated variation of water released to the bypass reaches, modifying reservoir, peaking and ramping operations may potentially improve water quality. Besides operational changes, facilities changes such as dam height modification dam removal and reservoir outlet modifications may significantly improve water quality.	
124.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.5.1.1	As mentioned in our comments to section 5.3.8, peaking and ramping operations may significantly affect water quality and adversely impact fish and other aquatic organisms. This study should be expanded to evaluate water quality impacts resultant from such operations and to help develop ramping activities. Additionally, the degree of impact should not be limited to fish alone, but also consider impacts to macroinvertebrates, amphibians, herpetofauna, other	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*

Num.	Agency	Page	Comment Summary	Response Summary
			aquatic and terrestrial organisms, and riparian ecology. The Keno Reach (below J.C. Boyle Dam) ramping should also be evaluated in these same terms.	
125.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.5.1.4.	The ramping study results should also be considered for the development of ramping alternatives that may be necessary to accomplish water quality standards compliance.	Comment noted.
126.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.5.2.1.	The Project also influences flow downstream from the point of diversion on Spring Creek. The instream flow impacts of Spring Creek should be evaluated, too.	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.
127.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.5.2.2.	The water quality assessment briefly mentioned in the 1st paragraph should include evaluation of instream flows in relation to water quality standards compliance. Oregon's water quality standards for temperature, pH, and dissolved oxygen are all based upon the most sensitive beneficial uses, which for these reaches would be protection of redband trout.	See study 1.3 *Water Quality Analysis and Modeling Process.*
128.	ODEQ - DeVito 3/19/01	Attach. A FSCD 5.5.2.4.	The minimum instream flow study results should also be considered for the development of minimum instream flow alternatives that may be necessary to accomplish water quality standards compliance.	See study 1.3 *Water Quality Analysis and Modeling Process.*
129.	ODEQ - DeVito 3/19/01	Attach. A FSCD 8.3.8.	Impounding water behind dams and dewatering of bypass reaches can contribute to excessive alga levels and nuisance conditions. Therefore, PacifiCorp should evaluate whether the Project's facilities and operations are contributing to adverse impacts on these beneficial uses and develop control strategies for attaining compliance where technically and economically practical in accordance with OAR 340-041-150.	See study 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area* and study 1.3 *Water Quality Analysis and Modeling Process.*
130.	ODEQ - DeVito 3/19/01	Attach. A FSCD 8.5.2.2	Since the Project potentially impacts recreational opportunities in the riverine reaches, too, recreationists in these areas should be surveyed as well. The recreational user survey questionnaires should also include questions designed to determine if, and to what degree, nuisance algae conditions exist which impact water contact recreation, aesthetic quality, and fishing	See study 3.2 *Recreation Visitor Surveys*. Recreation surveys are being conducted in Project-affected river reaches. The recreation survey includes questions on the affect of algae conditions on recreation experiences.

Num.	Agency	Page	Comment Summary	Response Summary
			beneficial uses. Nuisance conditions can include, but are not limited to odorous conditions, unsightly conditions, fouling of fishing gear, attraction of annoying insects, and slipping hazards (when deposited on shoreline).	
131.	ODEQ - DeVito 3/19/01	Attach. A FSCD 9.5.2.2	The visual aspect of current and proposed flow regimes mentioned in the 4th paragraph has relevance to Oregon's water quality standards, also OAR 340-041-965(2)(1), states that (referring to water quality) "Aesthetic conditions offensive to the human senses of *sight*, taste, smell, or touch shall not be allowed."	See study 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area.*
132.	ODEQ - DeVito 3/19/01	Study 1	**Temperature Modeling** **Basis:** Stream temperature can have profound effects on organisms that live or reproduce in water. Stream temperature may affect growth, feeding habits, susceptibility to disease, and spawning success. The existence of the Project facilities and operations results in modified streamflow regimes that likely contributes to modified stream temperatures. **Methodology:** ODEQ's Heat Source temperature model should be used for riverine reaches. ODEQ currently maintains the Heat Source methodology and computer programming. PacifiCorp should consult with ODEQ to determine data requirements including needs for continuous temperature monitoring, forward looking infrared (FLIR) temperature sensing, color digital orthoquads, and stream morphology. Modeling of temperature in reservoir reaches would be conducted using a model selected in accordance with the performance criteria described in study item 2.3. A full range of operations and facilities should be modeled including modeling the Project with and without the dams to determine the extent which the Project impacts water temperatures. ODEQ and NCRWQCB also intend to collect data to support Heat Source and reservoir temperature	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			modeling for concurrent development of Klamath River TMDLs. Thus, there is an opportunity for PacifiCorp to coordinate the data collection and modeling effort in a manner that meets the similar objectives of both the relicensing (401 certification) and TMDL processes while minimizing overall resource expenditures and unnecessary redundancy.	
133.	ODEQ - DeVito 3/19/01	Study 2	**Multi-Parameter Water Quality Model** **Basis:** Poor and/or altered water quality chemistry can have profound effects on organisms that live or reproduce in the water. Water quality chemistry may affect growth, feeding habits, susceptibility to disease, and spawning success. Poor summer water quality appears to be strongly correlated with fish kills in the Klamath River. Water quality is a critical parameter that will affect the eventual success of reintroduction effort of anadromous fish into the upper basin (Fishpro 2000). The existence of the Project facilities and operations results in modified streamflow regimes that may be contributing to poor and/or altered water quality. **Methodology:** High resolution numeric water quality models meeting the following performance requirements should be used: • Ability to conduct hydrodynamic simulation and dynamic water quality simulation. • Minimum resolution vertical 2-dimension in reservoir reaches, 1-dimension in shallow river reaches. • Ability to simulate year-round water quality changes in the system. • Ability to simulate low to high stratification. • Ability to conduct dynamic and continuous water quality simulation and appropriate algal blooms. • Full eutrophication, multiple algal species, pH, dissolved oxygen, nutrients, and sediment kinetics	See studies 1.1 *Compilation and Assessment of Existing Water Quality Data*, 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area*, and 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			including sediment oxygen demand, total suspended solids, and turbidity. • Temperature model must incorporate shading topographic shading and complete thermal balance between the reservoirs, river and atmosphere. • Ability to specify multiple outlets for evaluation of selective withdrawal options of the control of in-reservoir and downstream water quality and temperature. Water quality data should be collected as necessary to support the selected numeric water quality model(s) meeting the listed performance requirements and the stated resource goals and objectives. The collection and processing of water quality data shall be afforded quality assurance compatible with ODEQ protocols. ODEQ's water quality monitoring protocols can be found in the *Water Quality Monitoring Technical Guide Book* written for The Oregon Plan for Salmon and Watersheds (1999) and available on the Internet at: http://www.oregon-plan.org. ODEQ and NCRWQCB also intend to collect data to support multi-parameter water quality modeling for concurrent development of TMDLs for portions of the Klamath River. Thus, there is an opportunity for PacifiCorp to coordinate the data collection and modeling effort in a manner that meets the similar objectives of both the relicensing (401 certification) and TMDL processes while minimizing overall resource expenditures and unnecessary redundancy.	
134.	ODEQ - DeVito 3/19/01	Study 3	**Keno Reservoir Bioassay Study** Determine if fish and other aquatic organisms within the reservoir contain toxic pollutants at toxic concentrations or are otherwise demonstrating characteristics of toxic contamination. If aquatic organisms are demonstrated to contain toxic pollutants at toxic concentrations or exhibit characteristics of toxic contamination, then sediments	See study 1.4 *Analysis of Project Effects on Hydrology.*

Num.	Agency	Page	Comment Summary	Response Summary
			should be evaluated for toxicity. **Basis:** The unnatural impoundment of the Klamath River behind Keno Dam slows the velocity of the Klamath River. The reduced flow velocity in Keno Reservoir provides a lower energy environment conducive to greater deposition of fine grain sediments and oxygen-demanding materials. In addition, the existence and operation of the Project's dam and reservoir likely contributes to the documented high temperatures and low dissolved oxygen levels experienced in the reservoir. Potential impact would be the accumulation of organic and inorganic contaminants that may be toxic to fish and aquatic organisms. Current and historic industrial wastewater discharges have taken place into Keno Reservoir, which have possibly contributed toxic pollutants to the reservoir. **Methodology:** Should be determined in consultation with ODEQ and other interested agencies, tribes and parties. Study methodologies should include bioassays and other aquatic life toxicity testing methods. As determined appropriate, sediments and water column toxicity would also be included.	
135.	ODEQ - DeVito 3/19/01	Study 4	**Benthic Macroinvertebrate Study** **Basis:** Benthic Macroinvertebrates (BMIs) are important indicators of stream water quality and ecological integrity. Different species of BMIs are sensitive, to varying degrees, to temperature, dissolved oxygen, sedimentation, scouring, nutrient enrichment, and organic and chemical pollution. Comparisons of BMIs collected at different sites in terms of species composition, diversity, and functional organization can provide an indication of the sites' relative ecological integrity. An assessment of BMIs at key locations can provide an indication of how project facilities and/or	See studies 1.11 *Macroinvertebrates Study* and 1.20 *Spring '2003 Macroinvertebrates Study*.

Num.	Agency	Page	Comment Summary	Response Summary
			operations affect stream health. **Methodology:** Either California's or Oregon's regional adaptations of the U.S. Environmental Protection Agency's "Rapid Bioassessment Protocols for use in Streams or Rivers" (EPA841-D-97-002) would be acceptable. The California State Bioassessment Procedure (CSBP) is available at the following California Department of Fish and Game website: http://www.dfg.ca.gov/cabw/protocols.html. The Oregon's stream macroinvertebrate protocol can be found in *Water Quality Monitoring Technical Guide Book* written for The Oregon Plan for Salmon and Watersheds (1999) and available on the Internet at: http://www.oregon-plan.org. In general, sample sites should include locations sufficient to evaluate Project effects related to bypass reach dewatering, impounding water behind dams, tailrace effects, and peaking operations.	
136.	ODEQ - DeVito 3/19/01	Study 5	**Hydrology and Sediment Transport** **Basis:** An unimpaired flow analysis is needed to determine the natural, historic flow regime that aquatic organisms and riparian habitats evolved in. Such an analysis could be used to identify scenarios of how the individual Project facilities might managed differently to replicate the more natural historic regime, recognizing that other habitat alterations have occurred in the basin. A detailed analysis of daily, weekly, seasonal, and annual hydrographs is needed to assess and distinguish hydrologic alterations attributable to the Project versus USBR's Klamath Irrigation Project and other watershed impacts. This analysis should be done at both the reach and basin scales such that the information may benefit other studies being requested by ODEQ and other agencies. The analysis should also take into account the range of climatic variability representative of the upper Klamath basin. The sediment transport regime (including	See study 1.4 *Analysis of Project Effects on Hydrology* and study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*.

Num.	Agency	Page	Comment Summary	Response Summary
			supply, storage and transport) is tied to the hydrology. Since the hydrologic regime has been altered, it is expected that the sediment transport regime has been altered, too. The extent which the present sediment transport regime differs from that of the natural, historic sediment transport regime should be evaluated, including the extent which the Project facilities and operations contribute to the alteration. Native species in the Klamath River evolved under the seasonal variability of an unregulated river. The Project dams act to truncate the continuity of natural sediment and bedload transport by capturing the materials in the low energy environments of the reservoirs. **Methodology:** Study methodology for sediment transport shall include collection of a minimum of three representative sediment samples from select Project reservoirs (Keno, J.C. Boyle, Copco 1, and Iron Gate) to determine particle size distribution of sediment being trapped behind the dams. Total sediment volume and annual average loading rates shall be calculated for each reservoir by comparing the present day bathymetry to that of pre-inundation. Similarly, component sediment volume and component annual average loading rates shall be calculated for each reservoir by incorporating the particle size distribution data. If problems with data accuracy or compatibility render bathymetric comparisons invalid, bedload transport rating curves will be developed for a range of reservoir inflows. Along with discharge data, these curves will be used to estimate the volume of sediment that is being trapped in project reservoirs. Additional or modified sediment transport study shall be determined in consultation with ODEQ, CSWRCB, ODFW, CDFG, BLM, USFS, tribes, and other interested parties.	
137.	Bureau of Land Management (BLM) -	Pg. 5 Para. 2	No mention is made of BLM's 4(e) authority.	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	T. Raml 3/23/01			
138.	BLM - T. Raml 3/23/01	Pg. 5 Para. 3	BLM recommends that PacifiCorp revise the Project boundary beyond that shown as the FERC boundary.	PacifiCorp may revise the FERC boundary as a result of studies and information gathering.
139.	BLM - T. Raml 3/23/01	Pg. 5 Para 4-9	The FSCD does not meet the intent of 18 CFR 16.8. Specifically, the FSCD's discussion of the following sections of 18 CFR 16.8 is inadequate: 18 CFR 16.8 (b)(ii): The document does not provide clear legible engineering designs of the existing project. The copies are too small and fuzzy. 18 CFR 16.8 (b)(iii): The description of the operational mode, facilities and maintenance is not sufficiently detailed; the reader cannot gain a full understanding of the Project. 18 CFR 16.8 (b)(iv): The document does not include a description of the applicant's existing and proposed environmental protection, mitigation and enhancement plans. 18 CFR 16.8 (b)(v): The document does not include natural flow periodicity, the method used to generate the streamflow data provided, or copies of all records used to derive the flow data. 18 CFR 16.8 (b)(vi): The document does not provide sufficient detail to evaluate proposed studies and methodologies, which would determine effects of the Project on resources.	Comment noted.
140.	BLM - T. Raml 3/23/01	Pg. 6 Para. 2	The document does not provide clear cause and effect relationships between the project and the current condition of resources. Without this discussion, it is not possible to adequately determine the need for proposed studies.	Comment noted.
141.	BLM - T. Raml 3/23/01	Pg. 6 Para 3	The description of operations does not include a discussion of non-compliance with FERC-mandated or NMFS biological opinion flow requirements.	PacifiCorp's compliance record for current FERC license minimum instream flows will be included in the FERC draft and final applications.
142.	BLM - T. Raml 3/23/01	Pg. 6 FSCD 1.4 Para 2	Explain what is meant by "best investment for the resource". Will criteria be developed to make that decision?	To consider those PMEs that specifically addresses the needs - the limiting factors of the resource. PacifiCorp is hopeful that the collaborative process will lead to decisions that benefit related resources.
143.	BLM - T. Raml	Pg. 6	In BLM's opinion, the traditional process does not	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/23/01	FSCD 1.4, Para 6	facilitate commitments to "accommodate the need for better information, greater agency, tribal and interested party involvement and earlier identification and resolution of issues."	
144.	BLM - T. Raml 3/23/01	Pg. 6 FSCD 2.2, Para 1	The current FERC project boundary does not include the entire area directly affected by the project (refer to comment regarding section 2.3). The FERC boundary should be revised to include the high water channel and riparian zone of the entire river reach affected by the project. *See letter for further comments.*	PacifiCorp will consider comment in review of revising FERC Project boundary.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
145.	BLM - T. Raml 3/23/01	Pg. 6 FSCD 2.3, Para 3	The statement that PacifiCorp has "little or no" control of the river's flow regime is misleading. Temporally, project effects on daily and hourly flow regimes are profound, and merit more discussion in this section. Project operations affect weekly flow regimes through the storage and controlled release of daily discharges up to 5.900 cfs (reflecting the active storage capacity of Iron Gate, Copco 1, and J.C. Boyle reservoirs; assuming the volumes of active storage capacity presented in Table 2-1 are correct, and that all active storage capacities are available). The comparison of pre- and post-Iron Gate hydrographs presented in Ayre Associates (1999) suggests that the project may also be affecting seasonal flow patterns. Spatially, it is incorrect to state that project operations only affect "certain locations. " Section 5.3.4 discusses J.C. Boyle ramping and notes that the effects of such operations persist for 22 river miles (the entire length of the reach between J.C. Boyle powerhouse and the Copco facility). Although the effects of project operations are strongest in the 6.7 miles of mainstem bypass reaches, flow regulation affects persist to varying degrees (depending on project operations and season) from RM 128.5 to 256 (discussed in Balance Hydrologics, 1996 and section 5.3.4.6), and arguably from the river mouth to RM 256. Additionally, PacifiCorp has control over flows in Spring Creek/Jenny Creek (diversion export) and Fall Creek (diversion import).	An explanation of PacifiCorp's degree of control of river flow will be presented in the Hydrology study report and in Exhibit B of the license application.
146.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.3, Para 3	The increased risk of flooding due to USFWS-required water levels in Upper Klamath Lake should be discussed in more detail.	Risk is related to how BOR operates Link River dam to meet Upper Klamath Lake elevations.
147.	BLM - T. Raml 3/23/01	Pg. 7 FSCD Figure 2-2	The schematic incorrectly shows Spencer Creek entering the river above J.C. Boyle reservoir. Spencer Creek enters directly into J.C. Boyle reservoir. Additionally, the schematic does not show the diversion from Spring Creek into Fall Creek.	Comment noted. Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
148.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.3, Paras 4 & 6	Explain the indirect manner in which PacifiCorp consulted with National Marine Fisheries Service on coho (through USBR's 1999 Project Operations Plan). Clarify the relationship between the project and the requirements of the Biological Opinion (BO) developed for USBR operations.	Please see Exhibit B for the operational relationship between USBR and PacifiCorp.
149.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.4	The diagrams in Appendix A are not legible.	Comment noted.
150.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.4.1.1, Para 2	Provide a schedule of operations at the fish ladder. Provide information on how well the fish ladder works. Provide a record of compliance with FERC-imposed or BO flow requirements.	A description of the fish ladder will be presented in the Aquatics FTR. License compliance will be presented in the license application.
151.	BLM - T. Raml 3/23/01	Pg. 7 FSCD Table 2-1	Although the length of bypassed river reaches can be inferred, it would be useful to include canal/diversion length as an attribute within this table.	Comment noted.
152.	BLM - T. Raml 3/23/01	Pg. 7 FSCD Table 2-2	The value for the active storage capacity of Upper Klamath Lake appears to be incorrect. Additionally, the reservoir surface acreage presented in this table are inconsistent with values presented in other relevant documents (e. g., ODFW, Klamath River Basin Fish Management Plan, 1997). Since there is good bathymetric data available, PacifiCorp should choose a standard reference elevation (e. g., normal full pool) for which to compute surface area.	Results of reservoir bathymetric studies and hence updated storage capacities and surface acreage will be presented in the water quality study report and draft and final applications. The results of a bathymetric study of Upper Klamath Lake conducted by Reclamation will also be summarized in this report.
153.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.4.1.1, Para 1 & 4	Provide information on flow releases and determine the timing and frequency of noncompliance with minimum flows and ramping rated. Provide information on how well the fish ladder works at Link River Dam.	License compliance will be presented in the license application. The Link River dam fish ladder is owned by USBR. They are building a new ladder in 2004.
154.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.4.1.2, Para 1	Provide details on the Link River contract with USBR, including information regarding operational stipulations, contract expiration date, and the contract renewal process.	See license application Exhibit B.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
155.	BLM - T. Raml 3/23/01	Pg. 7 FSCD 2.4.2.1, Para 3	Provide information on how well the fish ladder works at Keno Dam.	A description of the fish ladder will be presented in the Aquatics FTR.
156.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.4.2.2, Para 1	Provide details regarding Keno reservoir operation agreements between PacifiCorp, USBR, and irrigation districts.	See license application Exhibit B.
157.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.4.3.1, Para 2	Provide information on how the fish ladder works at J.C. Boyle Dam.	A description of the fish ladder will be presented in the Aquatics FTR.
158.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.4.3.2, Para 3	The statement that "actual minimum flows in the [J.C. Boyle full flow] reach are approximately 450 cfs or greater" is incorrect. Discharge data collected every 30 minutes at the USGS gage downstream for the powerhouse (gage 11510700) suggests that during water year 1997, minimum flows were around 305 cfs, and common daily minimum flows during the summer were approximately 340 cfs. If PacifiCorp is releasing 100 cfs into the bypass reach, then the contribution from the spring's complex is approximately 200 to 300 cfs. Hanel and Gerlach (1964) estimated that 250 to 330 cfs is discharged from these springs. In numerous instances (including Fig. 2-2, Table 5-2, pages 2-26, 3-4, 3-6, 4-1, 4-27, 5-6, 5-18), the FSCD refers to inputs of 350 to 400 cfs, with no explanation of how these values were derived or why they are different from Hanel and Gerlach's estimate. Provide information on flow releases and determine the timing and frequency of noncompliance with minimum flows and ramping rates.	See study 1.4 *Analysis of Project Effects on Hydrology*. Flow and ramping compliance will be presented n the license application.
159.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.4.5.1, Para 2	The 1.3-mile bypass reach (described in section 5.1.2.7) is not explicitly mentioned in this description. Since the lengths of bypass reaches for other project components are included in their respective	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			descriptions, this information should be included for Copco 2.	
160.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.4.6.2, Para 2 & 3	Provide schedule of releases that have not met FERC and BO minimum flows or ramping rates.	PacifiCorp's compliance record for current FERC license minimum instream flows will be included in the FERC draft and final applications.
161.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.4.7.1, Para 1	This discussion should provide information regarding the length, capacity, and season-of-use of the Spring Creek diversion. Additionally, as mentioned above, the trans-basin diversion into Fall Creek is not shown on the project schematic (Fig. 2-2).	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.
162.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.5.1, Para 1	The value of Upper Klamath Lake active storage capacity (98% of 472,240 acre feet = 462,800 acre feet) presented here is inconsistent with that presented in Table 2-2.	Results of reservoir bathymetric studies and hence updated storage capacities and surface acreage will be presented in the water quality study report and draft and final applications. The results of a bathymetric study of Upper Klamath Lake conducted by Reclamation will also be summarized in this report.
163.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.5.2, Para 3	As mentioned above in regards to section 2.3, the premise that the project has little effect on river and tributary (Fall Creek and Spring Creek/Jenny Creek) flows is not true.	A discussion of the Fall Creek diversion will be presented in the Hydrology study report. See study 1.4 *Analysis of Project Effects on Hydrology.*
164.	BLM - T. Raml 3/23/01	Pg. 8 FSCD 2.5.2, Para 1	A reference describing the data set and methods used to develop the climate trends should be provided.	Comment noted.
165.	BLM - T. Raml 3/23/01	Pg. 8-9 FSCD Table 2-3	The Reservoir Total Storage Capacity values presented in this table for Upper Klamath Lake, J.C. Boyle, Copco 1 and 2, and Iron Gate are inconsistent with those presented in Table 2-2 and, in the case of UKL, section 2.5.1. Including storage capacity as a percent of MAR for additional sites between Iron Gate dam and the mouth of the river would increase the value of this table. This would enable a more specific delineation of the river segment that is most profoundly affected by project operations. Possible sites to add include the Klamath River near Seiad Valley (gage 11520500, drainage area 6940 sq. miles) and the Klamath River at	Comments on inconsistency of storage capacity noted in the FSCD are noted. Results of reservoir bathymetric studies and hence updated storage capacities and surface acreage will be presented in the water quality study report and draft and final applications. The results of a bathymetric study of Upper Klamath Lake conducted by Reclamation will also be summarized in this report. Information relating to the contribution of flow from Iron Gate dam at downstream gages will be presented in the Hydrology study report. See study 1.4 *Analysis of Project Effects on Hydrology.*

Num.	Agency	Page	Comment Summary	Response Summary
			Orleans (11523000, drainage area 8475 sq. miles). Additionally, since many water quality and aquatic habitat issues are directly related to summer flows, it would be useful if the table also displayed the reservoir storage capacities as a percent of mean monthly runoff for July, August, and September. This would allow a more detailed and relevant description of project effects.	
166.	BLM - T. Raml 3/23/01	Pg. 9 FSCD 2.5.2, Para 4	This discussion needs to include a summary of the effects of PacifiCorp project operations on seasonal and daily hydrographs. Namely, project operations tend to "flatten" hydrographs during winter and to dramatically increase the variability of daily hydrographs throughout the entire year (refer to comments regarding section 2.3). Additionally, Balance Hydrologics (1996) found that summer low flows are much reduced from historic levels.	This information will be presented in the Hydrology study report. See study 1.4 *Analysis of Project Effects on Hydrology.*
167.	BLM - T. Raml 3/23/01	Pg. 9 FSCD 2.5.3,	This section needs to include a description of the Klamath River natural flow periodicity as required in 18 CFR 16.8 (b)(v).	See study 1.4 *Analysis of Project Effects on Hydrology.*
168.	BLM - T. Raml 3/23/01	Pg. 9 FSCD 3.1, Para 3	Despite the fact that Keno dam has no power generation capacity, the Klamath River is not free flowing below Keno dam. The river is affected by reservoir operations (controlled by PacifiCorp) and irrigation diversions.	PacifiCorp acknowledges that Keno dam affects the river downstream. The way in which Keno Dam affects the river will be presented in the Hydrology study report. See study 1.4 *Analysis of Project Effects on Hydrology.*
169.	BLM - T. Raml 3/23/01	Pg. 9 FSCD 3.1, Para 4	It is misleading to categorize Jenny Creek as being of comparable size to Fall Creek. Jenny Creek drains approximately 134,300 acres, while Fall Creek drains approximately 9,400 acres. Although Spencer, Shovel, and Jenny Creeks may be "small" in the context of the entire Klamath River basin, they are major tributaries within the context of the current FERC boundary.	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
170.	BLM - T. Raml 3/23/01	Pg. 9 FSCD 3.1.1.1, Para 1	What are the highly permeable rocks of the Modoc Plateau in the Klamath Basin? Describe the effects of deformation on regional groundwater and surface and subsurface flow. What is the source of this information?	The permeable rocks include volcanic-rock aquifers that contain water in fractures, volcanic pipes, tuff beds, rubble zones, and interbedded sand layers, primarily in basalts of Miocene age or younger. Regarding effects on regional groundwater, subsurface, and surface flow, see: (1) Ground Water Atlas of the United States, California, Nevada (Planert and Williams, 1995; U.S. Geological Survey HA 730-B); and (2) Klamath/Central Pacific Coast Ecoregion Restoration Strategy, Volume I - Description of the Ecoregion (Cooperrider and Garrett, 1998; U.S. Fish and Wildlife Service, Klamath Falls)
171.	BLM - T. Raml 3/23/01	Pg. 9 FSCD 3.1.2, Para 2	A reference describing the data set and methods used to develop the climate trends should be provided.	Comment noted.
172.	BLM - T. Raml 3/23/01	Pg. 9-10 FSCD 3.1.3, Para 1	When discussing channel geomorphic response to project operations, referring solely to Ayres Associates (1999) is not appropriate for three main reasons. *See letter for reasons.*	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
173.	BLM - T. Raml 3/23/01	Pg. 10 FSCD 3.1.3, Para 2	For the reasons outlined in response to sec. 3.1.3 paragraph 1, it is inaccurate to conclude that the project has caused "no significant channel geomorphic impacts" solely on the basis of the Ayre Associates (1999) analysis of pre- and post-Iron Gate conditions between Iron Gate dam and the river mouth. *See letter for more notes.*	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
174.	BLM - T. Raml 3/23/01	Pg. 10 FSCD 3.1.3, Para 3	Although the Ayres Associates (1999) report states in numerous instances (p. 6.18, 6.20, 8.76, and 9.12) that riparian vegetation is detrimentally affected by natural droughts and floods, it is incorrect to imply that the report determined that project operations were not partly responsible for the condition of riparian vegetation. As such, a description of how the project affects riparian vegetation should be provided.	See studies 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* and 2.2 *Wetland and Riparian Plant Community Characterization.*
175.	BLM - T. Raml 3/23/01	Pg. 10 FSCD 3.1.4, Para 3	Mention of the effects of the project on water quality has been omitted from this paragraph. It should be noted that the project is one of the main causes of short-term water quality variability, and may be linked	See studies 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area* and 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			to degradation of important water quality parameters such as temperature, DO, nutrients, and chlorophyll-a (as noted in sec. 4.2.3. and Campbell, 1999).	
176.	BLM - T. Raml 3/23/01	Pg. 10 FSCD 3.1.4, Para 4	The described reach also contains redband trout.	Comment noted.
177.	BLM - T. Raml 3/23/01	Pg. 11 FSCD 3.1.5, Para 2	It is worth noting that the river segment beginning at the Oregon-California line and extending to Copco reservoir was found to be eligible for "Scenic" classification in the Wild and Scenic River system. Although not yet designated, federal lands in this reach are currently being managed to maintain the Outstandingly Remarkable Values that qualified the segment for Scenic states (Redding RMP, pages 33-39).	PacifiCorp is well aware of the significance of our lands in this stretch of the Klamath River. We have made every effort to manage our lands in recognition of these values. PacifiCorp is also furnishing, without compensation, take-out facilities for rafting on the Klamath river at three separate locations on PacifiCorp land to support the BLM River Rafting program.
178.	BLM - T. Raml 3/23/01	Pg. 11 FSCD 3.2.4.1, Para 1	As noted in section 3.2.4.2, flows in this reach is based on the assumption that discharge from the upstream springs complex is 350 cfs, and is therefore overestimated (see above comment on section 2.4.3.2). The phrasing in this paragraph is misleading; while summer and fall flows can, and sometime do, reach 3,350 cfs, mean average daily discharges below the powerhouse from May to October are less, and sometimes much less, that 2,000 cfs (from USGS gage data for water years 1960 to 2000). During the period June to August 1997, following a winter with a large flood peak, USGS 30-minute data for this reach show that flow did not exceed 2,900 cfs.	Comment noted.
179.	BLM - T. Raml 3/23/01	Pg. 11 FSCD 3.2.7, Para 1	As discussed in regards to section 3.1.3, it is inaccurate to imply that the Ayres Associates (1999) report concluded that the project has had no "significant geomorphic impacts" on the Klamath River below Iron Gate dam.	Comment noted. See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
180.	BLM - T. Raml 3/23/01	Pg. 11 FSCD	The ODEQ water quality monitoring program on the Klamath River is ongoing; it was not discontinued in	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
		4.2.1.2, Para 5	1995 (Cude, pers. Comm., 2001).	
181.	BLM - T. Raml 3/23/01	Pg. 11 FSCD Figures 4-5, 4-6, and 4-7	The format of these figures (especially the equal interval on the x-axis and the lines connecting data points) implies continuous sampling. To aid comparison between sites, it may be useful to plot the data for all three sites on the same graph.	Comment noted.
182.	BLM - T. Raml 3/23/01	Pg. 11 FSCD 4.3.2, Para 4	The temperature TMDL for the Klamath River between Keno dam and the Oregon-California line is scheduled to be complete in December 2004. As project developments are located within this segment, this is a particularly relevant component of the TMDL schedule.	Comment noted.
183.	BLM - T. Raml 3/23/01	Pg. 11 FSCD Table 4-1	Add parameters and segments that "need data" to determine compliance with ODEQ or CSWRCB water quality standards.	Comment noted.
184.	BLM - T. Raml 3/23/01	Pg. 12 FSCD 4.3.3.4, Para 1	BLM water quality goals and objectives are discussed in numerous documents, including the O&C Lands Act, Aquatic Conservation Strategy, KFRA RMP, Redding RMP, Medford RMP, Bring Back the Natives Riparian Wetland Initiative, Klamath/Iron Gate Watershed Analysis, and the Topsy/Pokegama Landscape Analysis. In addition, state water quality objectives and the Clean Water Act guide the BLM.	Comment noted.
185.	BLM - T. Raml 3/23/01	Pg. 12 FSCD 4.4, Para 1	As noted above with regards to section 2.3, the inference that the project has little effect on stream flows, and thus has little effect on water quality, is not warranted. For instance, Campbell (1999) suggests that project operations may affect temperature, DO, nutrient concentrations, and nutrient loading. Additionally, this discussion should mention the diversion from Spring Creek and its potential to affect water quality in Jenny Creek.	See water quality studies; Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.
186.	BLM - T. Raml 3/23/01	Pg. 12 FSCD 4.4.1.1,	The factors that control water quality in each segment of the Klamath River are complex and varied. Among them, reservoir volume, reservoir surface area,	See water quality section in Aquatics FTR for information.

Num.	Agency	Page	Comment Summary	Response Summary
		Para 1	reservoir operation, and the volume and quality of tributary accretions are perhaps most important (Deas and Orlob, 1999). For this reason, a discussion of water quality should be provided for individual segments, as was done for water quantity (section 3.2).	
187.	BLM - T. Raml 3/23/01	Pg. 12 FSCD Table 4-2	Ayres Associates (1999) found that seasonal flow patterns at the Klamath, Orleans, Seiad Valley, and Iron Gate gages changed following completion of Iron Gate dam. As discussed in that report, this change was evident both when comparing hydrographs for all water years for which data was available and when comparing hydrographs for selected water years Ayres Associates (1999, pp. 7.13 to 7.46). Although changes in hydrograph characteristics may be partly related to logging activity in the 1960s and 1970s, the Ayres report only analyzed the effects of one project dam (out of six on the mainstem). It is inaccurate of PacifiCorp to state conclusively that the cumulative effect of project operations has "no control" on seasonal flow patterns. Additionally, load-following operations at Link River, J.C. Boyle, and Copco all produce summer peak flows that are likely well outside the range of the natural summer flow regime.	See study 1.4 *Analysis of Project Effects on Hydrology.*
188.	BLM - T. Raml 3/23/01	Pg. 12 FSCD 4.4.1.1, Para 2	The data set from which the temperature trend is inferred is not identified. If it is the same data set illustrated in Figures 4-11 and 4-12, then the trend inference may not be warranted, due to the limited length of the sampling period. The cross-reference to Figures 4-7 and 4-8 appears to be incorrect; Figures 4-11 and 4-12 seem to be the focus of the discussion.	Comment noted.
189.	BLM - T. Raml 3/23/01	Pg. 12 FSCD 4.4.1.1, Para 3	It is incorrect to describe J.C. Boyle power generation as "continuous" in fall, winter, and spring. USGS 30-minute data show that flow ramping occurs year-round at this facility.	Comment noted.
190.	BLM - T. Raml 3/23/01	Pg. 12 FSCD	A description of water temperatures in Keno reservoir should be added.	See studies 1.1 *Compilation and Assessment of Existing Water Quality Data,* 1.2 *Monitoring of Water Temperature and Water Quality*

Num.	Agency	Page	Comment Summary	Response Summary
		4.4.1.2,		*Conditions in the Project Area* and 1.3 *Water Quality Analysis and Modeling Process.*
191.	BLM - T. Raml 3/23/01	Pg. 12-13 FSCD 4.4.2.2, Para 1	Section 4.4.2.3 discusses the effects of fall turnover on reservoir dissolved oxygen conditions. Reservoir releases subsequent to onset of this process may include anoxic waters. In addition, as discussed in section 4.4.2.3, project reservoirs have high algal production which may cause diurnal DO fluctuations (also discussed in Campbell, 1999), It is therefore inaccurate to omit project effects on Klamath River water quality from this discussion.	Comment noted.
192.	BLM - T. Raml 3/23/01	Pg. 13 FSCD Figures 4-11 and 4-12	If the purpose of these figures is to compare temperature from Keno to Iron Gate, it would be much more useful if data for all four sites, or at least both of the paired comparison sites, were shown on the same graph.	Comment noted.
193.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.4.4	Provide a conclusion for the information and describe how the project affects this condition. Campbell (1999) inferred that the reservoirs-in-series on the Klamath River do not act as nutrient sinks, and that nutrient loading is higher below Iron Gate dam than at Keno reservoir.	See Water Quality section in Aquatics FTR.
194.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.5, Para 2	The BLM would like to participate in any discussions regarding identification of project effects on water quality. At your earliest convenience, please provide a timeline of such discussions to the appropriate BLM hydrology and fisheries personnel.	Comment noted.
195.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.5.1.1, Para 1	As mentioned in our general comments on the FSCD, the water quality database described in this section should have been compiled prior to publication of the FSCD. This would have contributed to the discussion of water quality in the project area and enabled development of more specific studies.	Comment noted.
196.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.5.1.2,	Compiled data will have to be assessed before the temporal and spatial scope of data collection can be determined. Given the current climatic conditions in	A collaborative Water Quality Working Group was formed as part of the relicensing process.

Num.	Agency	Page	Comment Summary	Response Summary
		Para 2	the Klamath Basin, one summer/fall data collection season may be insufficient. The BLM would like the opportunity to contribute its "expert professional judgment" to the task of assessing the completeness of the compiled water quality data set. For this and other water quantity/quality monitoring and modeling issues, the BLM recommends convening a Water Modeling Task Force.	
197.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.5.1.3	The assumption that existing water quality data will adequately characterize water quality conditions in the project area is premature, since the data has not yet been compiled, much less assessed.	Comment noted.
198.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.5.1.4, Para 1	The description of this study does not address the methods that will be used to identify project-related effects to water quality. As discussed in BLM's recommended studies, streamflow and water quality modeling will be required to assess the current impact of the project on water quality, and to identify potential water quality mitigation measures.	See studies 1.4 *Analysis of Project Effects on Hydrology* and 1.3 *Water Quality Analysis and Modeling Process*.
199.	BLM - T. Raml 3/23/01	Pg. 13 FSCD 4.5.3.2 Para 1	No explanation is given as to why Keno reservoir was excluded from this study. Although Keno dam is not operated for power generation, the hydraulic residence time of Keno reservoir at average flow (6 days, from Table 2-2) is long enough to affect numerous water quality parameters.	Comment noted.
200.	BLM - T. Raml 3/23/01	Pg. 14 FSCD 4.5.3.3, Para 1	Section 4.5.3.2, ("Approach, Methods, and Schedule") does not mention any data collection sites above or below the reservoirs. Clarify the manner by which values for inflow and outflow concentrations will be measured.	See water quality studies for collection site locations.
201.	BLM - T. Raml 3/23/01	Pg. 14 FSCD 4.5.3.4, Para 1	In its current form, this study will not produce information that can be used to determine the effect of the project on nutrient concentrations; that information can only be provided by high-resolution water quality models capable of modeling a range of alternatives. The recommended Comprehensive Recommended	Comment noted. See water quality studies.

Num.	Agency	Page	Comment Summary	Response Summary
			Water Quality study addresses the basis and methods for such an effort. There are numerous other water quality parameters that are potentially affected by the project (including nutrient loading, chlorophyll-a, pH, DO, and temperature). These parameters affect beneficial uses directly and indirectly (as discussed in Oregon Plan for Salmon and Watersheds, 1999), and therefore merit consideration similar to that proposed for nutrients.	
202.	BLM - T. Raml 3/23/01	Pg. 14 FSCD Table 5-1	Several lamprey species considered present in the Klamath Basin upstream of Iron Gate dam are missing; Pit-Klamath brook lamprey, Klamath river lamprey, and Miller Lake lamprey (Stewart Reid pers comm. 2001, ONHP 2001). Scientific name for Pacific Lamprey is *Lampetra tridentata.* Miller Lake lamprey and Pacific lamprey are listed as USFWS Species of Concern. Klamath largescale suckers are a Species of Concern to the USFWS (ONHP 2001). Jenny Creek suckers are also upstream of Iron Gate dam and are a Species of Concern to USFWS.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation*.
203.	BLM - T. Raml 3/23/01	Pg. 14 FSCD Figures 5-1	The life history bar of the juvenile rearing for spring and fall Chinook appears incorrect. Chinook salmon parr juveniles typically would be in the system sometime after fry emergence and then migrate out by the end of June (ODFW 1995). Clarify life history status for juvenile Chinook salmon.	Comment noted. See Fish Periodicity Table in Aquatics FTR.
204.	BLM - T. Raml 3/23/01	Pg. 14 FSCD 5.1.2.4, Para 1	How many surface acres are present at J.C. Boyle? What is the lake elevation used to determine this surface acreage? Text reads 944 surface acres, however Klamath Fish Management Plan notes 380 surface acres (pg. 44). Please clarify this apparent discrepancy.	Results of reservoir bathymetric studies and hence updated storage capacities and surface acreage will be presented in the water quality study report and draft and final applications.
205.	BLM - T. Raml 3/23/01	Pg. 14 FSCD 5.1.2.4, Para 4	Stating that J.C. Boyle is the most productive largemouth bass fishery is not consistent with information from ODFW. The ODFW noted that the largemouth bass population in Topsy showed some of the "highest growth rates" in Eastern Oregon waters,	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			and that growth is probably only limited by water temperature (Rhine Messmer pers comm. 2001, ODFW 1997). It does not say that Topsy reservoir has the highest productivity in the State.	
206.	BLM - T. Raml 3/23/01	Pg. 14-15 FSCD 5.1.2.4, Para 5	Spencer Creek is not the only tributary flowing into the reservoir. Please clarify the intent of the statement. What is the source for the information (authors and date) on the numbers of trout at the mouth of Spencer Creek? What is the data support (source) to state that the fish noted at the mouth of Spencer Creek are spawning in Spencer Creek? Further clarification of this issue is necessary to understand the importance of Spencer Creek contributions to the Keno and J.C. Boyle fish populations. *See letter for more notes.*	Information will be addressed in the Aquatics FTR and/or Exhibit E of the draft and final applications.
207.	BLM - T. Raml 3/23/01	Pg. 15 FSCD 5.1.2.5, Para 2	See BLM Hydrology comment with regards to section 3.2.4.2 on spring inflow of bypass reach. What reference or survey has been conducted to address the locations of stranding habitat that would PacifiCorp to the conclusion that the only stranding habitats are the pockets immediately downstream of the spillway? Please clarify the extent of potential stranding habitat for suckers and redband.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
208.	BLM - T. Raml 3/23/01	Pg. 15 FSCD 5.1.2.5, Para 4	See comment 5.1.2.5, paragraph 2 for BLM concerns in regards to J.C. Boyle Bypass Reach. Ramping concerns are the same for the J.C. Boyle Full Flow Reach.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*

Num.	Agency	Page	Comment Summary	Response Summary
209.	BLM - T. Raml 3/23/01	Pg. 15 FSCD 5.1.2.5, Para 5	Research conducted by ODFW monitored downstream fish movement below J.C. Boyle dam to measure possible recruitment from Spencer Creek, but concluded that the low numbers of juvenile redbands they saw were not adequate to maintain the population in the river between J.C. Boyle and the Stateline (Hemmingsen et al. 1992). The contribution of Spencer Creek spawning redband to sustaining the fish population in J.C. Boyle reach is very unclear. Further clarification of fish movement to and from Spencer Creek would be needed to understand how this tributary is affecting the fish populations in the J.C. Boyle reaches.	See study 1.15 *Investigation of Trout Movement in the J.C. Boyle Bypass and Peaking Reaches.*
210.	BLM - T. Raml 3/23/01	Pg. 16 FSCD 5.1.2.5, Para 6	Although the habitat in Shovel Creek may be of high quality, FERC (1990, p. 3-24) suggests that spawning use may be below capacity. A discussion of the differing conclusions would be useful, as terms such as "good" numbers present in the stream do not give an indication of the potential productivity of the stream.	Comment noted.
211.	BLM - T. Raml 3/23/01	Pg. 16 FSCD 5.1.2.8, Iron Gate Reservoir	Trout that have become established in Iron Gate Reservoir which currently have access to the lower reaches of Scotch, Camp, Jenny and Fall creeks below barriers where they may be competing with native trout for food and space, and cross-breeding with native fish with the consequence of an altered gene pool in surviving fish (Klamath-Iron Gate Watershed Analysis Executive Summary page ix; Jenny Creek added). Introgression of reservoir adapted trout with resident populations of native trout is not discussed in the FSCD. Please clarify water impoundment impacts on this intermixing zone between local trout populations.	PacifiCorp's fisheries studies do not differentiate the apparent trout stock differences. Introgression of stocks may be addressed in study 1.17 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
212.	BLM - T. Raml 3/23/01	Pg. 16 FSCD 5.1.2.9, Para 1	The conclusions presented in the Ayres Associates (1999) report regarding spawning habitat below Iron Gate are questionable because they are either (1) generalizations based on inference (Ayres Associates 1999, pp. 8.22 and 9.10) or (2) based on incomplete or	See studies 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* and 1.10 *Fish Passage Planning and Evaluation*.

Num.	Agency	Page	Comment Summary	Response Summary
			admittedly inaccurate sediment sampling methods (pp. 8.41 to 8.42). Due to the lack of passage at Iron Gate Dam, Copco 1, and Copco 2 anadromous species are unable to reach refugial habitat upstream, therefore they have no option but to reproduce and rear in these water quality impaired segments of river. Based on life history characteristics of spring chinook and steelhead (ODFW 1995), both species would be expected to be able to sustain populations in the Upper Klamath basin. The ODFW noted that the steelhead life history is extinct in this basin in Oregon due to the construction of Copco Dam in 1917 on the Klamath River (ODFW 1995). A detailed discussion on how steelhead and spring chinook salmon would use the mainstem river and upper basin if passage were possible appears important in order to understand PacifiCorp's perspective on water quality limitations and how they relate to the full potential of Klamath River fisheries.	
213.	BLM - T. Raml 3/23/01	Pg. 16 FSCD 5.1.2.10 Para 2	There are two affected reaches of the Fall Creek development. The minimum flow in Spring Creek downstream from the diversion is not described.	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.
214.	BLM - T. Raml 3/23/01	Pg. 16 FSCD 5.2.2 Federal Fish Management Objectives (p. 5-11 to 5-12)	The FSCD does not mention BLM's management objectives for fisheries. *See letter for objectives.*	Comment noted.
215.	BLM - T. Raml 3/23/01	Pg. 17 FSCD 5.3.1 Para 1	The list of potential issues does not include the effects of the project on sediment and organic material storage and transport. These processes are affected by dams, diversion bypasses, and flow release regimes. Also,	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*.

Num.	Agency	Page	Comment Summary	Response Summary
			there is no discussion of habitat losses in the Klamath River, Jenny Creek, Spencer Creek, and other tributaries as a result of inundation by project reservoirs.	
216.	BLM - T. Raml 3/23/01	Pg. 17 FSCD 5.3.2.1 Para 1	Reservoir management for Keno as described by PacifiCorp potentially could have adverse consequences to the fishery resources. Drawdown of this reservoir potentially could lead to the acceleration of water through the open water portions. Current and past commercial activities on the reservoir have long included floating-log rafts. The bark waste from these rafts deposited over many decades has increased concern for the substrate in the area. Transport of this decomposing waste could lead to adverse impacts to the fisheries resources downstream. Timing of drawdowns would also potentially have compounding risks as drawdowns during water-quality-limited periods could substantively impact the fisheries present in the Keno reach. Assessment of reservoir management of the Keno dam needs to further clarify these risks.	See study 1.3 *Water Quality Analysis and Modeling Process*.
217.	BLM - T. Raml 3/23/01	Pg. 17 FSCD 5.3.2.2	J.C. Boyle Reservoir - There is no analysis of reservoir fluctuation effects on redband life history and population characteristics or Hemmingsen et al. 1988-1992 studies. *See letter for more detail.*	See Aquatics FTR and Exhibit E.
218.	BLM - T. Raml 3/23/01	Pg. 18 FSCD 5.3.2.2 Para 3 & 4	PacifiCorp has not adequately addressed the effects of reservoir fluctuations on native fish species populations and life histories in the affected reservoir. PacifiCorp should assess the effects of reservoir fluctuation on sucker spawning. PacifiCorp has not addressed the impacts of reservoir fluctuation on riparian vegetation as it relates to fishery resources. Completing the Desjardins and Markle (1999) studies would provide important information on the effects of reservoir fluctuation on early life history ecology of endangered lake suckers.	Comment noted. See Aquatics FTR and Exhibit E. For riparian interest, see study 2.2 *Wetland and Riparian Plant Community Characterization*.

Num.	Agency	Page	Comment Summary	Response Summary
219.	BLM - T. Raml 3/23/01	Pg. 18 FSCD 5.3.2.3 Para 1	Sucker spawning has been documented in the Klamath River immediately above Copco 1 reservoir (Buettner M. Pers Comm. 2001). However, California Fish and Game's Upper Klamath River Wild Trout Management Plan (2000) notes that suckers have not been observed spawning in Shovel Creek and age analysis conducted in 1987 suggests that successful reproduction is not occurring among the Lost River and shortnose sucker species in these segments (below J.C. Boyle dam to Copco reservoir) of the river. Reproductive success could be related potentially to reservoir fluctuations and has not been adequately addressed in the PacifiCorp FSCD. *See letter for more.*	Comment noted.
220.	BLM - T. Raml 3/23/01	Pg. 18 FSCD 5.3.2.4 Para 1	Desjardins and Markle (1999) also conducted work on Iron Gate reservoir and that information was not included in the FSCD. *See letter for more.*	Comment noted.
221.	BLM - T. Raml 3/23/01	Pg. 18-19 FSCD 5.3.3.2 Para 1	Further clarification of PacifiCorp's ability to control the Keno reach appears necessary to assess resource effects. The PacifiCorp's FERC license includes a ramping rate for the Keno stretch. The designation of a ramping rate suggests that PacifiCorp has some level of control on flow in the Keno stretch.	See Exhibit B for description of Keno dam operations.
222.	BLM - T. Raml 3/23/01	Pg. 19 FSCD 5.3.3.2 Para 1	Addressing the existing conditions of the Keno reach including the instream flow through this section is important, regardless of the level of control that PacifiCorp believes it has, in assessing the cumulative effects of the project.	See study 1.12 *Instream Flow Analysis.*
223.	BLM - T. Raml 3/23/01	Pg. 19 FSCD 5.3.3.3 Para 4	The National Park Service document specifically states, "Wild rainbow trout of the Klamath River are a highly productive, self-sustaining population that spawn naturally in the wild." It then goes on to note in the next paragraph that some spawning habitat is present in the bypass reach and the lower reaches have little or no spawning habitat. Hemmingsen et al. Reports in 1992, as noted in comment 5.1.2.5, Paragraph 5, that less	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			upstream movement of trout was noted in 1988-1991 than in 1959. The National Park Service referenced text is an all inclusive statement which appears to reference the whole river, and the Hemmingsen and Buchannan work does not adequately support the FSCD statement "The population of native wild trout that inhabits this river segment is considered highly productive, … in terms of reproduction" for the J.C. Boyle full flow reach.	
224.	BLM - T. Raml 3/23/01	Pg. 19 FSCD 5.3.3.7 Para 1	PacifiCorp needs to clarify the "possible habitat limitation" on Fall Creek, as to type of limitation, and species of fish affected. It is possible that losing cool water from Spring Creek compromises the native fish species ability to remain healthy during the warm summer months. Withdrawal of water from Spring Creek to Fall Creek needs to be assessed. The genetic integrity of native trout is an issue in upper Fall Creek. Trout from Spring Creek are currently capable of migrating from Jenny Creek Watershed to Fall Creek. This concern for genetic integrity transcends in reverse direction back to Spring Creek that may also have trout with altered genetic makeup due to intrusion of Fall Creek fish (Klamath-Iron Gate Watershed Analysis Executive Summary page ix). This concern is not addressed in the FSCD.	Comment noted.
225.	BLM - T. Raml 3/23/01	Pg. 19 FSCD 5.3.4	Ramping operations are not discussed in the context of riparian affects and the related impacts to hydrologic or biologic resources. Large alterations in daily and weekly flows, especially as it relates to base flow, can highly impact the riparian habitat. PacifiCorp addresses, to a minor extent, the impacts of load following on the riparian community in the wildlife project effects (6.3.3 Pg 6-27). In addition, the combined impacts due to load following on the alteration of channel geomorphology and riparian community is not discussed. These combined impacts can heavily impact the fisheries ecology of all affected	Comment noted. The relationship between ramping and riparian communities will be assessed in study 2.2 *Wetland and Riparian Plant Community Characterization* and in the draft license application.

Num.	Agency	Page	Comment Summary	Response Summary
			reaches.	
226.	BLM - T. Raml 3/23/01	Pg. 19 FSCD 5.3.4.1 Bullet 3	This rate of change appears to be incorrect. Is the rate of ramp 20 cfs per 5 minutes? This rate, if correct, compared to the other ramping rates, would equate to 120 cfs per 30 minutes.	Rate is correct.
227.	BLM - T. Raml 3/23/01	Pg. 20 FSCD 5.3.4.1 Para 2	The FSCD notes that ramping is no longer a concern in the Link River, in part due to salvage operations. Please clarify what level of salvage actions would be expected to occur, based on reservoir management and contributing environmental factors.	See study 1.7 *Instream Flow Analysis.*
228.	BLM - T. Raml 3/23/01	Pg. 20 FSCD 5.3.4.2 Para 1	Keno reach is identified as a "slave" reservoir to control lake elevation for Lake Ewauna, for Iron Gate releases, and load following operations. The FSCD identifies the occurrence of ramping and says that a ramp rate will be proposed in the license, but does not describe the effects of ramping on this reach. Some level of impact would be anticipated from ramping on the multiple fish species of this reach. Clarification of ramping effects on the Keno reach is necessary to assess the impacts to the fishery resources.	See study 1.7 *Instream Flow Analysis*
229.	BLM - T. Raml 3/23/01	Pg. 20 FSCD 5.3.4.4	Downstream from J.C. Boyle Powerhouse - A preliminary analysis of USGS 30-minute discharge data for gage 11510700 (below J.C. Boyle powerhouse) suggests that during water year 1997 the FERC required ramping rate was exceeded for approximately 15 percent of the 30-minute increments. How does ramping affect riparian communities, and the fisheries, in this reach of the river?	See studies 1.7 *Instream Flow Analysis* and 2.2 *Wetland and Riparian Plant Community Characterization.*
230.	BLM - T. Raml 3/23/01	Pg. 20 FSCD 5.3.4.6 Bullet 2	PacifiCorp states that they have "nearly always met current license restrictions. " Provide a schedule of non-compliance with FERC minimum releases and ramping rates and determine the effects of non-compliance on fisheries.	An assessment of compliance with current license will be provided in the license application.

Num.	Agency	Page	Comment Summary	Response Summary
231.	BLM - T. Raml 3/23/01	Pg. 20 FSCD 5.3.5	Upstream Fish Passage - What are the current standards for fish ladders in the state of Oregon and California? Which of the project's dams are in compliance with existing standards and which are not? Upstream passage is not addressed at Copco 1 and 2 or Iron Gate dams. PacifiCorp needs to address the impacts that are occurring to the redband trout populations present due to the lack of upstream passage at project facilities.	See study 1.10 *Fish Passage Planning and Evaluation.*
232.	BLM - T. Raml 3/23/01	Pg. 20-21 FSCD 5.3.5 Para 4	Please clarify how spring chinook salmon and steelhead population would be in competition with native fish species. Historic data suggests an abundant fish population in the lake of both resident and anadromous fish. The native redband trout continue to survive in the Upper Klamath Lake in fairly healthy numbers and achieve substantial growth rates. Please clarify assumptions on steelhead trout competing with native fish populations, specifically addressing this issue as it relates to the native redband populations present in the Upper Klamath basin, as they are the same species. Please identify the specific assumptions that conclude that spring chinook salmon populations would compete with native fish in the Upper Klamath basin.	Competition between anadromous and resident fish, including the likely outcome, will be addressed in the fish passage study (1.10); specifically in the EDT modeling effort.
233.	BLM - T. Raml 3/23/01	Pg. 21 FSCD 5.3.4.1 Para 1	Review of the PacifiCorp 1997 document indicates an effort of 4,479 hours of trapping resulting in 318 trout on Keno dams. J.C. Boyle ladder was monitored for 4348 hours and 1015 trout were observed. Link River ladder was trapped 4501 hours and captured 146 trout. Efficiency of each trap was not tested, and the minimum size trout captured/reported was not listed in the study. The FSCD states that the Keno dam ladder is "effective at passing trout." Clarification of effectiveness, in this context, is necessary to determine the relative impact of Keno ladder versus the other project ladders, as the reference cited does not support PacifiCorp conclusions in the FSCD.	See study 1.10 *Fish Passage Planning and Evaluation.*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
234.	BLM - T. Raml 3/23/01	Pg. 21 FSCD 5.3.6	Downstream Fish Passage - Surface water currents in the reservoirs are not discussed. PacifiCorp needs to address the impacts that are occurring to the redband trout populations due to the lack of downstream passage at project facilities.	See study 1.10 *Fish Passage Planning and Evaluation.*
235.	BLM - T. Raml 3/23/01	Pg. 21 FSCD 5.3.6.2 Para 2	See comment from 5.1.2.4, Paragraph five on Spencer Creek contribution to J.C. Boyle reach.	Information will be addressed in the Aquatics FTR and/or Exhibit E of the draft and final applications.
236.	BLM - T. Raml 3/23/01	Pg. 21 FSCD 5.3.8 Para 2	The spring inflows to the Copco bypass reach are not mentioned elsewhere in the FSCD. A discussion of discharge from the Copco springs should be included in an appropriate section (perhaps 2.4.5.1 or 4.4.2.2).	PacifiCorp is not aware of any springs in the Copco bypass reach.
237.	BLM - T. Raml 3/23/01	Pg. 21 FSCD 5.5.1.1 Para 1	An evaluation of the Keno reach should be part of the assessment of impacts from ramping. The Keno reach is an important rearing area for resident redband trout spawned in Spencer Creek (Hemmingsen et al. 1992). Anecdotal information suggests that trout in the Keno reach are a larger size on average than in the J.C. Boyle reaches (Smith pers comm. 2001). The effect of ramping on these fish would need to be addressed. Sucker spawning has not been confirmed in the Keno reach, ramping potentially could impact the activity as well as success of this activity. Refer to the BLM recommended spawning and reproductive success study communities (BLM Proposed Study 5.1).	See study 1.7 *Instream Flow Analysis.*
238.	BLM - T. Raml 3/23/01	Pg. 22 FSCD 5.5.1.1 Para 3	In addition to the four factors listed, the proposed study should assess how often the FERC required ramping rate is exceeded. As was done for Iron Gate dam (discussed in section 5.3.4.6), the study should (1) model the extent of ramping effects on discharge and stage and (2) assess the factors which influence PacifiCorp's ability to control ramping. Evaluation of ramping on riparian vegetation communities would also be important to understanding impacts as it relates to fisheries/wildlife/hydrologic resources. See BLM	An assessment of compliance with current license will be provided in the license application. See study 2.2 *Wetland and Riparian Plant Community Characterization.*

Num.	Agency	Page	Comment Summary	Response Summary
			recommended study on ramping impacts on riparian vegetative communities (BLM Proposed Study 15.1).	
239.	BLM - T. Raml 3/23/01	Pg. 22 FSCD 5.5.1.1 Para 3	The study should determine the impact of ramping on fish populations including displacement of fry and juveniles. Rapid flow fluctuations are also documented to contribute to erosion of gravel and fine sediments, particularly to gravel-starved reaches below dams that block sediment transport. The proposed study should also include documented or expected problems from current ramping practices, including public safety issues, and a description of frequency, magnitude, and duration of ramping events. PacifiCorp also needs to summarize hydro project operations with respect to frequency and magnitude of power outages and subsequent start-ups. Rapid ramping of flow due to project operations or outages is detrimental to aquatic life. The frequency of occurrence, seasonal period of occurrence, magnitude of fish populations present, and potential for stranding of fish, all affect the severity of the event. Frequent outage also may cause cumulative effects on aquatic production, and fish stranding that may be extremely severe. This is in addition to the high ramping rate already experienced below the J.C. Boyle project and can also occur in the Link River bypass reach. Lack of or low observations of stranded fish does not conclusively prove that salmonid fish or other aquatic life will not be stranded or distressed during project outages, start-ups, and frequent ramping.	See study 1.7 *Instream Flow Analysis.*
240.	BLM - T. Raml 3/23/01	Pg. 22 FSCD 5.5.1.1 Para 4	Evaluation of impacts would have to address all ranges of flows and a full range of rates.	Comment noted.
241.	BLM - T. Raml 3/23/01	Pg. 22 FSCD 5.5.1.2	The use of the data from older PHABSIM modeling may not be comparable to existing efforts being conducted by USGS and Dr. T. Hardy. Use of the most up-	See studies 1.8 *Instream Flow Scoping Plan* and 1.12 *Instream Flow Analysis.*

Num.	Agency	Page	Comment Summary	Response Summary
		Para 1	to-date modeling efforts or at least the same modeling in the lower reach and the impounded reaches would be necessary to evaluate the impacts on aquatic habitat in the impounded reach versus the lower river. If PacifiCorp wishes to pursue this modeling method, then PacifiCorp would need to convene agency personnel and university experts for group meetings, with onsite visits and office discussions to determine additional data needs, analysis of the data, and development of appropriate data recommendations for all parameters of PHABSIM modeling. PacifiCorp also needs to evaluate the relationships between ramping and important water quality parameters using time sequence analysis.	
242.	BLM - T. Raml 3/23/01	Pg. 23 FSCD 5.5.2.1 Para 2	Analysis of project effects on riparian vegetation should be done for all reaches for which fisheries flows are assessed, and analysis of project effects on water contact recreation should be done for the J.C. Boyle full flow reach.	Analysis of project effects on riparian vegetation will be coordinated with other studies such as fisheries, hydrology and geomorphology studies to integrate flow information. See study 2.2 *Wetland and Riparian Plant Community Characterization.*
243.	BLM - T. Raml 3/23/01	Pg. 23 FSCD 5.5.2.1 Para 3	The project strongly affects flows in Spring Creek; instream flow evaluations should be conducted for the portion of this creek that is downstream from the diversion.	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication.
244.	BLM - T. Raml 3/23/01	Pg. 23 FSCD 5.5.2.1 Para 5	The use of the data from the older IFIM modeling may not be comparable to current efforts being conducted by USGS. A newer methodology, SIAM, is currently being employed in the lower river. Use of the most up-to-date modeling would be necessary to evaluate the impact on aquatic habitat in the impounded reach versus the lower river.	See studies 1.8 *Instream Flow Scoping Plan* and 1.12 *Instream Flow Analysis*.
245.	BLM - T. Raml 3/23/01	Pg. 23 FSCD 5.5.2.1 Bullet 6	Evaluation of instream flow effects of the Keno reach appears to be very important in understanding the fisheries of the Klamath River. The Keno reach is operated in a slightly different manner than the load following operations, with different ramping and different minimum flows than J.C. Boyle. *See letter for more.*	See study 1.12 *Instream Flow Analysis*.
246.	BLM - T. Raml	Pg. 23	See comment for 5.5.1.2.	

Num.	Agency	Page	Comment Summary	Response Summary
	3/23/01	FSCD 5.5.2.2 Para 2		
247.	BLM - T. Raml 3/23/01	Pg. 23 FSCD 5.5.2.2 Para 3	Timelines for beginning and completing each step of the IFIM, as well as for initiating consultation with agencies, should be included in this discussion. The range of alternatives to be analyzed with IFIM is not discussed. As with other proposed modeling efforts discussed in the FSCD, alternatives should include the status quo as well as predevelopment conditions.	See study 1.12 *Instream Flow Analysis*.
248.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 5.5.2.3 Para 1	Use of the data collected for the Salt Caves IFIM may not be appropriate. *See letter for more.*	See study 1.12 *Instream Flow Analysis*.
249.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 5.5.2.4 Para 1	Because of their relative scarcity and importance to wildlife and water quality, riparian ecosystems are an important resource in the project area (as discussed in section 6.5.2). The instream flow studies should be conducted in such a manner that they will be applicable to riparian vegetation as well as fisheries and recreation.	See study 2.2 *Wetland and Riparian Plant Community Characterization.*
250.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 6.1.1 Para 5	Factors that contribute to degraded conditions also include changes in flow regime and its effects on riparian vegetation.	Comment noted.
251.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 6.1.1 Para 5	Noxious weeds are mentioned as a factor contributing to degraded conditions and decline of the original vegetation mosaic, but noxious weeds are not further mentioned as an issue in the FSCD (see Recommended Studies, Noxious Weeds and Invasive Exotic Plants Inventory and Mapping).	Comment noted.
252.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 6.1.1.8	Describe and display on a map the current and potential riparian communities. Where and how extensive are the willow and cottonwood habitats (See Recommended Studies, Riparian Mapping and Characterization and Analysis of Project Effects on Riparian Vegetation	Current riparian communities will be displayed on a map including the willow and cottonwood habitats. Comment noted. Reed canary grass is an indicator of disturbed riparian.

Num.	Agency	Page	Comment Summary	Response Summary
			Communities). Reed canary grass is listed as an "important component" of the riparian community. However, an increased abundance of reed canary grass, as in the Klamath canyon, is indicative of disturbed riparian conditions.	
253.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 6.1.2.2 Para 3	List information and conclusions from current study funded by PacifiCorp, BLM and others. PacifiCorp should update Table 6-3. Summary of Breeding Bird Data Collected for the Salt Caves Project in June 1985, with most commonly found bird species from current studies.	Comment noted. Updated information on avian species will be summarized in the appropriate technical reports and in the draft license application.
254.	BLM - T. Raml 3/23/01	Pg. 24 FSCD 6.1.2.3	The list of references and data in this section omitted the current inventory of herptiles. During the field season of 2000, BLM and PacifiCorp completed the first of at least a two-year herpetological inventory of the upper Klamath River canyon.	Comment noted. Updated information on avian species will be summarized in the appropriate technical reports and in the draft license application.
255.	BLM - T. Raml 3/23/01	Pg. 24-25 FSCD 6.1.2.4 and Table 6-5	The project area falls within the planning area of the Northwest Forest Plan, and Standards and Guides for Survey and Manage and Protection Buffer Species apply. Therefore, Survey and Manage species should be a category of special status species, and Table 6-5 should include fungi, bryophytes, lichens, and vascular plants listed in Table 1-1 of the Record of Decision and Standards and Guides of the Supplementary Environmental Impact Statement for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guides (January 2001) which may occur in the project area. *See letter for more.* Gentner's fritillary (*Fritillaria gentneri*) is listed as endangered under the Endangered Species Act by the USFWS, and by the Oregon Department of Agriculture under state authority. Since the Klamath Canyon contains a favorable habitat in the general vicinity of documented sites, this species should also be added to Table 6-5.	Survey and Manage species have been added to tables in the study plan and species corrections were made.

Num.	Agency	Page	Comment Summary	Response Summary
			Calochortus longebarbatus var. *longebarbatus* is listed twice in Table 6-5, once with author citations and once without author citations.	
256.	BLM - T. Raml 3/23/01	Pg. 25 FSCD 6.1.2.4 Para 4	Wildlife should include recent assessment of potential peregrine habitat by Pagel (BLM 1999).	PacifiCorp will obtain this information from the BLM.
257.	BLM - T. Raml 3/23/01	Pg. 25 FSCD Table 6-5	The table does not include 12 species that are Federal Species of concern and have state status in Oregon. These species have all been documented in the canyon.	PacifiCorp will obtain this information from the BLM.
258.	BLM - T. Raml 3/23/01	Pg. 25 FSCD Table 6-6	The table doesn't follow the State website that was listed as the source. Also the Bank swallow is not a federally listed species.	The new web address was added to the study plan. The bank swallow listing error was corrected in the study plan.
259.	BLM - T. Raml 3/23/01	Pg. 25 FSCD 6.2.2.1 Para 3	The Final Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study identifies several Outstanding and Remarkable Values (ORV's) that need to be protected or enhanced. The Topsy/Pokegama Landscape Analysis also proposes management scenarios that protect and maintain wildlife habitats. Matrix includes most BLM lands above the canyon rim on both sides of the Klamath River between Keno and the state line. Key Watersheds include Spencer Creek.	Comment noted.
260.	BLM - T. Raml 3/23/01	Pg. 25 FSCD 6.3	Upland effects occur due to project roads (including distribution power line roads) which open the area to increased recreational use which may conflict with species management. The use of these roads for maintenance activities also contributes to the spread of noxious weeds, which decreases quality of habitats.	Comment noted.
261.	BLM - T. Raml 3/23/01	Pg. 26 FSCD 6.3.1	PacifiCorp should discuss the positive aspects of unique habitats provided by structures such as use of buildings by bats, cliff swallows, nest sites on power poles, etc. How will these uses be enhanced and managed (i.e. addition of bat boxes, protection of	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			swallow nests, etc.)? Management of fuel loading, wildfire, grazing plans, treatment of noxious weeds, and recreational activities associated with roads needs to be addresses. These activities in the project area and on PacifiCorp lands, whether used as part of the project or as a potential part of the mitigation, could affect wildlife resources or habitat. These potential effects are important especially in the "wild and scenic" sections.	
262.	BLM - T. Raml 3/23/01	Pg. 26 FSCD 6.3.4	Reference is made to the potential impacts of flumes, canals, and the wood stave pipe upon movement of wildlife; however, the magnitude of the issue is not known. BLM recommends a study be conducted to identify and document where problem areas. See the recommended study titled "Determine impacts of all project diversions, canals, and flumes upon wildlife species".	Study 2.5 *Wildlife Movement/Connectivity Assessment* includes an evaluation of the potential impact of Project waterways.
263.	BLM - T. Raml 3/23/01	Pg. 26 FSCD 6.3.5	Maintenance activities along roads and transmission lines associated with the project are stated to cause disturbance and impacts to native plants. However, PacifiCorp failed to mention that the indirect impacts of this disturbance results in the establishment and persistence of noxious weeds which impacts native plants and plant communities and thereby degrade wildlife habitat. These disturbed roadsides and utility right-of-ways- have been shown to be major corridors for the dispersal of noxious weeds and other invasive plant species, and should be considered as a potential detrimental impact to botanical and wildlife resources.	Comment noted. The potential effects of the Project and noxious weeds will be discussed in the results from study 2.7 *Noxious Weed Inventory* and the draft license application.
264.	BLM - T. Raml 3/23/01	Pg. 26 FSCD 6.4.1.1	A vegetation map at a scale of approx. 1:7,168 was produced in the Application for License, Salt Caves Hydroelectric Project, Volume II: Exhibit E, 3 (City of Klamath Falls 1986). Although the map units are fairly simple, this map might be a good starting point for the proposed vegetation mapping study. *See letter for more.*	Comment noted. Map scales will be evaluated for presentation in technical reports and the draft license application.
265.	BLM - T. Raml	Pg. 27	There is a known population of the lady slipper orchid	PacifiCorp will obtain location data from the BLM.

Num.	Agency	Page	Comment Summary	Response Summary
	3/23/01	FSCD 6.4.1.3	(Cypripedium montanum) within the Klamath River canyon. Precise locations are known for several special status plant populations on BLM lands adjacent to the project area, and associated habitat information has been recorded and stored in botanical files at the KFRA. *See letter for more.*	
266.	BLM - T. Raml 3/23/01	Pg. 27 FSCD 6.5.1.1	There is now a Federal standard for plant community mapping which is supported by a number of Federal agencies, including the BLM, U.S. Forest Service, and National Parks Service. The standards use a hierarchical approach to the classification of vegetation that is applicable at a range of map scales. These standards can be found on the internet at Federal Geographic Data Committee website: http://www.fgdc.gov/standards/documents/standards/vegetation/ Gregg Riegel, a USFS ecologist located at the Deschutes National Forest Supervisor's Office in Bend, Oregon, has developed a classification system for riparian plant communities which he has applied to both USFS and BLM land in Klamath and Lake Counties and in Central Oregon national forest lands. This classification system should be considered for the riparian portion of the vegetation mapping study.	Comment noted. PacifiCorp's vegetation typing will fit within the FGDC standards. PacifiCorp will contact Greg Riegel to discuss applicability of his system for the riparian portion of the vegetation typing. See study 2.1 *Plant Community/Wildlife Habitat Inventory and Mapping*.
267.	BLM - T. Raml 3/23/01	Pg. 27 FSCD 6.5.1.2	The area to be mapped should include the Klamath River canyon from rim to rim. This will provide a natural topographic and edaphic boundary to the mapped area, instead of an arbitrary 0.25-mile corridor.	This area will be mapped as a secondary study area in study 2.1 *Plant Community/Wildlife Habitat Inventory and Mapping*.
268.	BLM - T. Raml 3/23/01	Pg. 27 FSCD 6.5.1.3	True color aerial photographs at the 1:12,000 scale do not provide the resolution necessary to map wetland and riparian vegetation (Clemmer 1994). See BLM's recommended study title "Riparian Mapping and Characterization. "	Additional larger scale photos of riparian will be used to supplement the 1:12,000 photos.
269.	BLM - T. Raml 3/23/01	Pg. 27 FSCD 6.5.2.1 Para 1	The extent of wetlands in the project is not limited to the immediate vicinity of the river and reservoirs. According to National Wetland Inventory maps for the Oregon portion of the project area, Palustrine wetlands	All wetlands in the vicinity of Project facilities including Project roads, and those along the river corridors will be mapped within the primary study area. These areas are where the Project has the potential to effect the wetlands.

Num.	Agency	Page	Comment Summary	Response Summary
			(including "Emergent Wetland" and "Unconsolidated Bottom" types) occur near the project roads. As such, there is potential for project affects on these wetlands. It is unclear whether the definition of "major wetland and riparian communities" includes only the largest wetlands, only the most common wetlands or both. None of the possible definitions are acceptable; all wetlands in the project area should be included in the proposed study.	
270.	BLM - T. Raml 3/23/01	Pg. 27-28 FSCD 6.5.2.3	No assumptions are listed for the "Wetland and Riparian Plant Community Characterization"; however, it is stated that these community types will be identified during cover-type mapping described in Section 6.5.1. In that section, the assumption is that true color aerial photographs will be sufficient. See our comments on this assumption under 6.5.1.3.	Comment noted. See above comments.
271.	BLM - T. Raml 3/23/01	Pg. 28 FSCD 6.5.3.2	Information on culturally significant plants might be obtained from studies conducted under Joanne Mack from Clairmont College (cited in your references) by Don Todt, a professional horticulturist form the City of Ashland. This information could be used to help "address" these species and the impacts of the project on them.	Comment noted. PacifiCorp will check these sources.
272.	BLM - T. Raml 3/23/01	Pg. 28 FSCD 6.5.3.2	It would be best for special status plant surveys to cover the entire project area, since habitats for plant species are not well defined, even while they are focused on documented habitats for target species. Target species should include Survey and Manage (S&M) species suspected to occur in the project area.	Comment noted. PacifiCorp will attempt to cover as much area as possible between survey sites but will still rely on surveys of likely habitat. An experienced botanist will cover the most likely habitats, especially in areas that are most likely to be impacted by the Project. A map of the areas surveyed will be provided for future reference.
273.	BLM - T. Raml 3/23/01	Pg. 28 FSCD 6.5.3.3	The proposed study may be insufficient to address TES species because of the assumption that sampling protocols require only on full field season of data collection and that data collection can start in mid-summer. The timing of surveys differs among species depending upon their life histories. Since the results of many types of surveys depend on the species' defense	Comment noted. PacifiCorp will refine the TES study plan and discuss species, timing of the surveys with the BLM and other agencies.

Num.	Agency	Page	Comment Summary	Response Summary
			of their breeding territories for detection, the frequency of nesting/breeding needs to be considered; not all species nest on an annual basis due to the influences of weather, food availability, and other factors. Due to the variability between the reproductive cycles of different species, a minimum of two full years of surveys is necessary for some species, whereas additional years are necessary for other species. Surveys should be conducted according to approved and accepted protocols, which are available.	
274.	BLM - T. Raml 3/23/01	Pg. 28 FSCD 6.5.3.3	Survey protocols have been developed for S&M plant species (fungi, bryophytes, lichens and vascular plants) which can be used to survey the project area for special status plant species. The vascular plant S&M survey protocols were developed using agency protocols for other categories of special status plants, and therefore would be appropriate to use for all special status plant categories in the project area. Fungi mollusk surveys, if required by the Record of Decision and Standards and Guides of the Supplemen-tary Environmental Impact Statement for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guides (January 2001), may need more than one field visit and may need to be conducted in the spring and/or fall.	Comment noted. PacifiCorp will consider S&M protocols and timing requirements when refining the study plan.
275.v	BLM - T. Raml 3/23/01	Pg. 28 FSCD 6.5.4.2	It is indicated that studies are likely to focus on wetland and riparian habitats and other near-shore environments since most impacts are expected to be associated with water level fluctuations. Upland habitats and the effects of other project facilities and operations should also be addressed. We recommend that the study encompass the entire stretch of the Klamath River and its adjacent habitats. This would likely include the reach from the Link River dam downstream to Ash Creek, which is the southern extent of the Redding District BLM. Methods should be similar to those used in the BLM/PacifiCorp study of 2000-2001 so that the data are compatible.	The inventory will focus on habitats and sites most directly affected by Project operations including upland habitats. The BLM inventory area/results will be used as a starting point from which additional inventory information will be gathered to fill gaps related to the Project. Some inventory methods will be similar to those used in the BLM study to enable comparison of results.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
276.	BLM - T. Raml 3/23/01	Pg. 29 FSCD 6.5.5	The literature review on the effects of reservoirs on big game movement should also include the importance of various plant communities to big game both on the current and historic landscape. This should be tied back to the vegetation study (6.5.1).	Comment noted. Information on the various plant communities that are important to big game will be gathered in study 2.6 *Wildlife Habitat Association Assessment and Synthesis of Existing Botanical and Wildlife Information*.
277.	BLM - T. Raml 3/23/01	Pg. 29 FSCD 6.5.5.3	The key assumption is that existing information is adequate to draw reasonable conclusions regarding potential reservoir impacts upon big game. If it is found that existing information is inadequate, PacifiCorp should study the deer herd(s) which utilize the area between Link River dam and Iron Gate dam. ODFW, BLM and CDFG should be consulted to discuss recommended study plans to adequately assess the direct and indirect impacts of the reservoirs on deer. PacifiCorp's proposed literature review should include an analysis of effects upon migration, access to important wintering and fawning areas (including information on how the timing of reaching these areas may be affected), and potential loss of individuals to drowning.	Comment noted. See study 2.5 *Wildlife Movement/Connectivity Assessment*.
278.	BLM - T. Raml 3/23/01	Pg. 29 FSCD 7.1 Para 1	The introduction fails to mention that the prehistoric, historic, and Native American traditional use resources found in the canyon were highlighted as Outstanding Remarkable Values in the Wild and Scenic River designation.	Comment noted.
279.	BLM - T. Raml 3/23/01	Pg. 29 FSCD 7.1.1 Para 4	The Area of Potential Effect (APE) is described as the area that extends up to .25 mile away from the river bank or project reservoir shoreline. Which project reservoir? The APE needs to be clarified and should be expanded to include the entire river. For example, all roads that PacifiCorp uses to access facilities, properties, and power lines should be included in the APE. As the APE now stands, the impact of roads is not addressed.	See studies 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis* and 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study*. PacifiCorp will include roads associated with the Project operations.
280.	BLM - T. Raml 3/23/01	Pg. 29 FSCD	It was stated that there are 115 known cultural sites in the APE. On whose lands do these sites occur?	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*

Num.	Agency	Page	Comment Summary	Response Summary
		7.1.1 Para 5		
281.	BLM - T. Raml 3/23/01	Pg. 29 FSCD 7.1.1 Para 6	The brief analysis of recorded sites lacks reference. An arbitrary "total number" means little. Instead of a number, list the sites that were counted under each category and display the information in a table format. The site's Smithsonian or agency number and name would be sufficient. Avoid disclosing site location to prevent violating Section 304 of the National Historic Preservation Act.	Comment noted.
282.	BLM - T. Raml 3/23/01	Pg. 29 FSCD 7.1.2	Historic Klamath hydroelectric project facilities are described, but there is no mention of other types of non-project historic structures/resources that may fall within the APE.	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
283.	BLM - T. Raml 3/23/01	Pg. 30 FSCD 7.1.3 Para 2	Word usage is awkward and confusing. Contrary to the first sentence of this paragraph, there are no federally recognized tribal reservation lands at this time within the APE. In addition, stated former tribal land acreage does not match our references. In the 1864 Klamath Lake Treaty, the Klamath Tribe, the Modoc Tribe and the Yahooskin Band of the Snake River Indians ceded more than 13 million acres (not 22 million or 18 million) to the United States leaving the tribes reservation lands of about 1.1 million (not 2.2 million) (Zucker et al. 1983:107). Technically, the contemporary Klamath lost their federal status, treaty rights, and most of their reservation land when Congress passed the Termination Act: 25 USCS-564 in 1954. Not all of the reservation lands acquired were converted into the Winema National Forest. *See letter for additional reference material.*	Comment noted.
284.v	BLM - T. Raml 3/23/01	Pg. 30 FSCD 7.1.3 Para 3	It should be noted that they're presently exists a good working relationship between the Tribes and the BLM, USFS, and other agencies, not just the BIA.	Comment noted.
285.	BLM - T. Raml	Pg. 30	Since the Karuk, Hoopa, and Yurok tribes expressed	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/23/01	FSCD 7.1.3 Para 6 & 7	interest in cultural resource management relicensing issues, expand this paragraph to describe the connection they have with the Upper Klamath River canyon and APE. Acknowledge all tribal use.	
286.	BLM - T. Raml 3/23/01	Pg. 30 FSCD 7.1.3	The cultural resource conditions in the Klamath hydro-electric project area is described as "fair". What exactly does "fair" mean? Try not to leave the condition of the cultural resources open to interpretation. Be more specific. Taking into account the primary concerns does past and current management practices successfully protect cultural resources or not? Describe past and current management practices and list, if any areas that need improvement.	Comment noted. See Cultural Resources studies.
287.	BLM - T. Raml 3/23/01	Pg. 30 FSCD 7.3.4	Recreation and pot hunting/vandalism are listed as the two largest issues" affecting cultural resources. Although there is no disagreement with this statement, the paragraph needs more development. Why are these issues the largest? Describe in detail how cultural resources are being damaged by recreation using specific examples.	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
288.	BLM - T. Raml 3/23/01	Pg. 30 FSCD 7.4.2	PacifiCorp does not state that a Cultural Resource Management Plan (CRMP) will be developed anywhere in the text before the "Proposed Studies" section. Section 7.4.2 would be a good place to introduce the concept of a CRMP and provide an outline of what the plan addresses. For example, does the plan identify which agency is responsible for cultural site protection in the canyon? Does the plan address site-monitoring issues?	A Historic Resources Management Plan is expected to be developed as part of new license.
289.	BLM - T. Raml 3/23/01	Pg. 31 FSCD 7.4.3	The discussion states that only three archaeological and historical context documents exist. Additional references do exist. *See letter for list of reference material.*	Comment noted.
290.	BLM - T. Raml 3/23/01	Pg. 31 FSCD 7.5.1.3	If the APE is used to construct a prehistoric and historic context statement, then it should be expanded to include the entire upper Klamath River basin. This	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			would provide a more complete context statement. As it now stands, the APE is a very small study area.	
291.	BLM - T. Raml 3/23/01	Pg. 31 FSCD 7.5.2.2	Consult with agencies when developing methodologies for conducting cultural resource pedestrian surveys. Incorporate tribal involvement in survey crews. Insure that the Secretary of Interior's Standards and Guidelines for archaeological survey practices are followed. *See letter for website.*	Cultural Resources study plans were developed collaboratively.
292.	BLM - T. Raml 3/23/01	Pg. 31 FSCD 7.5.3.1	Insure that all aspects of traditional cultural use are analyzed, such as vegetation use, hunting and gathering, trading, activity locations, religious locations and scenic value in addition to fish resources. Look at the whole landscape. Start Section 106 consultation, coordination and working groups as soon as possible. Insure that archival research and tribal interviews follow the Secretary of Interior's Standards and Guidelines for archaeological survey practices. Consult with agencies when developing methodologies.	See Cultural Resources studies.
293.	BLM - T. Raml 3/23/01	Pg. 32 FSCD 8.1.1	*See letter for list of other regional recreation facility providers.* The BLM has other land management responsibilities that should be included in the regional overview. For a review of Klamath Falls BLM recreation facilities refer to the Klamath Falls Resource Area ROD and RMP, pages 47-53.	Comment noted. This information will be included in future documents including draft and final applications.
294.	BLM - T. Raml 3/23/01	Pg. 32 FSCD 8.1.2.2	Access to the Keno reservoir dam area also provides bank fishing, hunting and trapping, hiking, and whitewater boating opportunities on the river and adjacent lands below the dam.	Comment noted. This information will be included in future documents including draft and final applications.
295.	BLM - T. Raml 3/23/01	Pg. 32 FSCD 8.1.2.3	Directly across from Pioneer Park on J.C. Boyle reservoir are some undeveloped PacifiCorp lands which BLM recreation staff have observed receiving considerable, concentrated use by the public. Problems recognized by the BLM include littering, lack of restroom facilities, parking, and on-site management. Klamath County Sheriff's Office may be able to provide additional information and records on the type	This area is included in the recreation studies and will be surveyed as a dispersed use site. PacifiCorp will contact the Klamath County Sheriff to inquire on activity at the site. The Recreation Resource Management Plan will describe management actions for this site.

Num.	Agency	Page	Comment Summary	Response Summary
			of law enforcement actions that have occurred on this site. The BLM believe this area needs further analysis on how to manage the current recreation uses and what facilities, if any, should be provided.	
296.	BLM - T. Raml 3/23/01	Pg. 32 FSCD 8.1.2.4	The 2nd paragraph, last sentence should include: Also, the BLM and PacifiCorp have a shared management responsibility and ownership for the Stateline River Access site. BLM facilities at this site include two outhouses on the upper bench and two seasonal portable toilets on the lower bench on the PacifiCorp portion of the site. A site plan for Stateline River access is under development. The area contains sensitive cultural resources, necessitating consultation in development of this area. The 3rd paragraph should state that the Wild and Scenic River reach is cooperatively managed by the BLM and State of Oregon, Parks and Recreation Department (OPRD). The 4th paragraph should include: The PacifiCorp road leading from J.C. Boyle dam area, along the bypass canal, past the powerhouse, to the Frain Ranch area is a project facility contained in the current FERC license and the right-of-way license agreement with BLM. This road has created and improved access to a wide-spectrum of recreational uses, including whitewater rafting, bank fishing, primitive camping, sightseeing, mountain biking, off-highway vehicle use, hunting and other uses. PacifiCorp provides a double vault toilet (currently closed due to repeated vandalism) and three primitive, fire-safe campsites in the Frain Ranch area below J.C. Boyle dam. The 5th paragraph should include: In recent years, fishing access 1 was improved to provide a safer parking and loading area for whitewater boaters. Access 1 receives the heaviest use of all the fishing access points, estimated by BLM to be 5000 visitors; peak use occurs during the summer months and is	Comment noted. This information will be included in future documents including draft and final applications.

Num.	Agency	Page	Comment Summary	Response Summary
			primarily fishing and whitewater rafting.	
297.	BLM - T. Raml 3/23/01	Pg. 33-34 FSCD 8.2.2.1	The KFRA RMP lists some specific management actions, which are important to mention here. The management and operation of adjacent PacifiCorp lands, roads and facilities may affect the BLM's ability to meet its specific land management objectives. *See letter for specific issues and actions.* The document should recognize the management of Redding Field Office BLM lands located in the area between Oregon-California state line and Copco reservoir. *See letter for list of area decisions for the Upper Klamath River.*	Comment noted. This information will be included in future documents including draft and final applications.
298.	BLM - T. Raml 3/23/01	Pg. 35 FSCD 8.3.1	The BLM has additional comments on the conclusion that "Overall, recreation resource conditions at the Klamath hydroelectric project are good. " While many recreation opportunities have been provided as a direct result of project recreation facilities, project operations and facilities have created many additional (unanticipated) recreation opportunities. *See letter for more.* The FERC project boundary should be modified to include roads and other facilities that are a direct result of project development and have current PacifiCorp maintenance responsibilities. This should include all river reaches between Link river and Iron Gate dams.	Comment noted. This information will be included in future documents including draft and final applications. So noted. PacifiCorp will consider in review of FERC boundary revision.
299.v	BLM - T. Raml 3/23/01	Pg. 35 FSCD 8.3.3	The BLM has received public comments about a problem that limits the use of the improved boat ramp located on the east shore of J.C. Boyle reservoir. During periods of high spring runoff and high reservoir levels, boater access to the lower part of the reservoir (below the Highway 66 bridge) is restricted due to insufficient clearance for boats to pass under the bridge. Boater access to this area is restricted until reservoir levels drop, as the unimproved ramp at Pioneer Park limits access to many boaters. The BLM's Topsy reservoir campground and boat ramp is typically	Duly noted. This information will be included in future documents including draft and final applications.

Num.	Agency	Page	Comment Summary	Response Summary
			closed until late May, making this boat ramp unavailable for public use.	
300.	BLM - T. Raml 3/23/01	Pg. 35 FSCD 8.3.4	The BLM is aware that the State of Oregon has analyzed the instream flow requirements for recreation on the Klamath River Scenic Waterway. In addition, OPRD and ODFW have submitted to the Oregon Water Resource Department an instream water right for sufficient flows in the Upper Klamath River for 1500 cfs (when available) for whitewater floating and 550 cfs for fishing. The availability and timing of sufficient water releases for recreation, boating, and scenic enjoyment are critical to maintaining and enhancing these outstandingly remarkable values. *See letter for more.*	Comment noted. This information will be included in future documents including draft and final applications. These issues will also be addressed in the Recreation Resource Management Plan. Water right claims will be addressed in Oregon's Klamath Basin water rights adjudication process.
301.	BLM - T. Raml 3/23/01	Pg. 36 FSCD 8.3.5	The BLM is aware of other project-related maintenance activities, involving road grading and clearing of rock fall between J.C. Boyle dam and the powerhouse. Additional clearing of rock fall for access to power lines and to the Stateline substation area also occurs. This activity has provided a positive benefit to recreationists by providing a maintained access road to the BLM's boater access site, and continued access to the more primitive areas farther downstream.	Comment noted. This information will be included in future documents including draft and final applications. These issues will also be addressed in the Recreation Resource Management Plan.
302.	BLM - T. Raml 3/23/01	Pg. 36 FSCD 8.3.6	In addition to vandalism, the BLM is aware of other effects of project lands and facilities on recreation resources. Unregulated off-highway vehicle use, cultural site disturbances (intentional and unintentional), concentrated use leading to site degradation unregulated target practice shooting and poaching occurs in the Frain Ranch area. The restroom at Frain Ranch has received various acts of vandalism over the past few years, and was recently closed to use. This area receives considerable use from campers, whitewater boaters, and other day users (estimated by BLM to be over 5.000 visitor use days during the summer months). There is a strong need for restroom	Comment noted. This information will be included in future documents including draft and final applications. These issues will also be addressed in the Recreation Resource Management Plan. See Recreation Resource studies.

Num.	Agency	Page	Comment Summary	Response Summary
			facilities, site maintenance, an on-site presence and possible additional facility development in the Frain Ranch area.	
303.	BLM - T. Raml 3/23/01	Pg. 36 FSCD 8.3.6	PacifiCorp should consider additional steps to reduce vandalism, at Frain Ranch and at other project facilities.	Comment noted. This information will be included in future documents including draft and final applications. These issues will also be addressed in the Recreation Resource Management Plan.
304.	BLM - T. Raml 3/23/01	Pg. 36 FSCD 8.3.6	An identification of unneeded or duplicate access roads should be undertaken, along with a plan for rehabilitating, blocking and monitoring closed roads. Additional regulation efforts and more coordinated law enforcement should be considered to reduce unregulated target shooting, poaching and other acts of vandalism.	An inventory of project related roads will be completed to provide information on road type, design, use, erosion, stream crossing and land management issues. This information will be made available to other studies such as water quality, recreation, terrestrial, and fisheries. Increased regulation and coordinated law enforcement will be investigated for situations where problems are identified. See study 4.2 *Inventory of Klamath Hydroelectric Project Roads.*
305.	BLM - T. Raml 3/23/01	Pg. 36 FSCD 8.3.6	BLM would like to know what plans PacifiCorp has for the old employee housing site located adjacent to the J.C. Boyle powerhouse. If PacifiCorp is finished with the site, will they be including this in their license application?	The old housing site (BLM) will be evaluated during the relicensing process for operation as well as other relicensing purposes. It is one of the few level sites in the area of the Powerhouse.
306.	BLM - T. Raml 3/23/01	Pg. 36 FSCD 8.3.6	BLM is also concerned with the potential for catastrophic wildfire in the canyon and impacts to the recreation experience, scenic quality and aesthetics. A coordinated effort with responsible federal, state and local agencies should be undertaken to reduce this potential for catastrophe. *See letter for more recommended efforts.*	PacifiCorp shares this concern and is open to further discussions with relevant agencies on reducing fire hazard.

Num.	Agency	Page	Comment Summary	Response Summary
307.	BLM - T. Raml 3/23/01	Pg. 37 FSCD 8.3.7	BLM would like PacifiCorp to identify and analyze the need for replacing former and current bridges below J.C. Boyle dam in the proposed recreation studies.	The J.C. Boyle license and FERC boundary included the road from J.C. Boyle Powerhouse to Copco. This road was used for project purposes during the construction of J.C. Boyle. Since J.C. Boyle has been constructed PacifiCorp has used the Copco Road connecting to State Highway 66. We no longer have a need for the project road and bridge over the Klamath and do not intend to replace it. The FERC boundary has been revised to delete this road and bridge. The other bridges across the Klamath River are not used in connection with project operations and are primarily intended for ranch operations. PacifiCorp has participated in the BLM's road inventory of roads and trails in the Wild & Scenic management plan study area. The results of these studies will be considered in the management of these roads and bridges while in PacifiCorp ownership.
308.	BLM - T. Raml 3/23/01	Pg. 37 FSCD 8.3.7	BLM would like PacifiCorp to assess and identify trail needs in their recreation studies.	PacifiCorp will evaluate Project related trail opportunities and needs on Project lands and coordinate this evaluation with BLM as they manage large tracts within the Project vicinity.
309.	BLM - T. Raml 3/23/01	Pg. 37 FSCD 8.3.8	Summer algae blooms create floating mats of debris, presenting an unsightly and smelly mess. As reservoir levels drop, debris mats are deposited around Topsy reservoir, including Topsy recreation site, creating a slippery mess on the shoreline and boat ramp, with a similar problem on Copco and Iron Gate reservoirs.	PacifiCorp has incorporated a question into the recreation user questionnaire asking if water quality is adversely affecting Klamath Project recreation user experiences.
310.	BLM - T. Raml 3/23/01	Pg. 37 FSCD 8.4	Additional reference material noted.	Comment noted. This information will be included in future documents including draft and final applications.
311.	BLM - T. Raml 3/23/01	Pg. 38 FSCD 8.5.1	Little information is given on study methodology. In general, the study should provide a broad perspective on whitewater-boating (rafts, kayaks and canoes) in the project area, which primarily occurs in the summer months, but also attracts spring and fall boaters. The study should identify minimum acceptable and optimum flows, identifying the preferences of the boaters.	See study 3.1 *Recreation Flow Analysis.*
312.	BLM - T. Raml 3/23/01	Pg. 38 FSCD 8.5.1	The 2nd paragraph mentions the study will identify current flow levels. The 3rd paragraph says the study will evaluate existing river flows. The study must evaluate the historic operations and flow releases,	See study 3.1 *Recreation Flow Analysis*. The study will consider a range of flows, duration and timing.

Num.	Agency	Page	Comment Summary	Response Summary
			especially the timing and duration of releases. How are current or existing flow levels affecting whitewater boating opportunities compared to the recent past? How will the study be modified if predicted drought conditions or proposed operational changes limit flow releases?	
313.	BLM - T. Raml 3/23/01	Pg. 38-39 FSCD 8.5.1	The recreation flow analysis study needs to address not only the effects on whitewater boating opportunities (for both commercial and private boaters), but also the economic impacts to these user groups when flow changes are implemented. What effect will flow changes have on commercial rafting company revenues and operations? What would be the economic benefits if flow releases were designed to maximize whitewater boating, and how would PacifiCorp revenues be affected? The study should also identify what other equivalent whitewater boating opportunities would be available at the time flow changes are implemented.	See study 3.1 *Recreation Flow Analysis*.
314.	BLM - T. Raml 3/23/01	Pg. 39 FSCD 8.5.1	The study should identify how flow changes will affect user group experiences, and experience expectations while floating the river. How will these visitor experiences be affected by operational changes? Also, the study should be expanded to show how flow changes would affect other significant instream recreation users, their experiences and opportunities, for fishermen, swimmers, etc. How will flow changes impact shoreline cultural sites and/or visual/scenic quality?	See study 3.1 *Recreation Flow Analysis*.
315.	BLM - T. Raml 3/23/01	Pg. 39 FSCD 8.5.1	BLM also suggests that PacifiCorp analyze the whitewater-boating opportunities and flow studies for all other reaches of the Upper Klamath River, including the Link River, Keno reach, the Boyle bypass reach, and the diversion canal. As some whitewater-boating use presently occurs on these river reaches, operation or flow changes may have an effect on these opportunities. How would these whitewater boating	See study 3.1 *Recreation Flow Analysis*.

Num.	Agency	Page	Comment Summary	Response Summary
			uses be affected by run-of-the-river type flows? What are the opportunities to improve boater access on these reaches?	
316.	BLM - T. Raml 3/23/01	Pg. 39-40 FSCD 8.5.2	PacifiCorp proposes a user study for lake based recreation only. Little information is given on study methodology, i.e. how and when the study will be conducted, what study method will be followed, how present and future recreation use will be estimated, etc. BLM recommends the study scope must be expanded for a variety of reasons. *See letter for reasons.*	PacifiCorp will conduct a user survey for Project related recreation uses in the Project area, including river opportunities where appropriate. See study 3.2 *Recreation Visitor Surveys.*
317.	BLM - T. Raml 3/23/01	Pg. 40 FSCD 8.5.1	BLM would like to review the proposed study design and methodology prior to commencement of the study process.	Study design will be provided in greater detail in the Study Plans. BLM will have opportunity to review.
318.	BLM - T. Raml 3/23/01	Pg. 40 FSCD 8.5.3	In developing this recreation analysis, PacifiCorp should expand the regional boundaries of their study (beyond the proposed 50 miles) when looking at other similar whitewater boating opportunities. As the Upper Klamath River draws whitewater boaters from throughout the west coast area, the regional analysis of whitewater boating should be expanded accordingly. In addition, other recreation opportunities and experiences (such as primitive camping and fishing experiences) found along the Upper Klamath River may not be found within a 50-mile regional radius boundary. The regional boundaries for fishing and other activities should be adjusted to reflect these outstanding recreation values. The key assumption that all consulting agencies have prepared a recreation plan for the facilities under their responsibility may present problems for this analysis. Not every entity within the analysis region may have completed a recreation plan, or have an up-to-date recreation plan.	See study 3.3 *Regional Recreation Analysis.* The regional recreation analysis is intended to focus on similar project-related recreation resources in the surrounding area, not a multi-state assessment such as the entire West Coast. The study area (approximately a 50-mile radius of the river) will include significant visitor destinations focusing on water-based reservoir recreation. PacifiCorp believes that this study area is appropriate for analyzing project-related recreation resources immediately adjacent to the project to better understand its context. In addition, several other rivers included in the study area related to whitewater boating and fishing are the Rogue, CA-Salmon, Pit, Scott, and Trinity rivers.
319.	BLM - T. Raml 3/23/01	Pg. 41 FSCD 8.5.4	Due to the amount and types of more primitive recreation that occurs on Project lands, more primitive sites, facilities, and dispersed use areas should also be assessed. Inventory identifying areas of excess	Dispersed use areas associated with the Project will be assessed. Recreation facility maintenance will be assessed. Regarding future facility maintenance and other concerns, PacifiCorp will address such issues in the Recreation Resource Management Plan and the draft and

Num.	Agency	Page	Comment Summary	Response Summary
			disturbance due to use, and areas where primitive camping or lunch stops are occurring will be helpful in analyzing what additional management actions or facilities need to be provided on project lands. The inventory should also assess the present level of recreation facility maintenance. Problem areas and maintenance recommendations should be addressed. How will PacifiCorp maintain their facilities, ensure adequate funding and personnel, and monitor recreation uses on project lands in the future?	final license applications.
320.	BLM - T. Raml 3/23/01	Pg. 41 FSCD 9.2.1	The FSCD should identify the management of Redding District BLM lands located in the area between the Oregon-California state line and Copco reservoir. The Record of Decision for the Redding Resource Management Plan (July 1993) lists several management area decisions for the Upper Klamath River. They are listed in the comments to section 8.2.2.1.	PacifiCorp will continue to cooperate with BLM's Redding District in the management of the Klamath River Complex Special Recreation Management Area. In particular we will continue to honor the Cooperative Agreement we have with BLM for coordinated recreation trail and facility development. PacifiCorp assumes that the other commitments in the KFRA RMP will be affected by the sale or exchange of PacifiCorp's ranch lands and the results of the Record of Decision for the Klamath River Wild and Scenic Recreation Plan.
321.	BLM - T. Raml 3/23/01	Pg. 41 FSCD 9.5.2	Viewpoints of project facilities should encompass Topsy road, J.C. Boyle to state line road, and the road parallel to the bypass canal. Viewpoints should also take in bank fishing and whitewater boating (on the river). The study should address the effect project features have on visitor satisfaction, experience and experience expectations. How these facilities are maintained can affect aesthetic/visual resources. What effect will flow changes have on aesthetic/visual/olfactory resources? The study should consider using a photo inventory, showing key observation points along river segments and reservoirs.	The visual resources study will include a photo inventory of both riverine and reservoir settings. Project affected reaches including the hells corner reach, Keno reach and all bypass reaches will be documented for a range of flows. Photos will be taken from key observation points that are accessible by the public. Project facilities will be evaluated on how they blend with the surrounding landscape. PacifiCorp is in the process of developing a detailed methodology for this study and will consult with interested agencies on methodology before the study is implemented.
322.	BLM - T. Raml 3/23/01	Pg. 42 FSCD 10.1.6 Para 2	The baseline for evaluating the Project should be pre-project conditions, subsequent to the development of the USBR Klamath Project. BLM recommends an evaluation of the ecological processes and functions in the absence of the Project to assess the effects of continuing project impacts. This evaluation is	PacifiCorp will not evaluate according to preproject conditions. In some studies we will review without project but not preproject.

Num.	Agency	Page	Comment Summary	Response Summary
			necessary to determine if continued project impacts would allow conditions to move within their natural ranges of variability. The BLM would like to participate in the determination of baseline conditions and the range of alternatives.	
323.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 43 Recommended Study 1.1	**Climatologic and Hydrologic Analysis - Methodology**. This study will focus on the cumulative and incremental hydrologic effects of project developments. The study will include the entire length of the Klamath River (mouth to RM 254), as well as the portions of Fall Creek and Spring Creek/Jenny Creek that are downstream from the project developments. The study will include the period of record for USGS and PacifiCorp gages within the study area, and may require installation of additional temporary gages for the life of the study. 1. Compile and analyze climatologic data for the study area. Since the Upper Klamath basin may supply up to 30 percent of summer flow (Ayres Associates 1999, p. 7.2), and downstream tributaries are important for attenuating project effects, it is necessary to conduct climate analysis for the entire Klamath basin. Using data from as many climate stations as necessary, develop a statistically valid precipitation index that can be used to categorize water years according to deviation from mean annual precipitation (e.g., "very dry" to "very wet"). 2. Compile and analyze hydrologic data for gages on the Klamath River, Fall Creek, and Spring Creek/Jenny Creek. Transform USGS gage data into water years and calculate water year and seasonal descriptive statistics (maximum, minimum, and mean daily flows) and flow duration curves. Us this data (and, where appropriate, USGS 30-minute data) to quantify and describe, for each type of water year (categorized	See study 1.4 *Analysis of Project Effects on Hydrology* for a detailed description of hydrology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on hydrology will be included in the Water Use and Quality technical report and draft and final applications. Regarding the study area, the hydrologic analyses will be most focused in the Project area from Link River dam to just below the Iron Gate dam and powerhouse. It is in this area that PacifiCorp operations have the most direct and varied potential effects on flows. However, some tasks described in this study plan will incorporate a broader basin-wide area to enhance perspective and context for the Project setting and potential Project hydrologic effects. For example, the assessment of effects on the long-term (monthly, seasonal, and annual) hydrologic regime (section 1.4.3.2) will include an analysis of USGS data from gages in the lower basin to quantify the relative contribution of flow from Iron Gate dam to lower basin flows in different water year types. PacifiCorp will consider adjustments in the study area as needed based on the extent of identified Project impacts as results of the analyses are completed. PacifiCorp plans to compile and analyze hydrologic data in similar manner as described in items 2 and 3 of this comment. Much of this information will be needed to address FERC requirements (18 CFR 4.51 and 16.8) for information on water uses in the Project area and coordination of Project operations with other water resources projects. PacifiCorp does not intend to conduct climatological analysis to categorize water years as suggested in item 1 of this comment, but rather will rely on such categorization already done by USBR in development of the KPOPSIM model. PacifiCorp plans to use the KPOPSIM to "model" and evaluate annual and seasonal hydrographs

Num.	Agency	Page	Comment Summary	Response Summary
			according to the climatologic analysis), project effects on: 2a. Seasonal streamflow patterns (i.e., magnitude and duration of peak and low flows); 2b. Weekly streamflow patterns (i.e., attenuation of flood peaks and alteration of hydrograph recession rates); and, 2c. Daily streamflow patterns (i.e., average daily and instantaneous peak and minimum flows, and daily flow variability). This component of the analysis may be limited to the following gaging stations: Link River (11507500), Keno (11509500), J.C. Boyle powerhouse (11510700), Copco (11512500), Iron Gate dam (11516530), Seiad Valley (11520500), Orleans (11523000), Klamath (11530500), Fall Creek (11512000), and PacifiCorp gages at reservoir forebays. For each type of water year, determine the relative effect of each project development on daily, weekly, and seasonal streamflow patterns. Using information from the detailed hydrologic and geomorphic mapping of the study area (recommended study 2.1), quantify accretions (tributaries and springs) and withdrawals (diversions, floodplain storage, and groundwater losses) within the study area. 3. For each type of water year, determine the cumulative and incremental effect of project developments on each river reach. The cumulative effect will be determined by comparing the analyses conducted for the Link River, J.C. Boyle, Iron Gate, Seiad Valley, and Klamath gages. The incremental effect will be determined by comparing the analyses for gages on sequential developments (e.g., Keno and J.C. Boyle) and PacifiCorp data for forebay inflows and	by water year type, such as suggested in item 4 of this comment. PacifiCorp does not agree it's necessary to "model" weekly and daily hydrographs as suggested in item 4 of this comment. PacifiCorp maintains a database containing hourly operations data at all the project facilities. It includes such information as reservoir elevation, flow through turbines, spill, etc. This data will be used to describe and depict the hydrologic effects of the project at an hourly time step, such as the effect of project operations on reservoir water levels and instream flows. This analysis will be conducted for each project facility in a way that depicts reservoir elevations relative to turbine flows. It will also show minimum instream flow in project reaches below each facility. The analysis will be done for each facility for each water year types. PacifiCorp will create products as needed for related studies, perhaps including products similar to those suggested in item 4 of this comment. The specific type and details associated with these products will be developed as studies and analyses proceed.

Num.	Agency	Page	Comment Summary	Response Summary
			turbine/spillway outflows. Discuss project-related alterations to daily, monthly, seasonal, and annual flow regimes for the Klamath River, Fall Creek, and Spring Creek/Jenny Creek. 4. For each type of water year, model annual, seasonal, weekly, and daily hydrographs for a full range of alternatives, including unimpaired flow. Consult with USBR to incorporate the range of Klamath Project operation plans being discussed for the Klamath Project Long-Term Operations Plan. The model type and temporal resolution will vary according to the time scale being modeled. Annual and seasonal hydrographs can be modeled using a water-balance approach, while weekly and daily hydrograph modeling requires a hydrodynamic model. 5. Create products useful for related studies (e.g., reach-specific flow duration curves, streamflow parameters for use in riparian vegetation analysis, streamflow travel times for a variety of operational releases.	
324.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 46 Recommended Study 2.1	**Hydrologic and Geomorphic Mapping of Project Area**. - **Methodology** Mapping will utilize geo-referenced low level air photos merged into a seamless GIS coverage. Features to be mapped include, but are not limited to, major springs, tributary confluences, diversions, pools, riffles, bars, islands, tributary deltas, bedrock expanses, side channels, floodplains, terraces, and landslide deposits. The area of interest for this study is the main stem and riparian zone of the Klamath River from the mouth to Link River dam and the portions of Fall Creek and Spring Creek/Jenny Creek that are downstream from project developments. Within this area, valley segments and river reaches will be delineated based on changes in geomorphic and hydrologic character (such as longitudinal profile developments). The hydrologic and geomorphic	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* for a detailed description of sediment transport and geomorphology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on sediment transport and geomorphology will be included in the Water Use and Quality technical report and draft and final applications. PacifiCorp's mapping will be based on channel geomorphic type according to the Rosgen (1994) and Montgomery and Buffington (1997) methods. The map will include some but not all of the features suggested in this comment. Regarding the study area, the geomorphology analyses will be most focused in the Project area from Link River dam to just below the Iron Gate dam and powerhouse. It is in this area that PacifiCorp operations have the most direct and varied potential effects on flows and

Num.	Agency	Page	Comment Summary	Response Summary
			character of each reach will be described, as will the extent of fluvial features within each reach. Reaches will be categorized according to the proportion of alluvial features (e.g., 0-20 percent of high flow channel area, 20-40 percent, etc.)	sediment loads. PacifiCorp will also conduct geomorphic characterization of Klamath River downstream of Iron Gate dam to the Shasta River (RM 176.7). As an additional source of information, PacifiCorp will consider detailed geomorphological descriptions provided by Ayers and Associates (1999) for the Klamath River downstream of Iron Gate dam. PacifiCorp does not plan to conduct specific geomorphological studies of Fall Creek and Spring Creek/Jenny Creek downstream from project diversions. These streams are mostly spring fed, there is no storage reservoir associated with the Fall Creek development and its powerhouse is operated as a run-of-river facility. PacifiCorp instead plans to provide appropriate channel maintenance flows downstream from project diversions as a part of recommended instream flows. Such flows will address any geomorphology concerns or management objectives.
325.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 47 Recommended Study 3.1	**Geomorphic Analysis of Project Effects on Sediment and Coarse Woody Debris Supply, Storage, and Transport - Methodology**. The proposed study encompasses the Klamath River between Link River dam and the river mouth, and those portions of Fall Creek and Spring Creek/Jenny Creek downstream from project developments. Except where noted, the study focuses on geomorphic response since the closure of Copco 1 (1918). The study will utilize data from as many years as possible before 1918 and between 1918 and the present. Components as follows: 1. Assess the degree to which project dams act as barriers to sediment transport. Determine the character (i.e., grain size) of impounded sediments and the rate of accumulation. 2. Quantify the current character of river bed substrate. Assess the degree to which altered flow regimes and sediment impoundment have affected the distribution and character of bed materials. Determine if and where project operations have resulted in bed armoring, bed paving, pool filling	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* for a detailed description of sediment transport and geomorphology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on sediment transport and geomorphology will be included in the Water Use and Quality technical report and draft and final applications. Regarding item 1 of this comment, PacifiCorp plans to map the bathymetry of Keno, J.C. Boyle, Copco, and Iron Gate reservoirs in late summer or fall 2001. Sediment accumulation in the reservoirs will be calculated by comparing reservoir volume differences between the new bathymetry and previous reservoir volumes as derived from available information (such as, City of Klamath Falls 1986, Johnson et al. 1985) and calculated from original topographic maps as available. Regarding items 2-6 of this comment, PacifiCorp plans to complete a geomorphic characterization of reaches in the Project area and downstream of Iron Gate dam to the Shasta River as described in study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*. River reaches will be delineated and categorized according to channel geomorphic type using the methods of Rosgen

Num.	Agency	Page	Comment Summary	Response Summary
			(especially in bypass reaches), gravel bar expansion or contraction, bank instability, or tributary mouth aggradation. Determine the timing of any such adjustments relative to completion of project developments or changes in project operations. Determine the streamflows needed to entrain (1) the median particle size of alluvial materials underlying armor layers, and (2) fine sediments that may be filling pools and interstitial spaces. Determine how often these flows are currently exceeded, how often they would be exceeded given unimpaired conditions (using the results of the Hydrologic Analysis), and how often they will be exceeded under alternative operation schemes. 3. Compare the effects of project operations on sediment supply to the impacts associated with historic and recent mining, road construction, and timber harvest in tributary watersheds. Assess the degree to which excessive sediment supply associated with non-project activities has offset project effects, and, as accurately as possible, estimate the degree to which this will continue over the next 50 years. 4. Determine the magnitude and extent of changes in river longitudinal profile and plan form that have occurred since the closure of Copco 1. Analyze channel geomorphic response at multiple spatial scales, including sub-reach, reach, and river segment (in this sense, as defined by Montgomery and Buffington, 1993). 5. Assess the degree to which project operations directly and indirectly affect the supply, storage, and transport of coarse woody debris (CWD). Determine the effects of frequent ramping on CWD stability and distribution. Quantify the volume of CWD impounded behind project dams,	(1994) and Montgomery and Buffington (1997). The channel geomorphic typing will provide descriptive information on the geomorphic characteristics of the river reaches, including channel geomorphic stability, response to changes in flow and sediment supply, sediment transport capacity, and dominant channel forming processes. Initial reach segmentation and typing will be done using recent aerial photos and topographic maps, including map-based estimates of channel gradient and confinement. Comparisons of recent aerial photos with historic aerial photo sequences, as available, will be made to gather evidence on channel geomorphic changes and disturbances that have occurred over recent history. Field visits will be made to ground-truth the channel geomorphic reach typing and further assess current channel conditions. Additional data and observation will be obtained in a subset of representative reaches to assess key characteristics of the channel that are useful for interpreting channel condition and response potential. These characteristics include channel bed morphology, channel dimensions, fine and coarse sediment composition and distribution, bank and riparian condition, and flood plain or terrace attributes. Key observations relative to the bed, active channel, and flood plain will be compiled into a summary of characteristics relative to channel condition. Using the information derived above, reach segmentation and typing will be synthesized into distinct geomorphic units and potential source, transport, or response areas or zones. The basic assumption behind geomorphic units is that segments within the unit will have similar channel conditions and respond similarly to channel-forming processes. Potential source, transport, or response areas or zones will be used to characterize channel response to flow and sediment inputs. The distribution of source, transport, or response areas or zones will help to determine the potential for, and location of impacts on the channel, as well as the potential for recovery and restoration opportunities. Estimates of channel-forming or geomorphically effective flows will

Num.	Agency	Page	Comment Summary	Response Summary
			and discuss how that material is removed. Determine the effect of project operations on recruitment of CWD from. And maintenance of CWD within, riparian zones. Discuss the geomorphic role of CWD within the study area. 6. Determine which reaches of the river have experienced changes in the physical structure of the riparian zone as a result of project developments or operation. Identify project effects on flow hydraulics and geomorphic processes in the vicinity of cultural sites and special wildlife habitats (e.g., Salt Caves).	be made based on field observation and calculations of key indicators, such as channel boundary shear stress, incipient channel bed particle size mobility, and estimated bank-full discharge. Existing hydrologic information for the Project area (as developed in the study of *Project Effects on Hydrology)* will be used to estimate the frequency-of-occurrence of these channel-forming or geomorphically effective flows, and how such flows may be affected by Project operations. Regarding item 6 of this comment, PacifiCorp plans to integrate hydrology and geomorphology information as described above into terrestrial resources studies (see study 2.2 *Wetland and Riparian Plant Community Characterization*).
326.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 49 Recommended Study 4.1	**Comprehensive Water Quality Study - Methodology**. The proposed study encompasses the Klamath River from Upper Klamath Lake to the ocean, Upper Klamath Lake, and the project-effected sections of Fall Creek and Jenny Creek. It is necessary to include Upper Klamath Lake in this analysis because of its contribution to downstream water quality conditions and also because of the potential effect of Link River dam operations on Upper Klamath Lake water quality. Components as follows: 1. Quantify and describe daily, weekly, and monthly temperature and DO regimes for individual river reaches. Model for a variety of water year types (as defined in the Climatologic and Hydrologic Analysis and for a range of alternative operation schemes and potential structural modifications, including dam removal. 2. Quantify and describe total nitrogen, toxic ammonia, phosphorus, suspended solids, total dissolved solids, pH, alkalinity, chlorophyll a, conductivity, nutrient concentrations, biochemical oxygen demand, and sediment oxygen demand. Model critical parameters for a range of alternative operation schemes and potential structural modifications, including dam removal.	See studies 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 for detailed descriptions of water quality studies to be conducted by PacifiCorp. Analysis of Project impacts on water quality will be included in the Water Use and Quality technical report and draft and final applications. Modeling provides some, but not all, of "the tools in the box" for analysis. Further scoping with the key agencies will be conducted to resolve what and where analysis and modeling tools are needed to assess Project water quality effects and management. For example, analysis of alternative operation schemes and potential structural modifications might be best done using actual data, simple calculations, or pilot testing, rather than potentially complex numerical models. Further scoping also is needed to ensure appropriate analytical coordination with larger-scale analyses and modeling that PacifiCorp assumes will be conducted by the agencies as a key part of TMDL water quality management planning in the basin. PacifiCorp does not plan to collect and analyze bioassays of toxic metals. Instead, PacifiCorp plans to collaborate with ODEQ and the SWRCB to collect and analyze samples of fish from reservoirs to look for evidence of potential contaminant uptake.

Num.	Agency	Page	Comment Summary	Response Summary
			3. Collect and analyze bioassays of toxic metals at appropriate locations, especially Keno reservoir. Incorporate data, modeling and analyses from the Upper Klamath Lake, Klamath River (Lake Ewauna), Upper and Lower Klamath River TMDLs and Water Quality Management Plans (in development).	
327.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 51 Recommended Study 5.1	**Impact of reservoir fluctuation and load following, daily and weekly, on spawning and reproductive success of sucker species in the Klamath River - Methodology** - Perform further analysis of reproduction activities in the Keno reach, J.C. Boyle full flow reach, and Iron Gate reach of the river including mapping of available spawning habitat in the effected reaches. All studies would be conducted according to established protocols or other negotiated methodologies useful example studies include Buettner and Scoppettone (1990) for spawning activities, Markle and Simon (1993) and Markle and Simon (1994) for larvae presence/absence). Potential spawning habitat would be surveyed, and located with GPS, and create a GIS layer of desirable and undesirable species high quality habitat and locations with attached data table of species, density, and extent. Occurrence of spawning activities should be correlated with observed lake elevations and a full range of instream flows, lake elevations, and observed spawning activity. Utilize results of this study and proposed studies, including stranding habitat (PacifiCorp Proposed Study), preferred larval/juvenile suckers habitat (BLM Proposed Study), and other key components to address environmental factors affecting reproductive success.	PacifiCorp has elected to not complete this specific study request. Some information on suckers species will be gathered through the aquatic studies. See studies 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam*, 1.9 *Fisheries Assessment* and 1.12 *Instream Flow Analysis.*
328.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 52 Recommended Study 6.1	**Evaluate upstream passage to restore anadromous fish to historic habitat in the Upper Klamath basin above Iron Gate dam and reconnect resident trout populations throughout project reaches; assess options for fish passage including one or more dam decommissioning/removals - Methodology**. The	See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
			PacifiCorp/Karuk (Fishpro 2000) study described fish passage conditions on the Upper Klamath River in terms of existing facilities. PacifiCorp will need to provide similar scenarios for all future hydropower alternatives for managing the project, compile and review all of the best available fish passage technology, and develop preliminary scenarios, design alternatives, and structural alternatives to successfully pass anadromous and resident fish species. The existing facilities at J.C. Boyle and Keno dams need to be evaluated for their effectiveness. For example, based on ODFW research (Hemmingsen et al. 1992), there is evidence to suggest that structural design and operation of the facility at J.C. Boyle has reduced fish passage by as much as 90%. Locations of the entrance, weir design, flow velocity, hydraulic gradients and water quality all need to be evaluated in light of existing rainbow trout, lamprey and sucker populations passage needs and also with respect to reintroduction of anadromous fish. PacifiCorp proposes to address this issue by convening a Fish Passage Task Force that will determine the information needed to address anadromous and resident fish passage issues. PacifiCorp's approach is to identify information needs for life history and habitat requirements for various fish species, hydrologic conditions of the project, fish passage methods and technology, status of existing passage facilities, and the effectiveness of Iron Gate Hatchery. PacifiCorp, in addition to the proposed passage advisory committee, should also assess other efforts at fish passage around the Pacific Northwest and the rest of the United State where great efforts are being made to restore anadromous fish to historic habitat and reconnect resident fish populations. PacifiCorp states that the activities of the advisory team will include reviewing the pertinent literature, assessing current	

Num.	Agency	Page	Comment Summary	Response Summary
			conditions, and possibly performing some biological and engineering feasibility analyses. The role of the advisory committee is to provide oversight, guidance, and technical decision-making on what studies are developed and implemented. It is the responsibility of PacifiCorp or its consultants to conduct literature reviews, and perform biological and engineering feasibility and report back to the advisory committee for discussion, interpretation, evaluation and provide further direction.	
329.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 55 Recommended Study 7.1	**Assessment of redband and Klamath River steelhead genetics and life histories - Methodology**. Assessment should include scientifically sound (peer reviewed) genetic and behavioral analysis to compare Upper Klamath basin populations of redband trout with other resident populations progressively down the Klamath River and compare redband trout similarity or divergence from downstream anadromous populations. Study resolution should be able to address the genetic variance between the three life history types (anadromous, fluvial, and adfluvial) present in the Klamath system. *See letter for study resources.* This study should examine work conducted under ODFW's Native Trout Project from 1988 through 1994 (Buchanan et al. 1994) and incorporate findings as necessary. Multiple native steelhead populations below Iron Gate will be assessed for ability to tolerate the presence of *C. shasta* and current upper basin water quality conditions in the event that native Upper Klamath basin redband populations are determined to be incapable of anadromous migration.	See study 1.17 *Investigation of Trout and Anadromous Fish Genetics in the Klamath Hydro Project Area.*
330.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 57 Recommended Study 8.1	**Lake Ewauna drawdown risk assessment - Methodology**. Sampling substrates progressively downstream from known sources of raft debris. Analysis, including mapping, of potential erosion risk area due to Keno reservoir drawdown.	PacifiCorp has elected to not complete a specific Keno reservoir sediment sampling study. Please see study 1.14 *Determination of Possible Contamination of Sediment in Lake Ewauna and Keno Reservoir* which was collaboratively designed and is related to this issue.

Num.	Agency	Page	Comment Summary	Response Summary
331.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 58 Recommended Study 9.1	**Analyze the relationships between reservoir water level fluctuation, habitat availability, the exotic fish community, and juvenile sucker recruitment to understand the early life history ecology of endangered lake suckers within the Klamath River reservoirs - Methodology**. Determine the extent of sucker recruitment occurring from upstream sources. Assess the effect of reservoir fluctuation on the riparian and littoral communities, including water quality, primary, and secondary production. Assess the extent of predation of larval and juvenile suckers in the Klamath River reservoirs. Assess the effects of altered littoral habitat from reservoir fluctuation, and predation/competition on habitat selection by suckers. Structured sampling regimes, stratified on variables of interest, to address the relationships. Quantification of predation on larval suckers and its impacts on survival and effect on habitat selection. Mark and recapture tagging studies to clarify adult recruitment dynamics. Mark and recapture studies for juvenile suckers recruitment and habitat selection. Larval sucker sampling for habitat selection. Inventory of existing littoral habitat. Mapping of potential littoral habitat based on all water elevations, at multiple levels of reservoir fluctuation, within affected landscape of the reservoir. Monitoring of existing water quality parameters in littoral communities, and modeling of potential water qualities based on all water elevations.	Some but not all of the work requested will be completed through aquatic and water quality studies. Please see studies 1.1 *Compilation and Assessment of Existing Water Quality Data*, 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area*, 1.3 *Water Quality Analysis and Modeling Process* and 1.9 *Fisheries Assessment.*.
332.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 59 Recommended Study 10.1	**Evaluate surface currents of the Klamath River reservoirs and effect on downstream movement of resident and potential anadromous fish - Methodology**. Use methodologies similar to those developed as part of the Pelton/Round Butte Relicensing Project. *Nothing more about the methodology.*	PacifiCorp is currently working with the Fish Passage Working Group to design a study to look at juvenile anadromous fish survival through Project reservoirs. See study 1.18 *Downstream Reservoir Passage/Survival.*
333.	BLM - T. Raml 3/23/01	Pg. 60 Recommen	**Evaluate downstream fish passage/entrainment in power diversions and powerhouses at J.C. Boyle**	See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
	Recommended Study	ded Study 11.1	**dam, Copco 1 and 2, and Iron Gate for resident fish migration and anadromous fish restoration to the Upper Klamath basin - Methodology**. These studies should be conducted similar to the studies conducted by PacifiCorp at the Link River Eastside and Westside powerhouse canals (Gutermuth et al. 2000) and the Powerdale hydro facility on the Hood River (PacifiCorp 1998) to evaluate the effectiveness of the screens. These studies should include all facilities including J.C. Boyle facilities. The J.C. Boyle facilities were modified to include year-round operation in 1988, and new fiberglass screens were placed in 1992, the question of their effectiveness for preventing fish mortality has still not been validated. PacifiCorp proposes to address the fish passage issue by convening a Fish Passage Task Force, comprised of agency, tribal, and other stakeholders to determine the information needed to address anadromous and resident fish passage issues. PacifiCorp's approach is to identify information needs for life history and habitat requirements for various fish species, hydrologic conditions of the project, fish passage methods and technology, status of existing passage facilities, and the effectiveness of Iron Gate Hatchery.	
334.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 61 Recommended Study 12.1	**Assess potential fish habitat in the Klamath River and tributaries above Iron Gate to evaluate reintroduction of anadromous fish species - Methodology**. A first step was taken by PacifiCorp with the assessment of fish passage conditions on the Upper Klamath River by Fishpro (2000). The evaluation included fish passage, water quality parameters, and potential predators in each of the project reservoirs. The next step is to display existing and potential restored habitat and quantify potential sustainable populations of anadromous fish. A variety of deterministic and stochastic populations, life cycle	See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
			and habitat models have been developed for salmon and steelhead populations throughout Oregon and Washington in the past several years.	
335.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 64 Recommended Study 13.1	**Noxious Weeds and Invasive Exotic Plants Inventory and Mapping - Methodology**. A systematic survey of all lands within the Klamath River canyon would provide information on the distribution of noxious weeds in the area influenced by the project. Surveys should be most intensive on roadsides, recreation facilities, PacifiCorp's facility grounds, transmission lines and other disturbed areas where noxious weeds readily become established. Population locations found should be documented with a GPS, and this information should be used to produce a GIS layer of weed locations with attached data table of species, density and extent.	See study 2.7 *Noxious Weed Inventory*.
336.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 65 Recommended Study 14.1	**Riparian Mapping and Characterization - Methodology**. Map existing and potential wetland and riparian vegetation rim to rim in canyon areas and within 0.25 mile from the river and all project facilities, including roads and power lines, in non-canyon areas from Link River dam to the downstream extent of BLM lands at Ash Creek. Identify and map existing wetland and riparian vegetation and areas where potential natural communities could be present but are not, due to other limiting factors affected by project operations, including areas currently flooded by reservoirs. Determine potential natural communities based on the hydrologic regime, landforms, soils, and microclimate with which the system evolved. Utilize high resolution infrared aerial photographs or multi-spectral orthophoto imagery to map wetland and riparian vegetation. Infrared aerial photos (1:2,400 scale) were flown during the summer of 2000 for the	Riparian vegetation will be mapped in the Vegetation cover type/wildlife habitat mapping study and further assessed in the Wetland and riparian plant community characterization study. Historical riparian areas that are under the reservoir will not be mapped because the current baseline for relicensing is what exists today. PacifiCorp has purchased a set of the recommended photos and will use them for mapping the canyon reach. See study 2.1 *Plant Community/Wildlife Habitat Inventory and Mapping* for vegetation cover type/wildlife habitat mapping.

Num.	Agency	Page	Comment Summary	Response Summary
			BLM Klamath Falls Resource Area and cover the Klamath River canyon reach from Topsy to Copco reservoir. The negatives of these photos are available for purchase. The remaining reaches of the river form the Link River dam to Topsy and from Copco to the downstream extent of BLM land at Ash Creek, should be flown using the same scale, and equivalent or better methodology and film type.	PacifiCorp will check on the availability of riparian photos from Iron Gate Dam to the mouth of Shasta River.
			When mapping riparian communities, distinguish between emergent wetlands, wetland dependent shrub communities, wet meadows, and non-water dependent plant communities in the riparian zone, as well as in and along drainages and upland areas associated with springs and seeps within the project boundary areas identified above. Each photo signature should be ground-truthed in order to confirm vegetation type. Structural diversity, height, age class or seral stage, foliar density, species composition, condition, and extent should be determined for each plant community type in sufficient detail to determine wildlife habitat relationships.	Vegetation types for riparian will include similar categories and will be further defined when possible. See study 2.1 *Plant Community/Wildlife Habitat Inventory and Mapping* for vegetation cover type/wildlife habitat mapping.
			Identify factors that impair attainment of the Potential Natural Communities for wetland and riparian vegetation. Utilize a Riparian Classification System analogous to that currently being developed by Greg Riegel (PNW Research, USFS) for mapping potential riparian communities or the BLM methods for assessing Proper Functioning Condition (Prichard 1998).	See study 2.2 *Wetland and Riparian Plant Community Characterization*.
			Identify plant communities and geomorphic surfaces upon which they occur, for each of the river reaches identified in the Hydrologic and Geomorphic Mapping Study.	See study 2.2 *Wetland and Riparian Plant Community Characterization*.
				Not included. Historical riparian areas that are under the reservoir will

Num.	Agency	Page	Comment Summary	Response Summary
			Map the historical distribution of riparian vegetation through the use of historical photographs from the Link River dam to the downstream extent of BLM land at Ash Creek. If possible, major plant community types should be identified. Describe changes in species composition and distribution between historic and current conditions. Map current and potential habitat for wetland/riparian associated amphibians, reptiles, and important prey species of mammals using habitat based models such as "Habitat Evaluation Procedures" (USFWS 1980). Include habitat maps for TES species, including the Western pond turtle. Provide an overlay map of recreation sites and project developments, depicting roads, day use area, and campground areas (including dispersed camping sites) which overlap with current and potential wetland and riparian vegetation. Map instream habitat features as described in the recommended Hydrologic and Geomorphic Mapping effort.	not be mapped because the current baseline for relicensing is what exists today. This information will be derived from other studies and assessed in the draft license application. Not included in the terrestrial studies (see Geomorphology study).
337.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 68 Recommended Study 15.1	**Analysis of Project Effects on Riparian Vegetation Communities - Methodology**. This study will quantify the magnitude and extent to which current and alternate project flow regimes affect riparian vegetation. The area of analysis for this study encompasses a 1/4 mile strip on either side of the main stem Klamath river (including project reservoirs) between the Pacific Ocean and Link River dam. Components as follows: 1. Characterize river reaches (as delineated in the Hydrologic and Geomorphic Mapping) according to the degree to which hydrological indices important to riparian vegetation have been altered as result of project operations. 2. For those river reaches that have been moderately or highly altered, determine the degree to which	See study 2.2 *Wetland and Riparian Plant Community Characterization.*

Num.	Agency	Page	Comment Summary	Response Summary
			the current flow regime affects the timing and frequency of inundation, scour, and dewatering. Relate the timing of these effects to critical life stages (germination, rooting, seed dispersal) of native riparian vegetation. 3. Model the distribution and compositions of riparian vegetation communities for a full range of alternatives.	
338.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 70 Recommended Study 16.1	**Complete Inventory of Avian Species (especially TES species) and how project operations impact these species and the long-term viability of their habitats - Methodology**. Surveys should include areas within 1/4 mile of water bodies and facilities or rim to rim in canyon area. Conduct a complete literature search during the spring of 2001, as described in PacifiCorp's proposed study 6.5.3. Conduct surveys for landbirds during the spring and fall migration, and breeding seasons using accepted methodology of point counts and Constant Effort Mist Netting (CES). Protocols for this methodology are described in PSW-GTR-144 (Ralph et al. 1993). Continue and expand upon studies currently underway by PSW of the USFS and KBO. These studies should include Constant Effort Mist Netting in other segments of the river suitable for conducting CES methodology which occur between the Link River dam and the downstream extent of BLM lands at Ash Creek. Some potential locations include riparian areas at the confluence of major tributaries to the river. Surveys should be of sufficient duration to establish a baseline, and to monitor any potential changes that could be affected by changes in project operations. CES efforts should be run for a minimum of 5 to 10 years to meet the objectives of this monitoring technique.	This information will be covered by other studies. PacifiCorp will summarize existing information from both the Klamath Bird Observatory field studies and the TES studies in the to evaluate Project effects. TES species will be the focus of field efforts during the TES study. Avian species will be addressed in study 2.6 *Wildlife Habitat Association Assessment and Synthesis of Existing Botanical and Wildlife Information*. This study includes a habitat-based approach for describing wildlife in the Project area. Particular attention will be paid to TES species and their habitat, and riparian and wetland habitats that occur near the Project or in affected reaches. The analysis will use a combination of existing study information, vegetation maps, CA Wildlife Habitat Relations database, life history information, and TES field surveys to characterize avian species and their habitat associations in the Project area. Important habitats will be determined/located and Project effects analyzed based on their proximity to Project facilities, recreation development proposals, and public areas. Important habitat structural information will be recorded. Habitat and location data will be useful for developing management plans. The need for long-term monitoring will be assessed when developing PM&Es in the draft license application.

Num.	Agency	Page	Comment Summary	Response Summary
			Current point count and CES surveys conducted during the breeding season will suffice for the summer populations of non-game landbirds. Additional types of surveys will be needed for other TES species including raptors. Bimonthly surveys are needed throughout the year to determine when special status species are present. Accepted methods that will document the abundance and frequency should be used throughout the year to determine the importance of habitats for migration and wintering. Surveys should be tied to plant communities. Surveys should cover a minimum of two complete years. Approved standard protocols used by the BLM will be required where species protocols exist. They should be used for breeding populations of Mountain quail, goshawk, great gray owl, etc. Line transects 250 to 500 meters in length should be used for woodpecker species. Methodology on line transects may be obtained from Bibby et al. (1992). Important habitat structures such as raptor nest sites, granaries (woodpecker storage sites), potential bank swallow habitat, locations of TES species, etc. should be located using GPS and included in overall area maps. Based upon the results of the proposed Plant Community/Wildlife Habitat Inventory and Mapping Study (6.5.1, page 6-30 of the FSCD), describe additional habitat and habitat improvements needed for potential TES populations and breeding territories.	
339.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 73 Recommended Study 17.1	**Determine impacts of all project diversions, canals, and flumes upon wildlife species - Methodology**. Utilize a combination of seines and fyke nets at the downstream ends of all canals and flumes in the project	See study 2.5 *Wildlife Movement/Connectivity Assessment*. PacifiCorp will conduct an analysis of potential impacts of Project above-ground water conveyance features and other Project-related developments upon wildlife as part of a wildlife movement/connectivity

Num.	Agency	Page	Comment Summary	Response Summary
			area to monitor the entrainment of all wildlife species, including mammals ranging from small rodents to deer, herptiles, etc. Quantify the number of each species trapped and or killed on a daily, weekly, and seasonal basis. Nets should be operated and checked two to three days per week throughout the year, as long as ice in canals and flumes is absent. Place larger mesh seines upstream of smaller mesh fyke nets in order to prevent larger mammals such as deer from entering the fyke nets. Provide some method of preventing live animals from drowning in the nets. The mesh size of the fyke nets should be small enough to monitor target species. For more details on the methodology for use of fyke nets refer to the fish entrainment study conducted at Link River dam from 1997 through 1999 (Gutermuth et al. 2000). Conduct a literature search to refine the methodology needed for studies of entrainment of wildlife.	assessment. PacifiCorp will also conduct a literature review and assessment of the effects of reservoirs on big game movements. PacifiCorp does not plan to quantify the degree of entrainment but will map potential entrainment areas, and crossing opportunities, and analyze information from other PacifiCorp studies to determine areas where location of additional crossings or structures would prevent entrainment or enhance crossing opportunities

Num.	Agency	Page	Comment Summary	Response Summary
340.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 74 Recommended Study 18.1	**Macroinvertebrate Inventory - Methodology**. Kick samples, surber samples, Hess samples, Ponar or Eckman dredges, and other standard collection systems will be used to collect data on macroinvertebrates at several locations along the project. Sampling should be conducted above and below all dams and powerhouses, in all reservoirs, below irrigation diversions, and where major changes in river flows occur. Sample sites chosen should represent all river conditions, including pools and riffles. Specific sties that should be included are the area near Miller Island Refuge, the stretch between J.C. Boyle dam and the powerhouse, and the river near Salt Caves. Surveys should be conducted throughout the year and throughout a 24 hour-day period. Approved methodology should be sufficient to identify species present at various times of the year, measure movement on a time of day, season of year, and response to flow level basis. Qualified individuals with experience in macroinvertebrate biology and sampling methodology should conduct the identification, processing, and analysis of macroinvertebrate samples. For each sample site, determine the abundance of macroinvertebrates by quantifying the number of each species per unit of area. Quantify the ratio of scraper and collector-filterer functional feeding groups, by sample site, in order to determine the nature of potential disturbance factors.	PacifiCorp plans to conduct a detailed macroinvertebrate study at many locations throughout the Project area and downstream of Iron Gate dam to the Shasta River. The study will be based on the *California Stream Bioassessment Procedure* for river and stream reaches, and the *California Lentic Bioassessment Procedure* for reservoir reaches. Per these procedures, sampling will be done once, not throughout the year and throughout a 24 hour-day period as recommended in this comment. Also per these procedures, river and stream samples will be from riffles, not all river conditions as recommended in this comment.
341.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 76 Recommended Study 19.1	**Complete mollusk survey of all springs in the Project area - Methodology**. Survey spring sites utilizing methods proven effective by qualified malacologists. Expert malacologists should verify the identification of specimens. Identify and may (using GPS) all springs and locations	See study 2.9 *Spring-Associated Mollusk Inventory*. While conducting the botanical and wildlife studies (TES species inventories, cover type mapping, and wetland and riparian assessments), PacifiCorp will map all spring habitat encountered within 0.25 miles of Project facilities. For potentially affected springs, PacifiCorp will coordinate with the BLM and USFS to determine the

Num.	Agency	Page	Comment Summary	Response Summary
			of "Survey and Manage" and TES aquatic mollusks between the Link River dam and the downstream extent of BLM-administered land at Ash Creek. Collect temperature and water quality data at each spring identified. Conduct an assessment of the existing condition of the springs and surrounding habitat using "Proper Functioning Condition" methodology described in Prichard (1998).	need for additional surveys on federal lands within the study area.
342.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 77 Recommended Study 20.1	**Cultural Resource Inventory: Revisit known sites to determine the degree of damage caused by erosion, recreation, and pot/hunting/vandalism - Methodology**. Fieldwork consisting of reidentification and evaluation of known sites. Use of the new automated Oregon State Historic Preservation Office site data system, historic and current aerial photography, 7.5' USGS topographic maps, and Global Positioning System (GPS) units would provide critical new site information. Investigators should document all observed damage using photography, detailed written descriptions, and mapping. Efforts should be correlated with the Recreation Flow Analysis and the recommended Geomorphic Analysis. Consult with agencies and tribes when developing methodologies.	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
343.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 77 Recommended Study 21.1	**Resurvey of Previously Surveyed Cultural Sites - Methodology**. Consult with the State Historic Preservation Officer to establish which past surveys no longer meet current standards. Conduct an intensive archaeological pedestrian survey to current professional standards with 30 meter interval transects within the APE. Use the new automated Oregon SHPO site data system, aerial photography, 7.5' USGS topographic maps, and Global Positioning System (GPS) units to record survey activity and results. Investigators should photograph, map and describe in writing all cultural	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis*

Num.	Agency	Page	Comment Summary	Response Summary
			sites. Consult with agencies and tribes when developing methodologies.	
344.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 78 Recommended Study 22.1	**Road Inventory - Methodology**. The road inventory will be vehicle-based, and will utilize a GPS receiver linked in real-time to a laptop computer with GIS software. All roads used by PacifiCorp for access and maintenance will be inventoried, and the BLM recommends including other roads that are accessed via project roads. The following features will be included in the inventory: 1. Road intersections and road closures; 2. River access points, recreational facilities, dispersed recreation sites; 3. Locations of stream and wetland/wet meadow crossings (including ephemeral streams and wetlands); 4. Road drainage features, both engineered (e.g. ditch-relief culverts and rolling dips) and non-engineered (e.g. ruts and gullies); 5. Road-related sediment sources, such as washouts and incipient channels associated with road drainage; and, 6. Road hazards and areas in need of road maintenance. The location of these features will be determined by acquiring a sufficient number of GPS "fixes" at each site. The attributes of each type of feature will be noted in a "data dictionary" that will be developed within the GIS software. The road inventory will be cross-referenced to the noxious weed and special status plant inventories.	See study 4.2 *Inventory of Klamath Hydroelectric Project Roads.**
345.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 79 Recommended Study 23.1	**Analysis of Dam Decommissioning - Methodology**. Compile and analyze information regarding the effects of dam removal or decommissioning on a variety of resources and social needs. The factors that will be analyzed include, but are not limited to the beneficial and detrimental effects to fisheries, wildlife, water	PacifiCorp will not complete Dam Decommissioning study. See Systems Landscape Options Matrix for related information.

Num.	Agency	Page	Comment Summary	Response Summary
			quality, aesthetics, various recreation resources, traditional cultural uses and other state-recognized beneficial uses and the absolute and relative short- and long-term impacts on regional energy supply. Where appropriate, the analysis will incorporate the results of other proposed and recommended studies. The analysis will compare the effects of removing one or many dams to the effects of other proposed environmental protection, mitigation, and enhancement plans.	
346.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 80 Recommended Study 24.1	**Interdisciplinary Suitability Assessment of Alternative Project Operations - Methodology**. Because flows downstream from Iron Gate dam are determined in consultation with NMFS, this study will extend only from J.C. Boyle dam to Iron Gate dam. This study will incorporate the results of the following proposed and recommended studies: Climatologic and Hydrologic Analysis; Geomorphic Analysis; Water Quality Modeling; Instream Flow Assessment; Fish Stranding Assessment; Upstream Fish Passage; Downstream Fish Passage; Ramping Studies; Assessment of Project Effects on Riparian Vegetation Communities; TES Bird and Wildlife Studies; Macroinvertebrate Inventory; Mollusk Surveys; Current Condition of Cultural Sites; Recreation Flow Assessment; and, Recreation User Survey. Using the results of these studies, this assessment will compare the range of flows/elevations preferred by a variety of resources. This comparison will be used to develop a project operations framework that discusses, for each month: 7. The desired rate, magnitude, and timing of reservoir fluctuations; 8. Desired reservoir surface elevations; 9. The desired rate and timing of streamflow fluctuations (especially those associated with	In developing the draft and final license applications, PacifiCorp will work towards an appropriate balance of natural, economic, and social resources.

Num.	Agency	Page	Comment Summary	Response Summary
			ramping); 10. Desired minimum instream flows; and, 11. The desired magnitude and frequency of high flow events (including those associated with ramping). Utilizing the range of proposed USBR Klamath project operation schemes and a range of alternative project operations schemes, the assessment will estimate the frequency of meeting the targets described above.	
347.	BLM - T. Raml 3/23/01 Recommended Study	Pg. 82 Recommended Study 25.1	**Project Hazards Analysis - Methodology**. All major structures, including diversion canals, will be seismically evaluated. An independent licensed engineer will certify the structures. A licensed engineering geologist will assess the susceptibility of project dams and structures to landslides.	See Exhibit F of license application.
348.	US Fish & Wildlife Service (USFWS) - B. Halstead 3/27/01	Pg. 2 Para 1	The FSCD does not meet the minimum standard for content defined by the Commission's regulations and should be withdrawn until further consultations with the Service and others can be held.	PacifiCorp disagrees.
349.	USFWS - B. Halstead 3/27/01	Pg. 2 Para 5	The project maps contained in the FSCD are inadequate to determine the location of project boundaries and certain project facilities. Many of the maps contained in Appendices A and B are poor reproductions of old maps that have been reduced to the point that details are unreadable or the legends and descriptions cannot be understood.	Comment noted.
350.	USFWS - B. Halstead 3/27/01	Pg. 2 Para 7	Drawings and figures of project facilities suffer from the same poor quality and unreadable condition as described above for the location and boundary maps.	Comment noted.
351.	USFWS - B. Halstead 3/27/01	Pg. 3 Para 2`	Need to have a detailed understanding of project operations including the flexibility/capability of all project facilities in order to evaluate the impact that the project has on fish and wildlife resources. Details that are needed: range of flows that a powerhouse is capable of operating at; maintenance and operational criteria for project fish ladders and screens; depth of diversion	This information will be provided in the hydrology study report (study 1.4 *Analysis of Project Effects on Hydrology*) and draft and final applications.

Num.	Agency	Page	Comment Summary	Response Summary
			inlets in reservoirs and the extent to which reservoirs can be drawn down before entrainment of air is a concern; and the lowest depth at which water can be withdrawn from project reservoirs.	
352.	USFWS - B. Halstead 3/27/01	Pg. 3 Para 4	Information provided does not adequately represent changes in discharge throughout the affected reach that result from project operations. Only discharge information for gage sites below Link River dam, Keno dam, J.C. Boyle powerhouse and Iron Gate dam/PH is included although other information is available or can be determined.	A more detailed discussion of project effects on hydrology will be provided in the hydrology study report (study 1.4 *Analysis of Project Effects on Hydrology*) and the draft and final applications.
353.	USFWS - B. Halstead 3/27/01	Pg. 3 Para 4	No data is provided for diversions through projects or water remaining in low flow sections for J.C. Boyle or Copco II projects. No discharge records are presented for the Fall Creek project. The FSCD fails to explain that the Spring Creek diversion briefly mentioned on page 2-23 is actually located on a tributary to Jenny Creek in an adjacent watershed.	A more detailed discussion of project effects on hydrology will be provided in the hydrology study report (study 1.4 *Analysis of Project Effects on Hydrology*) and the draft and final applications.
354.	USFWS - B. Halstead 3/27/01	Pg. 3 Para 4	The FSCD gives no description of when, how, and how much water is diverted from Spring Creek to Fall Creek, nor does it explain how this diversion may effect flows in Spring Creek or Jenny Creek. There is no detailed information showing accretion to the project reach between Link River Dam and Iron Gate Dam and how these flows contribute to mainstem discharge throughout the year. The FSCD does not describe the contribution of flows released from Iron Gate Dam to total flows in the Klamath River at points downriver. During low flow seasons and drought years, the contribution of the flows released from Iron Gate Dam to total flows all the way to the ocean, can be significant.	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication. A more detailed discussion of project effects on hydrology will be provided in the hydrology study report (study 1.4 *Analysis of Project Effects on Hydrology*) and the draft and final applications.
355.	USFWS - B. Halstead 3/27/01	Pg. 4 Para 2	Detail is almost completely lacking from the FSCD for most, if not all, of the limited range of studies proposed by the licensee. We cannot comment on the adequacy of study content in the FSCD that does not exist.	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
356.	USFWS - B. Halstead 3/27/01	Pg. 4 FSCD Proposed Study 1	**Compilation and assessment of existing water quality data.** This is not a study, although the FSCD does say that if important data gaps are found, field sampling will be conducted. This compilation and assessment should have been conducted prior to the completion of the FSCD so that data gaps would be identified and addressed in this document.	Comment noted.
357.	USFWS - B. Halstead 3/27/01	Pg. 4 FSCD Proposed Study 2	**Evaluation of Water Quality During Project Maintenance Events.** Other than generalities, no specific, detailed methods or plans are described so that we have little idea of how PacifiCorp plans to evaluate water quality during these events.	Additional details have been provided in study plan 1.6 prepared by PacifiCorp titled *Monitoring and Analysis of Water Quality During Project Maintenance Operations*.
358.	USFWS - B. Halstead 3/27/01	Pg. 4 FSCD Proposed Study 3	**Analysis of nutrient conditions in the project area.** PacifiCorp provides no detail on how this evaluation will be conducted. Development of a model capable of predicting water quality conditions in river reaches and reservoirs affected by the project, under a range of operating conditions, is a significant omission of this analysis.	Additional details on analysis of nutrients and modeling have been provided in studies 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area* and 1.3 *Water Temperature and Water Quality Modeling Needs Assessment and Scoping Process* prepared by PacifiCorp.
359.	USFWS - B. Halstead 3/27/01	Pg. 4 FSCD Proposed Study 1	**Evaluation of Ramping - J.C. Boyle** Development of detailed study plan with resource agencies deferred to sometime in early 2001. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD. Further ramping studies should also be conducted below Iron Gate Dam. Previous studies conducted there were not comprehensive and not all ramping concerns were evaluated.	Comment noted. PacifiCorp will address downstream of Iron Gate Dam in study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
360.	USFWS - B. Halstead 3/27/01	Pg. 5 FSCD Proposed Study 2	**Instream flow evaluation below Link River Dam, Copco 2, J.C. Boyle, and Fall Creek diversion.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD. Failure to include reaches below Keno and Iron Gate Dams in this	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.* PacifiCorp will not include Spring and Jenny Creeks, but may do so at a later date based on Oregon's Klamath Basin Water Rights Adjudication.

Num.	Agency	Page	Comment Summary	Response Summary
			analysis are significant omissions in this proposed evaluation. An instream flow evaluation in Spring and Jenny Creeks may also be warranted. The study plan will need to be comprehensive in scope and consider the evaluation of all feasible fish passage options so that an appropriate range of options can be considered during the environmental review process.	
361.	USFWS - B. Halstead 3/27/01	Pg. 5 FSCD Proposed Study 3	**Fish Passage Planning and Evaluation.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD. The study plan will need to be comprehensive in scope and consider the evaluation of all feasible fish passage options so that an appropriate range of options can be considered during the environmental review process.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*
362.	USFWS - B. Halstead 3/27/01	Pg. 5 FSCD Proposed Study 4	**Fisheries Assessments.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD.	Comment noted. See study 1.9 *Fisheries Assessment.*
363.	USFWS - B. Halstead 3/27/01	Pg. 5 FSCD Proposed Study 1	**Plant Community/Wildlife Habitat Inventory and Mapping**. Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD.	Comment noted. See study 2.1 *Vegetation Cover Type/Wildlife Habitat Inventory and Mapping*.
364.	USFWS - B. Halstead 3/27/01	Pg. 5 FSCD Proposed Study 2	**Wetland and Riparian Plant Community Characterization.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD.	Comment noted. See study 2.2 *Wetland and Riparian Plant Community Characterization.*
365.	USFWS - B. Halstead 3/27/01	Pg. 5 FSCD Proposed	**TES Species Inventory.** Development of detailed study plan with resource agencies deferred to some	Comment noted. See study 2.3 *Threatened, Endangered, and Sensitive (TES) Species Inventory.*

Num.	Agency	Page	Comment Summary	Response Summary
		Study 3	unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD. The service will provide species lists for the project area in our subsequent correspondence.	
366.	USFWS - B. Halstead 3/27/01	Pg. 6 FSCD Proposed Study 4	**Amphibian and Reptile Inventory.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD.	Comment noted. See study 2.4 *Amphibian and Reptile Inventory.*
367.	USFWS - B. Halstead 3/27/01	Pg. 6 FSCD Proposed Study 1	**Recreation Flow Analysis Study.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD.	Comment so noted. Additional details have been provided in study 3.1 *Recreation Flow Analysis Study*.
368.	USFWS - B. Halstead 3/27/01	Pg. 6 FSCD Proposed Study 2	**Recreational User Survey.** Development of detailed study plan with resource agencies deferred to some unknown date in future. PacifiCorp should have approached the resource agencies about developing a study plan before completion and distribution of FSCD.	Comment so noted. Additional details have been provided in study 3.1 *Recreation Flow Analysis Study*. The study plans are currently in the revision process.
369.	USFWS - B. Halstead 3/27/01	Pg. 6 Para 5	Upper Klamath Lake - PacifiCorp argues that there are no project related impacts above Link River Dam due to lake level restrictions and operational control exerted by the Bureau of Reclamation (Bureau) for Klamath Reclamation Project operations. However, it is our understanding that the contract between PacifiCorp and the Bureau allows the licensee some flexibility in the operation of Link River Dam to affect Upper Klamath Lake water elevations when irrigation and endangered species requirements are met.	See Exhibit B of license application.
370.	USFWS - B. Halstead 3/27/01	Pg. 6 Para 5	Upper Klamath Lake - It is also our understanding that the contract identifies PacifiCorp as the party responsible for damages resulting from the operation of Link River Dam or the regulation and control of water levels at Upper Klamath Lake. PacifiCorp states in the FSCD that power is one of the requirements that must	See Exhibit B of license application.

Num.	Agency	Page	Comment Summary	Response Summary
			be balanced in operation of Link River Dam and elevations in Upper Klamath Lake. While we agree that in some years and at certain times of the year this flexibility may be very restricted, Upper Klamath Lake nevertheless plays and important role in Klamath Hydroelectric Project operations.	
371.	USFWS - B. Halstead 3/27/01	Pg. 6 Para 6	Upper Klamath Lake - In addition to impacts on Upper Klamath Lake elevations, there is also a tie between the project and impacts to the Lake as a result of the considerable entrainment of lake resident fish species into the Eastside and Westside hydro projects.	See study 1.10 *Fish Passage Planning and Evaluation.*
372.	USFWS - B. Halstead 3/27/01	Pg. 7 Para 1	Klamath River below Iron Gate Dam - PacifiCorp argues that all flows below Iron Gate Dam are dictated by the Bureau as a result of biological opinions issued by the National Marine Fisheries Service for Klamath Reclamation Project operations. This opinion identifies flows that must be met downstream of Iron Gate Dam because that is where these fish now occur. However we are aware of no authority that the Bureau has to dictate flow releases below Iron Gate Dam, a Commission licensed facility, without PacifiCorp agreement. The Bureau only has the ability to dictate flow releases at Link River Dam in order to meet a given flow level below Iron Gate Dam. Meeting these flows clearly requires cooperation on the part of PacifiCorp with hydroelectric project operations.	See Exhibit B of license application.
373.	USFWS - B. Halstead 3/27/01	Pg. 7 Para 2	Klamath River below Iron Gate Dam - There is significant accretion of discharge between Link river Dam and Iron Gate Dam, although PacifiCorp does not fully document what the extent of this accretion may be in the FSCD. PacifiCorp also operates five dams downriver from Link River Dam, two of which, Copco 1 and Iron Gate have significant storage reservoirs associated with them and are capable of significantly modifying river flows, especially during low flow periods, downriver of Iron Gate Dam. For example, the	A more detailed discussion of project hydrology including tributary accretion will be provided in the hydrology study report 1.4 *Analysis of Project Effects on Hydrology* and the draft and final applications.

Num.	Agency	Page	Comment Summary	Response Summary
			FSCD show on page 2-17 that at the minimum discharge required by license article 52 at Iron gate Dam, the retention time is 32 days at Copco 1 reservoir and 42 days at Iron Gate reservoir.	
374.	USFWS - B. Halstead 3/27/01	Pg. 7 Para 6	**Spring Creek/Jenny Creek** - PacifiCorp does not recognize, or propose to evaluate, any impacts to Spring or Jenny Creeks, that occur as a result of the licensee's diversion of Spring Creek water into Fall Creek.	Spring Creek diversion is currently not being considered in this relicensing process due to ongoing Oregon adjudication..
375.	USFWS - B. Halstead 3/27/01	Pg. 7 Para 7	**Project Facilities and Maintenance - Transmission Lines** - PacifiCorp briefly describes transmission lines associated with the project, but it is unclear where these lines are located, how long they are, how they are designed, how they are maintained, if there are records of raptor electrocutions or bird strikes, etc. PacifiCorp needs to provide additional information regarding these facilities and address facility impacts on local wildlife and habitats.	PacifiCorp will show on maps, the locations of Project-related powerlines. The draft license application will provide a summary of information regarding these facilities (including design, maintenance description, and records of raptor electrocutions or bird strikes).
376.	USFWS - B. Halstead 3/27/01	Pg. 8 Para 1	**Project Facilities and Maintenance - Roads** - PacifiCorp provides even less information regarding the impact of project associated roadways on fish and wildlife in the project area. This omission should be addressed and potential impacts to fish and wildlife should be evaluated.	See study 4.2 *Inventory of Klamath Hydroelectric Project Roads.* PacifiCorp's road inventory will identify all project related roads and trails and where they may have resource impacts. The information collected during the road inventory will be available to researchers completing the fish and wildlife studies and their review of potential impacts to fish and wildlife.
377.	USFWS - B. Halstead 3/27/01	Pg. 8 Para 2	**Project Facilities and Maintenance - Entrainment of fish and wildlife in project flumes, canals, and penstocks -** With the exception of fish entrainment studies conducted at the Eastside and Westside facilities, no information is presented or proposed for collection at any other facilities. Other than deer, there is also no information presented, or proposed for collection, regarding wildlife that may become trapped and drown in the J.C. Boyle flume.	PacifiCorp will conduct an analysis of potential impacts of Project aboveground water conveyance features and other Project-related developments upon wildlife as part of study 2.5 *Wildlife Movement/Connectivity Assessment*. PacifiCorp will analyze existing data on big game losses in the canals and available information/literature on small animal entrainment and movements. PacifiCorp studies (herpetological study, TES study, plant community/wildlife habitat inventory and mapping) will describe the species that potentially occur around these areas, and the suitability of adjacent habitat. These species would be the ones that would be at risk of entrapment if they were crossing the canal.

Num.	Agency	Page	Comment Summary	Response Summary
				PacifiCorp does not plan to quantify the degree of entrainment but will map potential entrainment areas, and crossing opportunities, and analyze information from other PacifiCorp studies to determine areas where crossing opportunities can be enhanced. PacifiCorp will summarize any wildlife entrainment information obtained during the Westside fish entrainment study. This information, along with the species lists and habitat information, will provide an indication of the types and numbers of small animals entrained in the Eastside and Westside canals. All water conveyance features of the project, including J.C. Boyle canal, will be reviewed for areas where animals may potentially be entrained. The assessment will consider wall heights (accessibility of the canal to animals), existing flume clearances, escape opportunities, and crossing locations. The analysis will consider the species that potentially occur in the vicinity, based on suitable habitat and life history information, to be the species that may be impacted.
378.	USFWS - B. Halstead 3/27/01	Pg. 8 Para 3	**Klamath River Geomorphology and Sedimentation** - Effects of project dams and reservoirs on the geomorphology of the mainstem Klamath River, including channel morphology, sediment transport, and gravel recruitment in reaches below project dams is only addressed briefly for the reach below Iron Gate Dam. This issue is not proposed to receive any further study. The FSCD cites the Ayres Associates (1999) report to briefly address geomorphic conditions in the Klamath River below Iron Gate Dam. But the FSCD fails to note that the Ayres report concluded that Iron Gate Dam had no impacts on channel morphology or substrate conditions because of prior impacts from Copco 1 Dam upriver. The FSCD also does not address the ongoing erosion and sediment input from the emergency overflow/load rejection spillway located at the terminus of the J.C. Boyle flume where it enters the penstock.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*

Num.	Agency	Page	Comment Summary	Response Summary
379.	USFWS - B. Halstead 3/27/01	Pg. 8 Para 4	Other Activities on Project Lands - The FSCD states that livestock grazing is conducted on project lands in the vicinity of Iron Gate Reservoir and suggests that grazing occurs in other project locations as well. Timber harvest and right-of-way management is also identified as activities that the Company conducts but the extent this may occur on project lands is not clear. Any impact that these activities may have on fish and wildlife resources within the project boundaries should be described and evaluated.	Comment noted. The land management section of the draft license application will address these issues as they relate to the study 2.8 *Grazing Assessment* will also provide information for the Project area. Land management practices that PacifiCorp conducts independently of the hydro project license (such as right-of-way management on non-Project lines or timber harvest outside of Project lands) may be discussed with PacifiCorp at any time (i.e., not necessarily tied to the relicensing schedule).
380.	USFWS - B. Halstead 3/27/01	Pg. 8 Para 5	Project History Information Requests - Construction & Operation 1. The original license application and the order issuing the license and any subsequent license application and subsequent order issuing a license for the existing project. a. Approved Exhibit drawings, including as-built exhibits b. Any order issuing amendments or approving exhibits c. Any order issuing annual licenses for the existing project 2. All data relevant to whether the project is and has been operated in accordance with the requirements of each license article, including minimum flow requirements, ramping rates, reservoir elevation limitations, and environmental monitoring data 3. A compilation of project generation and respective outflow with time increments not to exceed one hour, unless use of another time increment can be justified, for the period beginning five years before the filing of a notice of intent. 4. Any public correspondence relating to the existing project. 5. Any report on the total actual annual generation and annual operation and maintenance costs for the period beginning five years before the filing of a	USFWS was informed in May 2001 (T. Olson pers. Comm. With R. Brown) that information could be made available at PacifiCorp's office in Portland, Oregon.

Num.	Agency	Page	Comment Summary	Response Summary
			notice of intent 6. Any reports on original project costs, current net investment, and available funds in the amortization reserve account. 7. A current and complete electrical single-line diagram of the project showing the transfer of electricity from the project to the area utility system or point of use; and 8. Any bill issued to the existing licensee for annual charges under section 10(e) of the Federal Power Act.	
381.	USFWS - B. Halstead 3/27/01	Pg. 9 Para 2	FSCD Project History Information Requests Safety & Structural Adequacy 1. The most recent emergency action plan for the project or a letter exempting the project from the emergency action plan requirement. 2. Any independent consultant's reports required by part 12 of the Commission's regulations and filed on or after January 1, 1981. 3. Any report on operation or maintenance problems, other than routine maintenance, occurring within the five years preceding the filing of a notice of intent or within the most recent five-year period for which data exists, and associated costs of such problems under the commission's Uniform System of Accounts. 4. Any construction report for the existing project. 5. Any public correspondence relating to the safety and structural adequacy of the existing project.	USFWS was informed in May 2001 (T. Olson pers. Comm. With R. Brown) that information could be made available at PacifiCorp's office in Portland, Oregon.
382.	USFWS - B. Halstead 3/27/01	Pg. 9 Para 3	FSCD Project History Information Requests Fish and Wildlife Resources 1. Any report on the impact of the projects' construction and operation on fish and wildlife resources. 2. Any existing report on any threatened or endangered species or critical habitat located in the project area, or affected by the existing project	USFWS was informed in May 2001 (T. Olson pers. Comm. With R. Brown) that information could be made available at PacifiCorp's office in Portland, Oregon.

Num.	Agency	Page	Comment Summary	Response Summary
			outside the project area. 3. Any fish and wildlife management plan related to the project area prepared by the existing licensee or any resource agency. 4. Any public correspondence relating to the fish and wildlife resources within the project area.	
383.	USFWS - B. Halstead 3/27/01	Pg. 9 Para 4 and Pg. 10	FSCD Project History Information Requests Recreation & Land Use Resources 1. Any report on past and current recreational uses of the project area. 2. Any map showing recreational facilities and areas reserved for future development in the project area, designated or proposed wilderness areas in the project are, Land and Conservation Fund lands in the project area, and designated or proposed Federal or state wild and scenic river corridors in the project area. 3. Any documentation listing the entity responsible for operating and maintaining any existing recreational facilities in the project area. 4. Any public correspondence relating to recreation and land use resources within the project area.	USFWS was informed in May 2001 (T. Olson pers. Comm. With R. Brown) that information could be made available at PacifiCorp's office in Portland, Oregon.
384.	National Marine Fisheries Service (NMFS) - I. Lagomarsino 3/23/01	Enclosure Pg. 1 Project Area	The FSCD indicates that the current FERC Boundary ends just below Iron Gate Dam, but also indicates that "the existing FERC boundary of the Klamath Hydroelectric Project will be revised during the …relicensing process." Although it is not clear in the FSCD, PacifiCorp implies that the "Project Area" also ends here. In order to facilitate the revision of the FERC boundary and PacifiCorp's correct identification of their Project Area description and "zone of influence", NMFS believes it is essential that PacifiCorp complete a study of the contribution of Iron Gate Dam releases to Klamath River flows, as measured at various places, times, and hydrological conditions.	See study 1.4 *Analysis of Project Effects on Hydrology*.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
385.	NMFS - I. Lagomarsino 3/23/01	Enclosure Pg. 1 Link River Dam	The NMFS is aware of an operational agreement (ca. 1958) regarding Link River Dam, and has heard that this agreement has been more recently updated. However, the term of this agreement(s), and the possibility of revising this agreement in light of new information and circumstances is not clear. Because of the uncertainty about this operational agreement, and because of the possibility of that agreement changing over the next 30 to 50 years, NMFS believes that operation of Link River Dam should be included in the relicensing process.	Comment noted, however, Link River dam is owned by the U.S. Bureau of Reclamation and as such will not be included in the FERC relicensing.
386.	NMFS - I. Lagomarsino 3/23/01	Enclosure Pg. 1 Water Quality	A comprehensive water temperature and quality model must be developed for the Klamath River between Upper Klamath Lake and at least Orleans (inclusive).	See study 1.3 *Water Quality Analysis and Modeling Process.*
387.	NMFS - I. Lagomarsino 3/23/01	Enclosure Pg. 2 Ramping Rates	In addition to the ramping rate studies proposed in the FSCD, the effects to salmon and steelhead of down ramping rates at Iron Gate Dam need to be studied further because of the documented instances of fish stranding.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
388.	NMFS - I. Lagomarsino 3/23/01	Enclosure Pg. 2 Fish Passage	NMFS is interested in 1) potential habitat available if passage were provided, 2) analysis of "what if" scenarios for water quality, and 3) an initial analysis of the biological feasibility of providing passage (all possible ways) at Iron Gate and Copco 1 & 2.	See studies 1.10 *Fish Passage Planning and Evaluation* and 1.3 *Water Quality Analysis and Modeling Process.*
389.	NMFS - I. Lagomarsino 3/23/01	Enclosure Pg. 2 Klamath River Flow below Iron Gate Dam	The existing FERC license minimum flows below Iron Gate Dam need to be revisited and perhaps the new license should adaptively incorporate minimum flows needed for salmon and steelhead absent any other mechanism. Federally-funded flow study work has been done over the last 3 years, but additional follow-up studies should also be done.	See study 1.12 *Instream Flow Analysis.*
390.	NMFS - I. Lagomarsino 4/18/01	Pg. 25 Comments on FSCD Para 1	An accurate accounting of baseline conditions is necessary to form the basis for comparing the relative level of impacts arising from various alternatives.	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
391.	NMFS - I. Lagomarsino 4/18/01	Pg. 25 Comments on FSCD Para 2	The availability and quality of existing data presented for various aspects of project related impacts are inconsistent.	Comment noted.
392.	NMFS - I. Lagomarsino 4/18/01	Pg. 26 Comments on FSCD Para 3	Describe the basis for all minimum flow schedules, the date that the requirement went into effect and whether the current requirements are adequate to protect aquatic resources.	See Exhibit B of the license application. Study 1.12 *Instream Flow Analysis* will help address requirements to protect aquatic resources.
393.	NMFS - I. Lagomarsino 4/18/01	Pg. 26 Comments on FSCD Para 3	FSCD should provide an accounting of the licensee's history of compliance with licensed minimum flow requirements.	PacifiCorp's compliance record for current FERC license minimum instream flows will be included in the FERC draft and final applications.
394.	NMFS - I. Lagomarsino 4/18/01	Pg. 26 Comments on FSCD Para 3	Existing studies are not likely to provide the level of detail necessary to compare the relative benefits of various relicensing alternatives.	Comment noted.
395.	NMFS - I. Lagomarsino 4/18/01	Pg. 26 Comments on FSCD Para 4	The scope of proposed studies is unclear.	Study plans have been revised through a collaborative process.
396.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 26 Recom-mended Study	**Hydrology** - Utilize USGS models and USBR model, in linked fashion, to characterize the water budget for actual hydrology for multiple climatic year-type scenarios for Project alternatives in combination with select USBR alternative. This should be done for the entire period of record from 1906 to the present. *See letter for more.*	See study 1.4 *Analysis of Project Effects on Hydrology* for a detailed description of hydrology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on hydrology will be included in the Water Use and Quality technical report and draft and final applications. PacifiCorp plans to use the USBR's KPOPSIM to evaluate Project effects on annual and seasonal hydrographs by water year type.
397.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 27 Recom-mended Study	**Instream Flow Studies** - Should be conducted using 2-dimensional physical habitat simulation modeling. *See letter for physical habitat study components.*	Instream flow model type and use will be developed as outlined in the study 1.12 *Instream Flow Analysis.*
398.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 28 Recom-mended Study	**Water Quality** - Should compare water quality impacts under various potential relicensing scenarios including minimum flows, and dam decommissioning and other potential fish passage alternatives. *See letter for more.*	See study 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 for detailed descriptions of water quality studies to be conducted by PacifiCorp. Analysis of Project impacts on water quality will be included in the Water Use and Quality technical report and draft and final applications.

Num.	Agency	Page	Comment Summary	Response Summary
399.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 29 Recommended Study	**Water Availability** 1. The model should be capable of flow routing between all reservoirs and river components. 2. The model would be able to be run for any single development (e.g. IGD and IGR), or for any combination of developments. 3. The model would be capable of simulating unimpaired flows and a full range of alternative operational scenarios as well as recreating historic flows. It should be capable of modeling operations as they might potentially be modified in the USBR's operations plans. 4. The model should be able to run for any timestep (monthly, daily, sub-daily) in order to support water quality and ramping studies. 5. The input into the model will be historical flow record and project operations data for the past 35 years (historical record with-Project) and for the limited pre-Project period from the Comprehensive Hydrological Study. The model will primarily rely on existing stations; however, additional gages may be needed to answer reach-specific questions. 6. The model would generally be run with daily flows, however, it would need to handle more detailed flow information to simulate peaking operations and ramping rates and to output to other studies. 7. Verify that the model operates accurately by comparing model runs to actual data. The model should accurately model outflow versus reservoir elevations and flows at all stations.	See study 1.4 *Analysis of Project Effects on Hydrology* for a detailed description of hydrology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on hydrology will be included in the Water Use and Quality technical report and draft and final applications. PacifiCorp plans to use the USBR's KPOPSIM to evaluate Project effects on annual and seasonal hydrographs by water year type. PacifiCorp does not agree it's necessary to "model" daily and sub-daily flows as suggested in this comment. PacifiCorp maintains a database containing hourly operations data at all the project facilities. It includes such information as reservoir elevation, flow through turbines, spill, etc. This data will be used to describe and depict the hydrologic effects of the project at an hourly time step, such as the effect of project operations on reservoir water levels and instream flows. This analysis will be conducted for each project facility in a way that depicts reservoir elevations relative to turbine flows. It will also show minimum instream flow in project reaches below each facility. The analysis will be done for each facility for each water year types.
400.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 30-31 Recommended Study	**Fish Passage** - This study will assess all feasible options, including ladder construction; trucking/barging of smolts; and facility decommissioning, to obtain anadromous fish passage to upstream habitat, which is currently blocked by hydropower facilities. *See letter for more.*	PacifiCorp will review through the Fish Passage Work Group a number of alternatives to account for fish passage.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
401.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 31-33 Recommended Study	**Channel Maintenance** - This study will characterize the effects of the dams and project operations on geomorphic processes and river channel conditions as well as to determine how far below IGR these effects extend. Key elements are to characterize pre-dam, existing, and post-dam geomorphic processes, sedimentation, and routing. *See letter for more.*	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* for a detailed description of sediment transport and geomorphology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on sediment transport and geomorphology will be included in the Water Use and Quality technical report and draft and final applications.
402.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 33 Recommended Study	**Hatchery Operations** - A complete review of hatchery operations should be performed to determine impacts of hatchery product on wild, native anadromous salmonids and recommend changes in hatchery practice to minimize impact hatchery product on wild fish. *See letter for more.*	See study 1.10 *Fish Passage Planning and Evaluation* – Hatchery Section.
403.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 34 Recommended Study	**Predation** - Sample fish and avian populations seasonally below IGD to assess populations of predatory species. *See letter for more.*	Predatory avian species will be addressed by recording locations of feeding perches/stations of piscivoirous birds observed during wildlife studies (TES, riparian mapping study). This information will be incorporated into the hatchery assessment. Predatory fish species will be assessed in the aquatic studies.
404.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 34-36 Recommended Study	**Riparian Habitat and Channel Maintenance** – Acquire riparian zone and river corridor high-resolution digital infrared or multi-spectral orthophoto imagery that would be used to create an Arc-info compatible orthographic image coverage. *See letter for more.*	Riparian habitat will be mapped using alternate methods. See study 2.2 *Wetland and Riparian Plant Community Characterization*. AND Instead of acquiring this type of imagery, large scale photography of the riparian zone will be obtained from the BLM and USFWS to supplement existing photography. See study 2.2 *Wetland and Riparian Plant Community Characterization*.
405.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 36 Recommended Study	**Flow Ramping** - Should be conducted to determine impacts of increasing and decreasing project discharges on native anadromous salmonids and the potential for stranding, isolation, displacement, increased vulnerability to predation and scouring of ingravel life forms. *See letter for more.*	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
406.	NMFS - I. Lagomarsino 4/18/01 Recommended Study	Pg. 36-37 Recommended	**Coordination** - Identify and describe existing and proposed, initiatives, and programs that are likely to significantly affect anadromous salmonids and/or their	Some of this information will be in the draft and final application. Additional information may be in the NEPA cumulative effects analysis if FERC does one.

Num.	Agency	Page	Comment Summary	Response Summary
		Study	habitat in the Klamath Basin. *See letter for more.*	
407.	US Forest Service (USFS) - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 1.2 Last Para	"…PacifiCorp will evaluate reasonable options and requests to enhance resources…in the Project area." Need to extend protection/enhancement evaluations to the affected resource areas or else extend the Project area itself well beyond current FERC boundaries (e.g. need to evaluate downstream effects on WSR segment).	Evaluation area or study area is based on specific Project impacts on a given resource.
408.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 1.4 (1)	Project objective 1 says that PacifiCorp will identify impacts and protect, mitigate and enhance…based on sound science. This should include use of peer-reviewed work on instream flows such as United States Geologic Service (USGS) Mid-Continental Ecological Science Center group, and University of California at Davis water quality analyses, which are only generally referenced, with basic conclusions ignored. Ayres and Assoc. are solely relied on for conclusions about geomorphology, when this study contains several contradictions with other investigators (e.g. CDWR, 1981) that have not been validated. The domain of Ayers and Assoc. study was also limited to the river outside the project area, yet is used to address conditions within the project area.	Comment noted.
409.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 1.4 (3)	While Objective 3, working with resource agency management goals, is admirable, the FSCD appears to be ambiguous as to whether resources downstream from the Project area are included.	The study area downstream of Iron Gate Dam is variable according to extent of Project impacts on a given resource. See specific studies.
410.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 1.4	Last paragraph, 1st sentence says that goal is "… protecting the environment in the Project area. Same comment as stated above.	Comment noted.
411.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 2.1	Paragraph 3, Sentence 2 states "The U.S. Bureau of Reclamation (USBR) owns the Link River dam and PacifiCorp operates it under USBR's directive." What restraints or obligations does USBR have to PacifiCorp that might influence the rate of release from Upper Klamath Lake and through the Link River dam, thereby	Para 4 response: 1) Potentially the FERC boundary may need to be expanded to include new PM&E areas or sites. Boundary revisions will be first proposed in the draft application. 2) No

Num.	Agency	Page	Comment Summary	Response Summary
			influencing downriver habitat below IGD? Paragraph 3 Sentence 6 states "Keno reservoir buffers inflow and outflow of USBR's Irrigation Project." What does PacifiCorp receive from this agreement? What is the influence of these actions on the Klamath River fisheries? Paragraph 4 Sentence 1 states "PacifiCorp anticipates that the FERC boundary will be revised during the FERC re-licensing process." Why does PacifiCorp believe that there will be a change in the boundary, and where will that new boundary likely be set?	3) They help define the area of impact of the Project. Possibly. If any area outside FERC boundary is under review for PM&E development. Location of new boundary is presented in Exhibit G of the license application.
412.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 2.2	Paragraph 1 Sentence 1 states "PacifiCorp anticipates that the FERC boundary will be revised during the …process." This boundary could have ramifications on the analysis area, and hence appropriate studies. If analysis area is not coincident with Project area, and varies by resource (per 1/12/01 communication with Todd Olson), then the document needs to show analysis area boundaries.	Comment noted.
413.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 7 FSCD 2.3	Overview of Flow Regulation gives helpful background on the relationship of the Project operations to the USBR project. Currently, the outcome of both the USBR's annual operating plan and the associated annual contract with PacifiCorp is uncertain in terms of flows below IGD. FSCD should outline a general adaptive management strategy to display the mechanisms for ensuring resource protections within PacifiCorp operational control in the event that the long-term Klamath Project Operations Plan (KPOP) is not in place as of 2006 or there is a change in the contract with the USBR at renewal time in 2006 (USDI, 2000). Paragraph 2 Sentence 4 states "Agricultural returns…enter the Klamath River through the ADY canal just upstream of Keno dam." If the flow into these canals is variable, but the flow out of the canals is	Comment noted; see Exhibit B for operations information.

Num.	Agency	Page	Comment Summary	Response Summary
			relatively constant, where and how is the excess water stored? How is the water that is moved into the Lost River system managed? When does this movement occur and when is it released? What is the quality of the water when it leaves the Lost River system in comparison to when it enters the system? In paragraph 3, PacifiCorp states that their operations have "little or no control over the river's flow regime, except on a short-term basis and at certain locations." What control does PacifiCorp have on flow, especially during critical summer months?	
414.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD Table 2-1	Has there been any retrofitting of the structures (especially of older power generating facilities) since construction was completed? How does the current output of these facilities compare with what would be potentially possible today? What is the current condition of the older facilities? What is the estimated life span of all the various structures including the dams and associated reservoirs?	1) Without knowing what "structures" is to include, the generic response is yes, the projects have normally undergone some level of retrofitting since their construction. This will be described in full detail in the application – see Exhibit C. 2) The "potentially possible today" may focus on hydrologic potential, economic potential, or potential after basin environmental or other restraints are considered. This will be addressed in full detail with defined boundaries in the application. 3) As in any business, the equipment and Projects require continuing upgrades to maintain a functioning and cost-effective operation. Generally, the Project may be considered good to acceptable, however, each one has portions with justified upgrades that will maintain an acceptable operating level. 4) Life span often relates to its functionality. A reservoir's life span was dependent upon its stability or effectiveness toward public safety. A life span in years may be addressed for specific elements of the various projects if it is believed to be less than the term of the next license. Such issues should be stated in the application, along with the Company's proposal to extend that life through equipment replacements, upgrades, or modifications.
415.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 2.4.6.2	Since 1996, USBR has set instream flow releases from IGD to be generally higher than those required by FERC. How did USBR derive these numbers? How rapidly do these flows change from May to June? How do these numbers compare with the historic flow patterns? Paragraph 3: With the release of flows at the IGD	See Exhibit B – USFS may need to contact USBR.

Num.	Agency	Page	Comment Summary	Response Summary
			causing the river to fluctuate a limited 3 inches per hour or 250 cubic feet per second per hour, how does this affect the salmon fry in the shallows?	
416.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 2.5.1	Paragraph 1: How much potential anadromous habitat is in the 4630 square miles of drainage basin above the IGD?	See study 1.10 *Fish Passage Planning and Evaluation.*
417.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 2.5.3.1	Hydrologic Data Sources: was data normalized for climatic conditions, (e.g. any comparison between the different data sets could be skewed if they occurred during wetter or drier periods, hence masking pre- and post-project and pre-/post-USBR project affects)? Waddle (1995) did such normalization prior to development of the USGS SIAM model; however, PacifiCorp does not mention this work and potential modeling tool in the FSCD. Waddle also used early data (which USGS investigators normalized) from Spencer Bridge gage to lengthen the period of pre-regulation record (period of record is 1915-1930), yet PacifiCorp does not refer to any use of this data. Similarly Ayers and Assoc. used Fall Creek Gage to lengthen the period of record for IGD gage, since the drainage area is close (period of record 1923-1982).	Comment noted.
418.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 3.0	The sedimentation rates in the reservoirs are not well documented, nor are the effects of the dams on the sediment regime downstream of each reservoir. Since changes in the sediment regime have the potential to affect fish habitat, it is important to quantify and understand these effects. Studies should be developed to answer these questions.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
419.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 3.1.1	Refer to Comment for 3.0.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
420.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 3.1.3	Refer to Comment for 3.0.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
421.	USFS - M. Boland	Pg. 8	Although the socioeconomic and land uses are	PacifiCorp will provide socioeconomic information in the license

Num.	Agency	Page	Comment Summary	Response Summary
	and S.E. Woltering 3/19/01	FSCD 3.1.5	addressed for communities within Project boundaries, there seems to be no mention of communities outside of the Project area that depend on Klamath River resources. What are the existing socioeconomic effects of the project on water quality and fishery health for communities downriver from IGD? What key land uses downstream from IGD are affected by the health of the river's fishery/aquatic system and favorable water quality and quantity conditions?	application per FERC requirements. See Socioeconomic studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1* and 7.2 *Analysis of Project Effects on the Socioeconomic Environment – Phase 2*.
422.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 3.2.5	Water quality in Copco Reservoir numbers 1 and 2 and IGR are degraded during summer months due to the influx of *Aphanizomenon flos aquae.* What influence do the reservoir conditions have upon the degradation of the water? Furthermore, what is the impact upon the water quality downstream of the IGD as a result of this degradation.	See study 1.3 *Water Quality Analysis and Modeling Process.*
423.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 3.2.7	What impact does the hydropower project have on water quality and temperatures, two elements influencing fish habitat and survival, downstream from IGD?	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
424.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 8 FSCD 4.1.3	Proposed Uses of Project Waters states, "Not proposing any changes at his time, …need for additional measures to be reviewed and incorporated as necessary." It is unclear whether PacifiCorp would conduct studies, if needed, associated with any changes that come up. Flexibility based on assessment results is implied in at least one of the studies: Evaluation of Water Quality, 4.5.2.2 (last paragraph), but how PacifiCorp plans to deal with changes to the initial proposal after Phase II is complete is not described. Though PacifiCorp has not proposed any changes within its current proposed action, the need for change is evident as based on current Endangered Species Act (ESA) listings and the upcoming Total Mean Daily Load process. How does PacifiCorp propose to incorporate change as the need is indicated?	See license application for PacifiCorp's proposed project changes in next license.
425.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.2.1.4	Paragraph 1: How were the potential impacts of Keno, J.C. Boyle, and IGD evaluated during the last re-relicensing period in the 1950s? How do those potential impacts now compare with the existing impacts (including water quality and fish production) that we find about 50 years later?	Comparatively speaking, little attention was given to the potential impacts prior to the construction of the noted projects. The focus of this current relicensing is existing impacts and PacifiCorp is completing a great effort to identify them.
426.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.2.3.2	If there is a high degree of thermal stratification in the IGR and Copco Reservoir and a lesser, yet still substantial, thermal stratification in the J.C. Boyle Reservoir; how do these conditions affect water quality and fisheries production in the Klamath System, including downstream of IGD?	See study 1.3 *Water Quality Analysis and Modeling Process.*
427.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.3.3.1	Within the ranking of six priority water uses as stated by the Klamath River Basin Contract, which ranking puts the Native Americans water rights under consideration?	That question is best answered by a KRBC commissioner.
428.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.3.3.2	"PacifiCorp assumes that the Project does not affect waters managed by the tribe" (Hoopa). Is this true for every aspect of the Klamath River System including flow regime, water quality, and temperature throughout	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			all periods of the year? At what point downstream from the project do these effects become negligible?	
429.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.3.3.4	Although Federal agencies do not have specific water quality management objectives in the project area, the ACS and the WSRA guide them. This includes maintaining and restoring water quality necessary to support healthy riparian, aquatic, and wetland ecosystems, as well as insuring project effects do not invade or unreasonably diminish the scenic, recreational and fish and wildlife values present in 1981 (date of Klamath River's WSR designation). Water quality must stay within a range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities. Considering that federal agencies must follow ACS guidelines, PacifiCorp must take account of the ACS and WSRA.	Comment noted.
430.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.4	Project Effects on Water Quality (p. 4-26) says that Project operations have limited control over activities that can affect water quality because reservoirs provide a small proportion of storage capacity relative to river flow, as Table 2-3 demonstrates. While this may be accurate for total mean annual runoff (due to large capacity of Upper Klamath Lake) for critical months for water quality, IGR releases account for a disproportionate amount of the downstream river flow in dry years during that period (e.g. In the droughts of 1977 and 1986 to 1994, flows at Keno account for as much as 25% of the flow at the mouth according to Ayers). There are discrepancies as to the exact proportion, depending on the investigator (BHI, 1996; NMFS, 1999). The latter document included hydropower operations in its assessment of the USBR's Biological Assessment for the 1999 operations plan, so it is a combined effect which has significance for habitat quality. PacifiCorp needs to do definitive work	See studies 1.4 *Analysis of Project Effects on Hydrology*, 1.3 *Water Quality Analysis and Modeling Process* and Exhibit B.

Num.	Agency	Page	Comment Summary	Response Summary
			to demonstrate what proportion of flows, at what times of the year, are within PacifiCorp's operations and maintenance control and the extent to which the following parameters are affected: temperature, dissolved oxygen (DO), nutrients, pH, alkalinity, chlorophyll A, conductivity, total dissolved solids, and turbidity. It is stated that Project operations have limited control over activities that can affect water quality. This view is argued from a standpoint primarily focused on flow. How else do hydropower operations (including reservoirs) affect water quality within the river system? This would also include the use of the Keno reservoir by PacifiCorp (for USBR purposes) to cause the river to "flow backwards."	
431.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 9 FSCD 4.4.1.1	Paragraph 1 states "Although the Klamath River supports coldwater biota, water temperatures can exceed stress thresholds…during the summer." Has the hydropower project altered historic temperatures within the Klamath System? It is also stated in the second paragraph that lower temperatures downstream are probably due to greater shading and faster water transport. Both of these parameters are greatly altered by the development of reservoirs upstream. Table 4-2; Operations Activities and their Control displays assumptions that structural barrier, impoundment, and long-term (seasonal) flow regulation are not controllable, while spill releases and long-term (seasonal) reservoir water fluctuations have limited control. It is confusing why seasonal water level fluctuations are somewhat controllable, while seasonal flow regulation is not. Also, the table footnote gives the "basis of non-structural operational changes", yet nowhere are structural changes discussed, in spite of demonstrated significant effects of the impoundments on downstream water quality, especially temperature.	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			The last paragraph on page 4-27 states "A preliminary analysis by the USGS found that discharge from IGD might have a perceptible moderating effect on water temperature in the river to approximately 10 miles downstream of this dam." Is this a published study? How does this process of cooling work? What effect do the reservoirs have on the river beyond the 10 miles downstream? What effects does releasing water at a relatively constant temperature have on water quality and various other aquatic values within the river system? Were these effects considered during the initial licensing of IGD and the other structures within the project?	
432.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 4.4.2.3	It was previously mentioned that IGR is typically stratified until October or November when the water again becomes well mixed in regards to DO, temperature, etc. How well has this been studied? What effect does this cyclic stratification have on water quality downstream of the reservoir?	See studies 1.1 *Compilation and Assessment of Existing Water Quality Data* and 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area.*
433.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 4.4.3	Based on the discussion of pH in this section, it seems that pH values in Copco and IGR can approach maximum values as in Upper Klamath Lake. Explain what effects high pH values have within the reservoirs as well as downstream. What effect do these levels have on fish within the river system, including downstream of IGD?	See study 1.3 *Water Quality Analysis and Modeling Process.*
434.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 4.4.4	"Reservoirs act as sinks for nitrogen and phosphorous." What kind of impact does this have on normal river processes (e.g. water quality, aquatic resources, algal blooms)?	See study 1.3 *Water Quality Analysis and Modeling Process.*
435.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 4.4.6	What are historical and normal pre-project values for total dissolved gas and total dissolved solids in the Klamath System? What impact does this have on water quality and aquatic resources? Was this at all analyzed with the re-licensing in the 1950s? Drought periods are common in north-central California; how will total dis-	See studies 1.1 *Compilation and Assessment of Existing Water Quality Data* and 1.6 *Monitoring and Analysis of Water Quality During Project Maintenance Operations.*

Num.	Agency	Page	Comment Summary	Response Summary
			solved gas values be kept at mean normal when turbines are forced to operate at flows below turbine efficiency?	
436.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 4.5.1.3	Determination of needed water quality studies will not likely occur until after late April. This will be after the period allotted for study requests to be submitted to PacifiCorp. Will the public, various agencies, and the tribes have the opportunity to comment upon or modify water quality studies proposed by PacifiCorp?	Yes – PacifiCorp has followed a collaborative process since early 2002.
437.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 4.5.2.2	Approach, Methodology and Schedule, Evaluation of Water Quality during Maintenance Events: The 3rd paragraph says that sampling will be done in summer and fall during maintenance events, yet the following facilities are normally maintained only in the spring: o Keno spill gate testing (2.4.2.3) o Copco 1 turbines and spill gates (2.4.4.3) o Copco 2 turbines and spill gates (2.4.5.2) o Iron Gate turbine (2.4.6.3)	Comment noted.
438.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 10 FSCD 5.1.1	In paragraph 3, the Pacific lamprey are described as being land-locked upstream of IGD. It is very likely that there are also land-locked steelhead located upstream of IGD. What is the genetic make-up of Rainbow (steelhead) upstream of IGR and Copco? Has interbreeding occurred between the steelhead and redband trout? Is it possible that allowing downstream passage of existing stock remnants and providing for upstream migration into the project area promote recovery of the steelhead in this area without active re-introduction of fish?	See study 1.17 *Investigation of Trout and Anadromous Fish Genetics in the Klamath Hydro Project Area.*
439.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 11 FSCD 5.1.2.9	Project Area Fish and Aquatic Habitat for Lower River section cites Ayers and Assoc. report, saying that IGD to Shasta River reach is where most of the anadromous fish spawning in the mainstem occurs. First, is this true for all species? Second, the cited results say that the reach contains a wide range of particle sizes, loosely packed and easily excavated by spawners. It refutes a prior report by the State of California (CDWR, 1981),	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*

Num.	Agency	Page	Comment Summary	Response Summary
			which indicated that this reach had an armored bed. However, Ayers and Assoc. did not perform particle size sampling for this reach. They based their conclusions on incipient motion calculations and on observations of the streambed made from a boat between IGD and Little Bogus Creek. In their report, they only indicated sediment contributions at river locations from River Mile 0 to 176.7 (below Shasta River, downstream). Validate Ayers and Assoc. work with an independent investigation, and correlate with spawning distribution and density data. Paragraph 2 states "Spring Chinook…the run does not extend much above the mouth of the Salmon River." Spring Chinook are known to have been able to access the Iron Gate site prior to construction of the IGD. Have hydropower operations in any way been connected with the decline of this species?	
440.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 11 FSCD 5.2	Add Klamath River Basin Fisheries Resource Plan (KRBFRP) for the Lower River. The enabling legislation for the KRBFRP is mentioned in Section 5.3.3. The Klamath River Basin Fisheries Task Force implements this plan through various educational and restoration activities.	Comment noted.
441.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 11 FSCD 5.2.2	The Northwest Forest Plan (NFP), including ACS, applies to all federal agencies discussed in this section, including United States Forest Service (USFS), National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (FWS), Bureau of Land Management (BLM). In general, the ACSOs discuss maintaining and restoring every parameter (chemical, biological, and physical) needed to sustain native aquatic flora and fauna in the area. This should be included in greater detail as direction to federal agencies.	Comment noted.
442.	USFS - M. Boland and S.E. Woltering	Pg. 11 FSCD	Add to the second sentence that Federal agency stewardship is also directed by Federal laws, most	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/19/01	5.2.2.2	pertinent being the ESA and WSRA. The natural resources, for which the USFS is mandated to provide stewardship, include 170 miles of Federal and State WSR corridor below the Project area. Also, delete the reference to KRMP Restoration Plan. Add this sentence to the end: "In addition, the USFS works collaboratively with other members of the Klamath Fisheries Task Force to implement the KRBFRP (reference Section 5.2)." The Klamath River WSR designation in 1981 was based upon its free-flowing condition, its water quality, and its outstandingly remarkable value of anadromous fisheries. Section 7(a) of the WSRA states that no federal water project should invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of WSR designation. Remove the reference to WSR Plan; no separate plan exists for the KNF and SRF. The WSR Plan is part of the FPs. The FPs, FS Manual, and WSRA provide direction for WSR stewardship.	
443.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 11 FSCD 5.3.1	Overview of Potential Issues – The following sub-issues and issues should be included in the list and considered by PacifiCorp during the study and analysis period. Reservoir Presence (new issue) – reservoirs have displaced coldwater habitat with warm-water, they introduce exotics into the system, current summer operations impact the wetland function and snowmelt processes of the upper basin, reservoirs affect water quality in general. Also, how do reservoir turnover periods affect water quality? Total dissolved gas may be a critical concern during drought periods. Instream Flows – PacifiCorp will follow USBR directives in the future for flow guidance, but currently this isn't known as USBR is engaged in an EIS process to determine suitable flows, and it is not known whether their recommendations will match with the	Comment noted; see Aquatic studies.

Num.	Agency	Page	Comment Summary	Response Summary
			current proposed actions (and structures) that PacifiCorp is presenting. As above, the in-stream flow assessment needs to consider contributions of wetland and snowmelt processes to the Klamath River system. Also, this item has no discussion of geomorphic changes that can result from long-term regulation of the annual hydrograph, and the resultant effect of those changes on fish habitat. River Flow Fluctuations – small changes (inches) that occur rapidly when salmonid fry are in edge habitat can be critical; ramping and stage changes need to be considered below IGD. Fish Passage – structures limit fish movement with impacts extending beyond the mere loss of habitat upstream. Apart from only considering structure impedance to fish movement, unfavorable water conditions (water quality, water temperature, flows) can affect fish passage upstream and downstream (e. g. the limited range of spring chinook). Water Quality – how do reservoirs affect nutrient-rich waters, including algal blooms? What are impacts to downstream areas and listed species from this process? Some preliminary observations may indicate that river reaches downstream of Seiad may be nutrient-starved. These observations would need to be determined as well as the influence of hydropower operations. Aquatic Health (new issue) – the relationship of water quality and flows to fish/aquatic health, especially out-migrating smolts, needs to be determined. There have been frequent fish kills in the Klamath River downstream of IGD. Hatchery operations – does full mitigation for unavailable anadromous habitat occur? Have the genetics of all historical salmonids stocks within the Klamath Basin, including the upper basin, been preserved by Iron Gate Hatchery (IGH) operations? If not, has the IGH mitigated for this loss? The dominant	

Num.	Agency	Page	Comment Summary	Response Summary
			pre-project chinook stock was the spring chinook but IGH manages strictly for fall chinook. Non-native Escapees from the Reservoir (new issue) - what are the interactions between non-native escapees from the reservoir and native river stocks? This is similar to adverse interactions between hatchery and wild stock. Recreation Fishing – how do reservoirs affect recreational fishing downstream from IGD, in terms of fishing success, satisfaction, and socioeconomics of riverside communities?	
444.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 12 FSCD 5.3.3	This item has no discussion of geomorphic changes that can result from long-term regulation of the annual hydrograph, and the resultant effect of those changes on fish habitat. Paragraph 2 states "PacifiCorp intends to follow USBR's directives for in-stream flows released at IGD during the next license period." USBR is currently involved in an EIS analysis to determine effects of its operations and to determine preferred flows, at different times of the year, including below IGD. However, a preferred, let alone a selected, alternative operations schedule has not been fully identified and is not available for comment during this first stage of consultation.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* – Also USBR EIS has yet to be completed; however, PacifiCorp will pass flow under direction of USBR.
445.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 12 FSCD 5.3.4.5	Downstream from Copco 1 and 2 Powerhouses – the assumption that daily ramping is not a concern for fisheries is not supported by Deas and Orlob (1999), which shows that flow pulses from peaking operations into and through IGR may have an indirect effect on water quality below IGD due to the short residence time of reservoir water. In fact, the authors noted that defining boundary conditions of IGR inflow (e.g. Copco releases) and correlating them with diurnal changes in water quality are a priority for the next phase of water quality assessment.	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
446.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 12 FSCD 5.3.4.6	3rd Bullet: Flow modeling (hydrodynamic and pulse flow study) suggests that stage decreases were "halved" 50 miles downstream of IGD. How far downstream until this effect virtually disappears? 4th Bullet: Potential stranding of habitat in the area below IGD has neither been located nor quantified. Without this information, and the extent of the affected area, the impact of ramping and stage changes cannot be assessed. The timing of these operations needs to be known, as does the out-migration timing of potentially impacted tributaries. Also the affects (mortality or harm) to small fish fry in edge habitat continually being forced to flee needs to be assessed.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
447.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.3.5	Paragraph 1: PacifiCorp shouldn't limit the prospects of fish passage and the re-introduction of anadromous fish to the upper basin based on current conditions of this habitat. These habitats, as well as habitats in key tributaries, will likely improve, especially during the 30 to 50 year length of a FERC license. The increasing public interest in watershed recovery, ESA actions, and the increasing numbers and activities of watershed councils within the Klamath Basin further suggest not limiting fish passage considerations.	Comment noted; see study 1.10 *Fish Passage Planning and Evaluation.*
448.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.3.7	IGH meets FERC mandated quota for chinook and coho. What are these quotas? How do they compare with estimated production of unavailable habitat upstream? Why are steelhead quotas not met?	See study 1.10 *Fish Passage Planning and Evaluation* – Hatchery Section.
449.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.3.8	Water Quality in Fish section, 2nd paragraph says that the only relevant issue the Project can control is the amount of water released into bypass reaches. This seems to contradict the first paragraph, 2nd sentence, which talks about Upper Klamath Lake nutrient-rich water. Although the project manipulates the reservoir levels, and inflow and outflow rates and timing to some degree, PacifiCorp is implying that it has no control of reservoir water quality. How much spring inflow is	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			estimated to occur between Copco 1 and 2? Implementation of height-adjustable penstock intakes and modification of water-withdrawal procedures at Copco and Iron Gate Reservoirs may limit current stratification impacts to water quality. Project changes in dam heights, dam operation, dam removal or even new dam locations, may improve water quality conditions.	
450.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.5	Refer to Comment for 3.0.	
451.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.5.1.1	Proposed Studies, Ramping Evaluation at J.C. Boyle – 1st paragraph says that "Copco powerhouses discharge directly to reservoirs and thus do not produce flow fluctuations. As for the peaking patterns discussed in 5.3.4.5, ramping patterns may also cause water quality fluctuations. Depending on the season, this could either compound or offset the effects of IGR effects on river water quality (Deas and Orlob). This is unclear and needs to be examined for the reach below IGD. In addition, the Hardin and Davis ramping study done in response to the 1999 NMFS BO indicated that the additional work was needed to definitively assess the effect of IGD ramping on fisheries. These included tributary conditions and more stage data points so that stage could be correlated for downriver reaches between IGD and Seiad gages. Although their initial study demonstrated that stage effects were approximately half the immediate below-dam fluctuations at 50 miles downstream, the study needs to be extended downriver to address potential for fish stranding and fish die-offs from water quality changes associated with ramping, as has occurred in the past decade. Though not a load-factoring site, ramping or stage changes at IGD may be critical for Chinook, coho or steelhead fry.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*

Num.	Agency	Page	Comment Summary	Response Summary
452.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.5.2.1	Last Bullet: PacifiCorp doesn't intend a flow study below IGD. Again, flow effects to coho and other anadromous and aquatic stocks can't be assessed without it.	PacifiCorp will pass river flow at Iron Gate dam based on river management of USBR.
453.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.5.3.2	"The general approach for determining information needs would be for PacifiCorp and the advisory team to consider such parameters…". Hydrologic conditions for the Project (water quality and quantity) are listed as a parameter to consider. The future potential condition of upriver habitats, currently blocked by IGD, should also be considered, as much emphasis is being placed on watershed recovery by ESA and the interest of the public in general, as evidenced by the growing number of watershed councils within the Klamath Basin over the last 10 years. This future look to watershed potential is in keeping with PacifiCorp's position that the future role of hatcheries should also be considered in passage determinations.	See study 1.10 *Fish Passage Planning and Evaluation.*
454.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 13 FSCD 5.5.4.1	"While most of the effort will focus on redband trout….". Some assessment of current genetic description of redband/steelhead stocks should be included to determine vestige steelhead genetics upriver of IGD and the amount of interbreeding between redband and forced-resident steelhead stocks. Did redbands historically inhabit Klamath River reaches such as J.C. Boyle affected reaches and the area around Keno? Maybe this was always an area of inter-breeding? Maybe disease associated with anadromous stocks kept redbands limited in extent (to Klamath marshes) and they expanded into downriver habitat with the exclusion of anadromous fish into the upper basin?	See study 1.17 *Investigation of Trout and Anadromous Fish Genetics in the Klamath Hydro Project Area.*
455.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 14 FSCD 6.2.2.1	3rd paragraph – specify which WSR segment is discussed; refer to "the Oregon segment" or "J.C. Boyle powerhouse to Stateline segment" to distinguish it from the California or Iron Gate-to-the-sea segment.	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			In fact, both segments are potentially affected and need to be included in the Project analysis area. Therefore, the first sentence should read "The Northwest Forest Plan (USFS, Department of Interior and BLM, 1994) covers all federal lands west of Keno reservoir (including BLM and USFS lands in N. California) and two WSR sections of the Klamath River. The last sentence in section 6.2.2.1 is accurate.	
456.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 14 FSCD 6.2.2.2	Take out the reference to KRMP Restoration Plan since the USFS is only one of several agencies charged with KRBFRP implementation. See 5.2 comment. The WSR Plan reference should be deleted (See 5.2.2.2 comment). Non-native invasive species are an additional issue, which was mentioned at the 10/19 pre-consultation meeting.	Comment noted.
457.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 14 FSCD 8.1.1.9	Klamath River Downstream of IGD – the 2nd paragraph should be rewritten because the Klamath River area that runs through the KNF is generally termed the "Middle Klamath" rather than the "Lower Klamath," which is generally considered to be from Ishi Pishi Falls near Somes Bar to the mouth. Also 2nd paragraph: the 3rd and 4th sentences are not accurate and should be deleted. WSR classifications were established during WSR designation in 1981 of the Klamath (California segment), Scott, and Salmon Rivers and have never been changed for areas within the NFS boundaries.	Comment noted.
458.	USFS - M. Boland and S.E. Woltering 3/19/01	Pg. 14 FSCD 9.2.2.2	There is a global reference in the document to the KNFP as "(USFS 1994b). The KNFP was actually approved on July 5, 1995 and unfortunately the document's cover misstates the date as 1994, leading to this common misinterpretation. Page 9-6, second paragraph, sentence six: delete this inaccurate statement since it repeats the error about WSR reclassification mentioned in 8.1.1.9.	Comment noted.
459.	USFS - M. Boland	Pg. 16	**Map River and Associated Riparian Zone.** How	See studies 2.2 *Wetland and Riparian Plant Community*

Num.	Agency	Page	Comment Summary	Response Summary
	and S.E. Woltering 3/19/01 Recommended Study	Recommended Study 1	could Project flow changes affect riparian communities? What is the effect of Project operations, particularly ramping and sediment changes, on the physical integrity of the aquatic system? How does the project affect the scenic quality of the river corridor and consequently recreational uses? How could the Project affect Native American traditional uses and subsistence needs? *See letter for more.*	*Characterization*, 5.1 *Visual/Aesthetic Resource Study* and 6.3 *Traditional Cultural Properties Study*.
460.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 18 Recommended Study 2	**Riparian Zone Special Status Species Studies** *:* How could Project flow changes affect habitat and viability for species of concern.	Ramping, Hydrology, Riparian and Wildlife studies will provide information to help make assessment. AND See study 2.2 *Wetland and Riparian Plant Community Characterization* will be conducted to address this.
461.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 19 Recommended Study 3	**Invasive Exotics and Noxious Weed Inventory and Mapping** What is the potential for non-native species from the Project area to reach NFS lands and waters?	See study 2.7 *Noxious Weed Inventory*.
462.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 20 Recommended Study 4	**Investigate Preybase of Bald Eagles Nesting in Association with Klamath River System** How could Project flow changes affect habitat and viability for species of concern?	Not included. Bald eagles will be addressed in study 2.3 *Threatened, Endangered, and Sensitive (TES) Species Inventory*.
463.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 21 Recommended Study 5	**Klamath River Basin Analysis of Fish Production** 1) What are the cumulative effects from Project facilities and operations separately and in combination with other water resource projects on the cold-water anadromous fishery? 2) How does the Project affect aquatic species habitat needs, such as habitat connectivity, quality, and quantity? 3) How has fish production changed over time (historic to current) and how does it vary throughout the Project-affected area? 4) Are Project operations and facilities consistent with mandates of the WSRA and the Klamath Act as adopted in 1986 (PL 99-552)?	See Aquatic studies and Aquatic section of Exhibit E in the license application.
464.	USFS - M. Boland	Pg. 23	**Comprehensive Hydrological Study** 1) What is the	See study 1.4 *Analysis of Project Effects on Hydrology* for a detailed

Num.	Agency	Page	Comment Summary	Response Summary
	and S.E. Woltering 3/19/01 Recommended Study	Recom-mended Study 6	natural range of hydroclimatic variation? 2) How does the Project affect the hydrologic regime and instream flows in the Klamath River?	description of hydrology studies conducted by PacifiCorp.
465.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 25 Recommended Study 7	**Operations Model** 1) What are the individual and additive effects from Project facilities and operations on cold-water anadromous habitat, populations, and communities**,** especially downstream of IGD? 2) How does the Project affect aquatic species habitat needs, such as flow amounts, flow timing**,** and water quality, including temperature? 3) Are Project operations and facilities consistent with mandates of the WSRA and Klamath Act, which emphasize the anadromous fishery? 4) What are the operational limitations of specific facilities when it comes to alternatives to improve water or habitat quality? 5) How could the Project affect Native American traditional uses and subsistence needs?	Information to help answer these questions will be gathered through various relicensing studies (see Water Quality, Aquatics and Cultural resources studies).
466.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 27 Recommended Study 8	**Instream Flow Study From Iron Gate Dam to Klamath Gage** 1) How does the Project affect instream flows and wetland habitat? 2) Do Project operations affect aquatic refugia? If so, how? 3) How does the Project affect aquatic species habitat needs, such as water temperature? 4) How could the Project affect Native American traditional uses and subsistence needs? 5) How does the Project affect recreational settings, especially for water-based recreational rafting, boat and bank fishing, and water play?	See studies 1.3 *Water Quality Analysis and Modeling Process*, 2.2 *Wetland and Riparian Plant Community Characterization*, 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study* and 3.1 *Recreation Flow Analysis*.
467.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg.30 Recommended Study 9	**Copco and Iron Gate Reservoir Release Ramping Study** 1) What is the effect of Project ramping operations on the physical integrity of the aquatic system? 2) How do any changes affect anadromous fish and special status riparian species? 3) For fish, will there be increased predation and stranding, or a reduced food source of macroinvertebrates, or reduced cover? 4) For riparian indicator species, will there be a loss of amphibian eggs or will Western pond turtle young be subject to predation or velocity-associated mortality? 5)	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, and Copco No. 2 Dam.*

Num.	Agency	Page	Comment Summary	Response Summary
			How could the Project affect Native American traditional uses, and subsistence needs?	
468.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 32 Recommended Study 10	**Water Quality Study of Reservoirs and River** 1) How have Project reservoirs and operations altered water temperature in comparison to an unimpaired flow regime? 2) How does the Project affect water quality and dependent species? 3) Do Project operations affect aquatic refugia? If so, how? 4) What are the current and potential cumulative impacts to water quality from this project in combination with the Klamath Irrigation Project, both inside and outside the Project area? 5) How far downstream would these effects persist under various hydrologic conditions?	See studies 1.1 *Compilation and Assessment of Existing Water Quality Data*, 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area*, 1.3 *Water Quality Analysis and Modeling Process*, 1.4 *Analysis of Project Effects on Hydrology*, 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*, and 1.6 *Monitoring and Analysis of Water Quality During Project Maintenance Operations* for detailed descriptions of water quality studies to be conducted by PacifiCorp. PacifiCorp is conducting further scoping with the key agencies to resolve what and where analysis and modeling tools are needed to assess Project water quality effects and management. Analysis of Project impacts on water quality will be included in the Water Use and Quality technical report and draft and final applications.
469.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 35 Recommended Study 11	**Aquatic Species Composition and Health Study** How does the Project affect aquatic species habitat including such water quality conditions as DO, pH, and temperature and how do Project induced changes in water quality affect fish diseases and stock health. The fate of out-migrating smolts and other stocks in the Klamath River System and the magnitude of fish health issues, influencing their growth and survival needs to be determined. How do hatchery operations influence the health, composition, growth and survival of wild (non-hatchery origin) fish assemblages, especially salmonid species of concern?	See studies 1.3 *Water Quality Analysis and Modeling Process*, 1.21 *Investigation of Ceratomyxa shasta in the Klamath River: Keno Reach to the Confluence of the Shasta River*, and 1.10 *Fish Passage Planning and Evaluation*.
470.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 39 Recommended Study 12	**Iron Gate Hatchery Effectiveness Study** How does the Project affect aquatic species habitat needs such as water temperature?	See studies 1.10 *Fish Passage Planning and Evaluation* (Hatchery Section) and 1.3 *Water Quality Analysis and Modeling Process.*
471.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 42 Recommended Study 13	**Aquatic Macroinvertebrate Study Along the Klamath River Below Iron Gate Dam** 1) What are Project impacts to the quality and quantity of the Klamath River macroinvertebrate resource? 2) What impacts do the existing macroinvertebrate populations	See studies 1.11 *Macroinvertebrates Study*, 1.19 *Investigation of Klamath River Freshwater Bivalves in the J.C. Boyle Peaking Reach and Downstream of Iron Gate Dam* and 1.20 *Spring '2003 Macroinvertebrates Study*.

Num.	Agency	Page	Comment Summary	Response Summary
			have on dependent salmonids in the Klamath River? 3) What do existing assemblages and densities of macroinvertebrates indicate about water quality conditions within the Klamath River? 4) What influence do flows and ramping rates have on the quantity and quality of macroinvertebrate drift samples?	
472.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 44 Recommended Study 14	**Fish Production Model** 1) What are the individual and additive effects from Project facilities and operations, on anadromous production within the Klamath system, especially downstream of IGD? 2) Are there habitat connectivity problems between the mainstem river and tributaries, created by hydropower operations, which could limit anadromous productivity, especially on KNF land? 3) How does the Project affect flow amounts, flow timing, and water quality, and thereby impact aquatic species habitat needs? 4) Are Project operations and facilities consistent with mandates of the WSRA and Klamath Recovery Act, which emphasize the anadromous fishery? 5) How could the Project affect Native American cultural sites, traditional uses, and subsistence needs?	See study 1.10 *Fish Passage Planning and Evaluation* for fish passage and 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study* for cultural resources.
473.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 46 Recommended Study 15	**Fish Passage Study** 1) What options are available, and what is the likeliness of success for each option, to restore anadromous passage back into the upper basin? 2) What is the current condition and the potential condition of historical anadromous habitat, located upstream of IGD? 3) What are the costs and benefits involved in restoring anadromous passage to the upper basin?	See study 1.10 *Fish Passage Planning and Evaluation*.

Num.	Agency	Page	Comment Summary	Response Summary
474.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 49 Recommended Study 16	**Mollusk Study** 1) Are the Project's contribution and/or the cumulative effects on the sediment regime of the river outside acceptable limits for aquatic indicator species such as mollusks? 2) How does the Project affect mollusk species habitat needs, such as water temperature and water quality? 3) How could the Project affect Native American cultural sites, traditional uses (mollusk regalia), and subsistence needs (mollusk food sources)? 4) How do water quality and flow conditions affect current mollusk distribution? 5) Are any exotic mollusk species located in the Klamath system? Do hydropower operations favor the introduction of exotic mollusk species?	See studies 1.11 *Macroinvertebrates Study*, 1.19 *Investigation of Klamath River Freshwater Bivalves in the J.C. Boyle Peaking Reach and Downstream of Iron Gate Dam*, 1.20 *Spring '2003 Macroinvertebrates Study* and 2.9 *Spring-Associated Mollusk Inventory*.
475.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 51 Recommended Study 17	**Aquatic Plant Study** 1) What is the potential for non-native species from the Project area to reach NFS lands and waters? 2) How does the Project affect water quality and dependent species, such as aquatic algae and macrophytes, especially in downstream reaches below IGD? 3) What are algal growth rates, especially for benthic species, in the River downstream of IGD, and what is the potential impact on water quality parameters, such as DO, BOD, and pH? 4) How does the Project affect the scenic quality of the river corridor, including water color, and consequently recreational uses?	Information to help answer these questions will be gathered through studies 2.7 *Noxious Weed Inventory*, 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area* and 1.3 *Water Quality Analysis and Modeling Process*, and 5.1 *Visual/Aesthetics Resource Study*.
476.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 53 Recommended Study 18	**Geomorphic and Sediment Budget Study** 1) What is the effect of Project features and operations, particularly ramping and sediment changes, on the physical integrity of the aquatic system, especially sediment supply or transport? 2) Do the Project operations and facilities contribute to downstream channel changes that result in damage to Traditional Native American cultural sites? 3) What are sedimentation rates in the reservoirs, how much sediment will likely accumulate during the life of the project, and how will accumulated sediment be transported through the river under post-dam	1. See Geomorphologic Study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*. 2. See Cultural Studies.6.1, 6.2, 6.3, 6.4 and 6.5. 3. & 4. See Geomorphologic Study.1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*.

Num.	Agency	Page	Comment Summary	Response Summary
			conditions? 4) Are the Project's contributions and/or the cumulative effect on the sediment regime of the river outside acceptable limits?	
477.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 55 Recommended Study 19	**Geologic Hazards of Project Facilities and Public Safety** 1) What are the seismic, volcanic, and landslide hazards in the Project area? 2) How could they affect Project facilities, public safety, and downstream resources?	FERC addresses geologic concerns as needed through Part 12 inspections. These inspections occur every 5 years.
478.	USFS - M. Boland and S.E. Woltering 3/19/01 Recommended Study	Pg. 56 Recommended Study 20	**Fisheries and Recreation Economic Analysis** How do the Project's effects on Klamath River fishery conditions influence downriver recreation, social, and economic values?	See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1*and 7.2 *Analysis of Project Effects on the Socioeconomic Environment – Phase 2*.
479.	USFS - M. Boland and S.E. Woltering 3/19/01	Appendix 2	See appendix 2 for Existing and Desired Condition Comparison and Resultant Studies table.	Comment noted.
480.	USFS - M. Boland and S.E. Woltering 3/19/01	Appendix 3	Special Status Species Lists.	Comment noted.
481.	Bureau of Reclamation (BOR)- D. Fritz 03/27/01	Pg. 1	Acknowledgement of extension to Reclamation until April 16, 2001.	Comment noted.
482.	Bureau of Reclamation (BOR)- C. Bowling 5/03/01	Pg. 1 Para 3	The descriptions of certain features and facilities, especially Upper Klamath Lake, Link River Dam, Keno Dam, and Iron Gate Dam need to be revised to more accurately describe the operational and/or management relationship that exists between PacifiCorp and Reclamation.	See Exhibit B of license application.
483.	BOR- C. Bowling 5/03/01	Pg. 2 Para 1	Iron Gate Dam is not a feature of the Klamath Irrigation Project. While it is true that Reclamation is required to ensure that certain releases from Iron Gate Dam are made by PacifiCorp for continued operation of the Klamath Irrigation Project, this dam is owned and operated by PacifiCorp.	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
484.	BOR - C. Bowling 5/03/01	Pg. 2 Para 2	Keno Dam is not a feature of the Klamath Irrigation Project. PacifiCorp owns and operates this dam pursuant to an agreement with Reclamation. However, the description of operation of this dam found on page 12-19 of the FSCD appears to portray the dam as if it were operated as a Federal facility. While certain aspects of the operation of the Klamath Irrigation Project may benefit Keno Dam, those benefits are incidental to its operation by PacifiCorp to meet its purposes.	Comment noted.
485.	BOR - C. Bowling 5/03/01	Pg. 2 Para 3	PacifiCorp operates Link River Dam pursuant to an agreement with Reclamation. It appears that the relicensing will also result in a need to renew that agreement in light of operational changes that may stem from the relicensing process.	Comment noted.
486.	BOR - C. Bowling 5/03/01	Pg. 2 Para 4	Reclamation, is currently engaged in formal consultation with the US Fish and Wildlife Service and the National Marine Fisheries Service regarding the effects of ongoing operations of the Klamath Irrigation Project on federally-listed threatened and endangered fishes found in the Upper Klamath basin and in the Klamath River downstream from Iron Gate Dam. Those consultations have recently yielded final biological opinions that establish requirements for Klamath River flows and Upper Klamath Lake elevations that may have serious consequences upon PacifiCorp's and Reclamation's ability to operate their respective projects.	Comment noted.
487.	TRIBES - Shasta Nation- A. Van Dyke	Pg. 1 Para 2	Shasta members are to be hired as monitors in the Shasta ancestral lands.	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
488.	Shasta Nation - A. Van Dyke	Pg. 1 Para 2	Documentation of sites should be of a non-intrusive nature. Protection of the remaining archeological and ceremonial sites is of critical importance.	See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
489.	Shasta Nation - A. Van Dyke	Pg. 1 Para 3	Return to tribal ownership of prehistoric village and ceremonial sites is priority.	Comment noted.
490.	Shasta Nation - A.	Pg. 1 Para	Fish passage system would be benefit to tribe, public	Comment noted. See study 1.10 *Fish Passage Planning and*

Num.	Agency	Page	Comment Summary	Response Summary
	Van Dyke	3	and commercial fishing industry.	*Evaluation.*
491.	Shasta Nation - A. Van Dyke	Pg. 1 Para 3	Cultural items recovered are to be returned to the appropriate tribe.	Comment noted. See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
492.	Shasta Nation - A. Van Dyke	Pg. 1 Para 2	Subsistence issues involving traditional hunting, fishing, etc. must be addressed and damaging activities reviewed for alternatives prior to initiation of any work.	See Exhibit E of license application.
493.	Shasta Nation - A. Van Dyke	Pg. 1 Para 4	Must be consulted for negotiations for mitigation for the impacts of the current project and the potential of longer-term impacts should the project area receive a license to continue operations. All studies must be reviewed prior to implementation.	Comment noted. A Cultural Work Group was formed as part of relicensing to allow study review by Tribes.
494.	TRIBES - Yurok Tribe - T. Fletcher 3/26/01	Pg. 1 Para 2	Document lacking in thoroughness and completeness. When mentioning applicable resource management plans, the FSCD fails to mention the Klamath River Basin Fisheries Task Force's Long Range Restoration Plan. Given that the Klamath Act was specifically passed by the US Congress with the intent of restoring the biological productivity of the Klamath River by the year 2006, the lack of inclusion of this document is astounding, and indicates the incomplete nature of the FSCD in general.	Comment noted.
495.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 1 Para 4	Many of the diagrams and figures are fuzzy, small, and unreadable. Page 4-34, the document proposes as a study to compile existing water quality data, which should have been done prior to submitting the FSCD.	Comment noted.
496.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 5 Points 1-4	Successful fish passage to and from areas above Iron Gate Dam and above Upper Klamath Lake must be restored in order to restore the diversity of anadromous fish runs. The specific impact that the Klamath Hydroproject has to water quality must be known, and appropriate measures must be taken to ameliorate these impacts. Hatchery operations intended as mitigation for loss of access to key habitat within and above the hydro project boundaries - must be evaluated for their success and/or failure, and their impacts to natural fish	Comment noted. See Aquatic and Water Quality studies.

Num.	Agency	Page	Comment Summary	Response Summary
			populations must be assessed. Hatchery operations must also be designed to minimize impacts to natural fish populations, as well as meet appropriate mitigation goal for the production of all species that has been lost from the hydroelectric project. The potential role of the hatchery for restoring fish to Upper Basin should also be assessed. The factors that lead to fish disease infection must be better-understood, and appropriate management actions taken to decrease the prevalence of lethal fish diseases wherever possible.	
497.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 6 Para 2	The Klamath Irrigation Project and the Klamath Hydropower Project each affect the anadromous fisheries resources and these affects must be addressed.	Comment noted.
498.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 6 Para 3	All modeling, including water quality and quantity must include a "no project" capability, which would allow PacifiCorp to separate out its impacts from other impacts.	Such modeling was conducted for water quality, hydrology, and fish passage. See studies 1.3 *Water Quality Analysis and Modeling Process*, 1.4 *Analysis of Project Effects on Hydrology* and 1.10 *Fish Passage Planning and Evaluation*.
499.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 6 Para 4	The assumption of the FCSD that conditions below Iron Gate Dam are either the result of other entities' management actions, or have been adequately addressed by existing studies is not agreed with.	Comment noted.
500.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 9 Recommended Study 1	Survey of potential anadromous fish habitat above Iron Gate Dam with emphasis on potential improvements through various habitat and water quality improvement processes. Additionally, estimate the quantity and quality of anadromous habitat now inundated by Hydroproject reservoirs such as Iron Gate, Copco 1 and 2, and J.C. Boyle. Finally make recommendations to overcome physical and/or habitat limitations and obstacles for anadromous fish reintroduction. *See letter for more.*	See study 1.10 *Fish Passage Planning and Evaluation*.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
501.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 10 Recommended Study 2	Feasibility study of full or partial hydropower facility structure removal. *See letter for more.*	Although PacifiCorp has modeled "without projects", the Company will not complete a feasibility study of dam removal.
502.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 11 Recommended Study 3	Feasibility study of implementing other fish passage options, such as ladders or trap-and-truck operations with special emphasis on expected performance of various options. *See letter for more.*	See study 1.10 *Fish Passage Planning and Evaluation*.
503.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 12 Recommended Study 4	Performance evaluation of past and current IGH operations that will include: 1) an assessment of how well the hatchery has met its current production goals with an assessment of current production goals and how effectively these goals mitigate for all species that have been extirpated from above Iron Gate Dam, 2) an assessment of the impacts of IGH operations upon natural populations and development of recommendations to minimize these impacts, 3) development of monitoring activities necessary to assess the status of hatchery and natural populations, and 4) an assessment of the potential for using IGH as a tool for restoring anadromous salmonids to the Upper Klamath Basin. *See letter for more.*	Much of the information needed to answer these questions will be acquired through the study 1.10 *Fish Passage Planning and Evaluation* which has a specific section on the operations of Iron Gate Hatchery.
504.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 15 Recommended Study 5	Water routing model with hourly timesteps, capable of simulating project operations as they occur, particularly during times of rapid flow change, such as in the spring of wet years. *See letter for more.*	An analysis of water routing under current operations on an hourly timestep will be provided in study 1.4 *Analysis of Project Effects on Hydrology*.
505.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 17 Recommended Study 6	Water Quality Temperature Nutrient, DO, pH Model, Hourly Timestep. Upper Klamath Lake to the Pacific Ocean. *See letter for more.*	See study 1.3 *Water Quality Analysis and Modeling Process.*
506.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 18 Recommended Study 7	Fisheries biology investigations below Iron Gate Dam. *See letter for more.*	See study 1.9 *Fisheries Assessment.*

Num.	Agency	Page	Comment Summary	Response Summary
507.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 19 Recommended Study 8	Analysis of current distribution of *Ceratomyxa shasta* and its intermediate host *Manawunkia speciosa* and analysis of effects of Hydroproject facilities and operations to distribution of *C. shasta* and intermediate host. *See letter for more.*	See study 1.21 *Investigation of Ceratomyxa shasta in the Klamath River: Keno Reach to the Confluence of the Shasta River.*
508.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 20 Recommended Study 9	Analysis of effects of project operations and facilities to fish disease occurrence, distribution, and severity (tied in with water quality). *See letter for more.*	See study 1.21 *Investigation of Ceratomyxa shasta in the Klamath River: Keno Reach to the Confluence of the Shasta River.*
509.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 21 Recommended Study 10	Quantitative analysis of spawning gravel below Iron Gate Dam, with an emphasis on whether spawning gravel augmentation is desired or feasible. *See letter for more.*	
510.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 23 Recommended Study 11	Conduct an ethnographic and historic survey to evaluate the eligibility of the Klamath River corridor below Iron Gate Dam from Weitchpec to the mouth for inclusion in the National Register as an ethnographic traditional Cultural Landscape using criteria specified in the National Register's Criteria for Evaluation. The Yurok Tribe will act as a consulting Tribe during the study. *See letter for more.*	See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
511.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 26 Additional Comments FSCD 7.1	Paragraph (P) 1 Sentence (S) 1 add 'Traditional Cultural Properties' after 'history'. S5 the laundry list of site types previously identified does not include TCP. Add a following sentence that says, "TCPs have not been previously identified or evaluated for eligibility to the National Register." Add a final sentence to paragraph that says, "nor has the river been evaluated for National Register eligibility as a Cultural Landscape consisting of multiple TCP types (Fishing Ceremonial, Gathering and Oral History). P 3 - Add sentence between S1 and S2 that says that "36CFR Part 800 requires federal agencies to consult early with Tribes in an effort to identify historic properties needing to be surveyed" The S 2 makes	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			sense in that those properties identified and found need to be evaluated for possible impacts.	
512.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 27 Additional Comments FSCD 7.1.1	P 4, S 1 - This needs to be critiqued as an insufficient record search. COHP only handles historic building records and sites determined eligible or nominated to the National Register. Most sites are formally recorded but never determined eligible or nominated. Such unevaluated site records are managed and archived with individual COHP Information Centers through the California Historic Resource Inventory System (CHRIS). A record search request needs to be conducted at the Northeast Information Center housed at Chico State University. The previous record search is also incomplete because the California Sacred Lands Inventory was not searched as well. This request must be placed with the California State Native American Heritage Commission in Sacramento. The Sacred Lands Inventory contains information on Native Californian TCPs. Finally, this section should also note that tribal governments also have tribal inventories (Karuk and Yurok do) that need to be checked. Last Sentence: Who are Section 10.6 participants? This page is left blank in my copy. If they cannot disclose or do not know who are 10.6 participants than they should at least provide a list of possible types of participants.	Comment noted.
513.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 27 Additional Comments FSCD 7.1.3	P 7 - "…and are primarily interested in Project related fisheries, ADD: "water quality, and cultural resource issues." Add a further sentence to the effect "The Yurok Tribe (and Karuk Tribe) considers water, fish, and culture to be aspects of one dynamic river that needs to be considered in its entirety as a Cultural Landscape."	Comment noted.
514.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 27 Additional Comments FSCD	Add 'Tribal governments and' before 'tribal organizations'. Add: specifically the Karuk and Yurok Tribes are requesting that the river in its entirety from the upper end of the currently proposed APE down to	See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*

Num.	Agency	Page	Comment Summary	Response Summary
		7.2.3	the mouth of the River including the Ocean discharge area (radius of 1 mile - 5 miles ??? from the mouth of the river out into the ocean) be evaluated as a Traditional Cultural landscape. Accommodating this request would constitute a re-evaluation of the APE boundaries. If the APE were to include any Yurok Tribal Lands then formal early consultation and final request for THPO concurrence with PacifiCorp/FERC Determinations of Eligibility is required per 36 CFR part 800.	
515.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 28 Additional Comments FSCD 7.3.2	A sentence needs to be added to this paragraph that identifies the river as a potential cultural landscape. The last sentence needs to include potential project effects such as lowered volume of water, poor water clarity and controlled water release (as opposed to natural flow) as adversely effecting the river as a cultural landscape.	Comment noted. See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
516.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 28 Additional Comments FSCD 7.4.1	Information Center, Sacred lands inventory and Tribal inventories need to be checked for cultural resource location information. Also who are Section 10.6 participants?	Comment noted.
517.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 28 Additional Comments FSCD 7.4.3	This section admits that context documents are limited and outdated. However, the concept of the river as a Cultural landscape is supported by looking at cultural sections of the Trinity EIS and the Klamath EIS draft. In addition, other Northwest Coast salmon bearing rivers with alive and thriving Native American traditions have been nominated to the National Register as Traditional cultural landscapes. PacifiCorp should request similar examples from the National Register Office in Washington D.C. These examples will help them understand the cultural context of parallel river systems and applicability to the project.	Comment noted. See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
518.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 28 Additional	Bullet 1 incorrectly assumes that all the pertinent records/documents have been collected. More	Comment noted. See study 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis* and study 6.3

Num.	Agency	Page	Comment Summary	Response Summary
		Comments FSCD 7.5.1.3	inventories need to be consulted/checked for the currently proposed APE and should the APE be extended down the Mouth then new records checks will need to be initiated.	*Traditional Cultural Properties and Sensitive Cultural Resources Study*.
519.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 28 Additional Comments FSCD 7.5.3.1	The Karuk and Yurok request to conduct a Traditional Cultural landscape study needs to be inserted here. This can be done within the proposed study or in addition to the Traditional Cultural Properties Study.	See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
520.	Yurok Tribe - T. Fletcher 3/26/01	Pg. 28 Additional Comments FSCD 7.5.4.1	The ACHP 1986 citation is outdated. The new date should be 2001.	Comment noted.
521.	TRIBES - Hoopa Tribe - D. Sherman 3/23/01	Pg. 1 Para 2 Cover Letter Comments	Concern about the decision not to include the Link River dam as a full project facility.	Comment noted.
522.	Hoopa Tribe - D. Sherman 3/23/01	Pg. 1 Para 3 Cover Letter Comments	Concern about lack of detailed study plans. Request a supplemental document providing additional details as to study methodologies.	See final (Plenary-approved) study plans for more detail.
523.	Hoopa Tribe - D. Sherman 3/23/01	Pg. 2 Para 2 Cover Letter Comments	Studies addressing water quality should be a focus.	See studies 1.1, 1.2, 1.3, 1.6, 1.11, 1.13, 1.14, 1.19, and 1.20.
524.	Hoopa Tribe - D. Sherman 3/23/01	Pg. 1 Para 3 Cover Letter Comments	Concern about fish passage and the impact of hatchery operations at Iron Gate.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*
525.	Hoopa Tribe - D. Sherman 3/23/01	Attach. A Pg. 1 Recom-mended Study 1	**Water Quality** - How have Project facilities, especially reservoirs and their associated operations, altered water temperature relative to an unimpaired flow regime? 2) What are the Project impacts on thermal refugia in the Klamath River mainstem below Iron Gate dam? 3) How far downstream would these	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			effects persist under various hydrologic conditions?	
526.	Hoopa Tribe - D. Sherman 3/23/01	Attach. A Pg. 2 Recommended Study 2	**Fish Passage and Hatchery Practices** - What is the quantity of lost chinook, steelhead, and coho habitat between Iron Gate dam and Copco 2, and above Copco 2 through the historical range of anadromy? 2) What would be the impact on tribal fish species of concern of providing full up-and-downstream passage at all Project facilities for these species? 3) What would be the impact on tribal fish species of concern of decommissioning Project dams, singly, and in a stepwise progression? *See letter for more.*	See study 1.10 *Fish Passage Planning and Evaluation.*
527.	Hoopa Tribe - D. Sherman 3/23/01	Attach. A Pg. 4 Recommended Study 3	**Spawning Gravel Needs Assessment** - What level of flows are necessary to move spawning gravel? 2) What duration of flows at these levels is needed to move the quantity of gravel in the amounts supplemented and over the distances desired? 3) What quantity of spawning gravel is needed for supplementation in the different water year types? *See letter for more.*	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
528.	TRIBES - Klamath Tribes - C. Ullman 03/27/01	Pg. 1	Request for extension (to April 16, 2001) to submit comments on the FSCD.	Comment noted.
529.	TRIBES - Klamath Tribes - A. Foreman 4/16/01	Pg. 2 Para 4	Figures 2-3 through 2-6 depict the FERC Project Boundary to generally extend from just below Iron Gate Dam upstream to the Link River Dam. It appears that only the physical components of the Klamath Hydroelectric Project are included within the Project boundary, and that large portions of the Klamath River between (and sometimes alongside) physical components of the Project are excluded. All components of the aquatic ecosystem affected by the Project operations must be considered under the re-licensing process.	PacifiCorp's proposed FERC project boundary is presented in Exhibit G of the license application.
530.	Klamath Tribes - A. Foreman 4/16/01	Pg. 2 Para 5	Pg. 2-1, The Link River Dam is owned by USBR and so is not considered as part of the licensed project, and thus by inference Upper Klamath Lake is not to be considered as part of the licensed project. We do not	See Exhibit B of the license application.

Num.	Agency	Page	Comment Summary	Response Summary
			understand why this must be so, since the dam was built to serve both USBR and PacifiCorp.	
531.	Klamath Tribes - A. Foreman 4/16/01	Pg. 2 Para 5	Operation of the Link River Dam and the associated hydropower diversions has been show to have serious impacts on the endangered suckers, the full effects of which should be assessed. Therefore the project boundary should encompass all water subject to water level control by the Link River Dam.	Hydroelectric project impacts such as fish entrainment and instream flow in the Link River are being assessed in studies 1.10 and 1.12. Regulation of water by USBR is outside PacifiCorp's control.
532.	Klamath Tribes - A. Foreman 4/16/01	Pg. 3 Para 2	The Project Boundary should be continuous between its lowermost and uppermost extents. Sections of the Klamath River between projects should not be omitted.	Comment noted.
533.	Klamath Tribes - A. Foreman 4/16/01	Pg. 3 Para 3	Pg. 5-24, ODFW is portrayed as opposing the re-establishment of anadromous runs in the Upper Basin. ODFW fully supports study of the habitat restoration.	Comment noted.
534.	Klamath Tribes - A. Foreman 4/16/01	Pg. 3 Para 4	Pg. 10-3, PacifiCorp states that they will use current conditions as an environmental starting point, or baseline, against which effects, alternatives, etc. will be compared. The best possible understanding of pre-project conditions must be established.	PacifiCorp maintains that FERC guidelines and case law support the approach of using current conditions as an environmental baseline.
535.	Klamath Tribes - A. Foreman 4/16/01	Pg. 3 Para 5	FSCD does not provide a detailed description of the present understanding of Project effects, nor does it provide detailed descriptions of the proposed studies. We are concerned that the delay in compiling existing data, which should have been done prior to the FSCD, could slow down Stage 2 studies, and thus diminish their utility.	Comment noted.
536.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 1.1.	See study 1.4 *Analysis of Project Effects on Hydrology* for a detailed description of hydrology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on hydrology will be included in the Water Use and Quality technical report and draft and final applications. Regarding the study area, the hydrologic analyses will be most focused in the Project area from Link River dam to just below the Iron Gate dam and powerhouse. It is in this area that PacifiCorp operations have the most direct and varied potential effects on flows. However,

Num.	Agency	Page	Comment Summary	Response Summary
				some tasks described in this study plan will incorporate a broader basin-wide area to enhance perspective and context for the Project setting and potential Project hydrologic effects. For example, the assessment of effects on the long-term (monthly, seasonal, and annual) hydrologic regime (section 1.4.3.2) will include an analysis of USGS data from gages in the lower basin to quantify the relative contribution of flow from Iron Gate dam to lower basin flows in different water year types. PacifiCorp will consider adjustments in the study area as needed based on the extent of identified Project impacts as results of the analyses are completed. PacifiCorp plans to compile and analyze hydrologic data in similar manner as described in items 2 and 3 of this comment. Much of this information will be needed to address FERC requirements (18 CFR 4.51 and 16.8) for information on water uses in the Project area and coordination of Project operations with other water resources projects. PacifiCorp does not intend to conduct climatological analysis to categorize water years as suggested in item 1 of this comment, but rather will rely on such categorization already done by USBR in development of the KPOPSIM model. PacifiCorp plans to use the KPOPSIM to "model" and evaluate annual and seasonal hydrographs by water year type, such as suggested in item 4 of this comment. PacifiCorp does not agree it's necessary to "model" weekly and daily hydrographs as suggested in item 4 of this comment. PacifiCorp maintains a database containing hourly operations data at all the project facilities. It includes such information as reservoir elevation, flow through turbines, spill, etc. This data will be used to describe and depict the hydrologic effects of the project at an hourly time step, such as the effect of project operations on reservoir water levels and instream flows. This analysis will be conducted for each project facility in a way that depicts reservoir elevations relative to turbine flows. It will also show minimum instream flow in project reaches below each facility. The analysis will be done for each facility for each water year types.

Num.	Agency	Page	Comment Summary	Response Summary
				PacifiCorp will create products as needed for related studies, perhaps including products similar to those suggested in item 4 of this comment. The specific type and details associated with these products will be developed as studies and analyses proceed.
537.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 2.1.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* for a detailed description of sediment transport and geomorphology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on sediment transport and geomorphology will be included in the Water Use and Quality technical report and draft and final applications. PacifiCorp's mapping will be based on channel geomorphic type according to the Rosgen (1994) and Montgomery and Buffington (1997) methods. The map will include some but not all of the features suggested in this comment. Regarding the study area, the geomorphology analyses will be most focused in the Project area from Link River dam to just below the Iron Gate dam and powerhouse. It is in this area that PacifiCorp operations have the most direct and varied potential effects on flows and sediment loads. PacifiCorp will also conduct geomorphic characterization of Klamath River downstream of Iron Gate dam to the Shasta River (RM 176.7). As an additional source of information, PacifiCorp will consider detailed geomorphological descriptions provided by Ayers and Associates (1999) for the Klamath River downstream of Iron Gate dam. PacifiCorp does not plan to conduct specific geomorphological studies of Fall Creek and Spring Creek/Jenny Creek downstream from project diversions. These streams are mostly spring fed, there is no storage reservoir associated with the Fall Creek development and its powerhouse is operated as a run-of-river facility. PacifiCorp instead plans to provide appropriate channel maintenance flows downstream from project diversions as a part of recommended instream flows. Such flows will address any geomorphology concerns or management objectives.
538.	Klamath Tribes - A.	Pg. 4 Table	See BLM Study 3.1.	See study 1.5 *Analysis of Project Effects on Sediment Transport and*

Num.	Agency	Page	Comment Summary	Response Summary
	Foreman 4/16/01	1 Recommended Study		*River Geomorphology* for a detailed description of sediment transport and geomorphology studies to be conducted by PacifiCorp. A detailed analysis of Project effects on sediment transport and geomorphology will be included in the Water Use and Quality technical report and draft and final applications. Regarding item 1 of this comment, PacifiCorp plans to map the bathymetry of Keno, J.C. Boyle, Copco, and Iron Gate reservoirs in late summer or fall 2001. Sediment accumulation in the reservoirs will be calculated by comparing reservoir volume differences between the new bathymetry and previous reservoir volumes as derived from available information (such as, City of Klamath Falls 1986, Johnson et al. 1985) and calculated from original topographic maps as available. Regarding items 2-6 of this comment, PacifiCorp plans to complete a geomorphic characterization of reaches in the Project area and downstream of Iron Gate dam to the Shasta River as described in study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*. River reaches will be delineated and categorized according to channel geomorphic type using the methods of Rosgen (1994) and Montgomery and Buffington (1997). The channel geomorphic typing will provide descriptive information on the geomorphic characteristics of the river reaches, including channel geomorphic stability, response to changes in flow and sediment supply, sediment transport capacity, and dominant channel forming processes. Initial reach segmentation and typing will be done using recent aerial photos and topographic maps, including map-based estimates of channel gradient and confinement. Comparisons of recent aerial photos with historic aerial photo sequences, as available, will be made to gather evidence on channel geomorphic changes and disturbances that have occurred over recent history. Field visits will be made to ground-truth the channel geomorphic reach typing and further assess current channel conditions. Additional data and observation will be obtained in a subset of representative reaches to assess key characteristics of the channel that are useful for interpreting channel condition and response potential. These characteristics include channel bed morphology, channel dimensions,

Num.	Agency	Page	Comment Summary	Response Summary
				fine and coarse sediment composition and distribution, bank and riparian condition, and flood plain or terrace attributes. Key observations relative to the bed, active channel, and flood plain will be compiled into a summary of characteristics relative to channel condition. Using the information derived above, reach segmentation and typing will be synthesized into distinct geomorphic units and potential source, transport, or response areas or zones. The basic assumption behind geomorphic units is that segments within the unit will have similar channel conditions and respond similarly to channel-forming processes. Potential source, transport, or response areas or zones will be used to characterize channel response to flow and sediment inputs. The distribution of source, transport, or response areas or zones will help to determine the potential for, and location of impacts on the channel, as well as the potential for recovery and restoration opportunities. Estimates of channel-forming or geomorphically effective flows will be made based on field observation and calculations of key indicators, such as channel boundary shear stress, incipient channel bed particle size mobility, and estimated bank-full discharge. Existing hydrologic information for the Project area (as developed in the study of *Project Effects on Hydrology)* will be used to estimate the frequency-of-occurrence of these channel-forming or geomorphically effective flows, and how such flows may be affected by Project operations. Regarding item 6 of this comment, PacifiCorp plans to integrate hydrology and geomorphology information as described above into terrestrial resources studies (see study 2.2 *Wetland and Riparian Plant Community Characterization*).

Num.	Agency	Page	Comment Summary	Response Summary
539.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 4.1; ODEQ temperature and multi-parameter water quality study.	See studies 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 for detailed descriptions of water quality studies to be conducted by PacifiCorp. Analysis of Project impacts on water quality will be included in the Water Use and Quality technical report and draft and final applications. Modeling provides some, but not all, of "the tools in the box" for analysis. Further scoping with the key agencies will be conducted to resolve what and where analysis and modeling tools are needed to assess Project water quality effects and management. For example, analysis of alternative operation schemes and potential structural modifications might be best done using actual data, simple calculations, or pilot testing, rather than potentially complex numerical models. Further scoping also is needed to ensure appropriate analytical coordination with larger-scale analyses and modeling that PacifiCorp assumes will be conducted by the agencies as a key part of TMDL water quality management planning in the basin. PacifiCorp does not plan to collect and analyze bioassays of toxic metals. Instead, PacifiCorp plans to collaborate with ODEQ and the SWRCB to collect and analyze samples of fish from reservoirs to look for evidence of potential contaminant uptake.
540.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 5.1.	PacifiCorp has elected to not complete this specific study request. Some information on suckers species will be gathered through the aquatic studies. See studies 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam*, 1.9 *Fisheries Assessment* and 1.12 *Instream Flow Analysis.*
541.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 6.1.	See study 1.10 *Fish Passage Planning and Evaluation.*
542.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 7.1.	See study 1.17 *Investigation of Trout and Anadromous Fish Genetics in the Klamath Hydro Project Area.*

Num.	Agency	Page	Comment Summary	Response Summary
543.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 8.1.	PacifiCorp has elected to not complete a specific Keno reservoir sediment sampling study. Please see study 1.14 *Determination of Possible Contamination of Sediment in Lake Ewauna and Keno Reservoir* which was collaboratively designed and is related to this issue.
544.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 9.1	Some but not all of the work requested will be completed through aquatic and water quality studies. Please see studies 1.1 *Compilation and Assessment of Existing Water Quality Data*, 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area*, 1.3 *Water Quality Analysis and Modeling Process* and 1.9 *Fisheries Assessment.*.
545.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 10.1	PacifiCorp is currently working with the Fish Passage Working Group to design a study to look at juvenile anadromous fish survival through Project reservoirs. See study 1.18 *Downstream Reservoir Passage/Survival.*
546.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 11.1	See study 1.10 *Fish Passage Planning and Evaluation.*
547.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 12.1	See study 1.10 *Fish Passage Planning and Evaluation.*
548.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 13.1.	See study 2.7 *Noxious Weed Inventory*.
549.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 14.1.	Riparian vegetation will be mapped in the Vegetation cover type/wildlife habitat mapping study and further assessed in the Wetland and riparian plant community characterization study. Historical riparian areas that are under the reservoir will not be mapped because the current baseline for relicensing is what exists today. PacifiCorp has purchased a set of the recommended photos and will

Num.	Agency	Page	Comment Summary	Response Summary
				use them for mapping the canyon reach. See study 2.1 *Plant Community/Wildlife Habitat Inventory and Mapping* for vegetation cover type/wildlife habitat mapping. PacifiCorp will check on the availability of riparian photos from Iron Gate Dam to the mouth of Shasta River. Vegetation types for riparian will include similar categories and will be further defined when possible. See study 2.1 *Plant Community/Wildlife Habitat Inventory and Mapping* for vegetation cover type/wildlife habitat mapping. See study 2.2 *Wetland and Riparian Plant Community Characterization*. See study 2.2 *Wetland and Riparian Plant Community Characterization*. Not included. Historical riparian areas that are under the reservoir will not be mapped because the current baseline for relicensing is what exists today. This information will be derived from other studies and assessed in the draft license application. Not included in the terrestrial studies (see Geomorphology study).
550.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 15.1.	See studies 2.2 *Wetland and Riparian Plant Community Characterization* and 2.6 *Wildlife Habitat Association Assessment and Synthesis of Existing Botanical and Wildlife Information*.
551.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 18.1.	PacifiCorp plans to conduct a detailed macroinvertebrate study at many locations throughout the Project area and downstream of Iron Gate dam to the Shasta River. The study will be based on the *California Stream Bioassessment Procedure* for river and stream reaches, and the *California Lentic Bioassessment Procedure* for reservoir reaches. Per these procedures, sampling will be done once, not throughout the year and throughout a 24 hour-day period as

Num.	Agency	Page	Comment Summary	Response Summary
				recommended in this comment. Also per these procedures, river and stream samples will be from riffles, not all river conditions as recommended in this comment.
552.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 19.1.	See study 2.9 *Spring-Associated Mollusk Inventory*. While conducting the botanical and wildlife studies (TES species inventories, cover type mapping, and wetland and riparian assessments), PacifiCorp will map all spring habitat encountered within 0.25 miles of Project facilities. For potentially affected springs, PacifiCorp will coordinate with the BLM and USFS to determine the need for additional surveys on federal lands within the study area.
553.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 23.1.	PacifiCorp will not complete Dam Decommissioning study. See Systems Landscape Options Matrix for related information.
554.	Klamath Tribes - A. Foreman 4/16/01	Pg. 4 Table 1 Recommended Study	See BLM Study 24.1.	In developing the draft and final license applications, PacifiCorp will work towards an appropriate balance of natural, economic, and social resources.
555.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See ODFW Study 5.	This information will be clearly described in the draft and final application. Ramp rate effects and potential modifications to ramp rates will be assessed as described in study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, and Copco No. 2 Dam*.
556.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See ODFW Study 7.	Habitat will be assessed. See study 1.10 *Fish Passage Planning and Evaluation*.
557.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See ODFW Study 8.	See studies 1.9 *Fisheries Assessment* and 1.10 *Fish Passage Planning and Evaluation*.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
558.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See USFS Study 8.	See studies 1.3 *Water Quality Analysis and Modeling Process*, 2.2 *Wetland and Riparian Plant Community Characterization*, 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study* and 3.1 *Recreation Flow Analysis*.
559.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See USFS Study 12.	See studies 1.10 *Fish Passage Planning and Evaluation* (Hatchery Section) and 1.3 *Water Quality Analysis and Modeling Process.*
560.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See Dam Removal Studies of Karuk Tribe.	PacifiCorp does not believe that dam decommissioning or removal is an appropriate balancing of the resource. The company is not obligated to consider dam decommissioning/removal in the license application to FERC.
561.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See Economic Studies of Karuk Tribe.	PacifiCorp is completing socioeconomic studies (7.1 and 7.2) that will gather the necessary information required in the application to FERC. The company also supports the idea of a cooperative larger Klamath Basin study.
562.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Table 1 Recommended Study	See Hatchery Evaluation of Karuk Tribe.	See study 1.10 *Fish Passage Planning and Evaluation*. The fish passage modeling effort will help describe fish production without the Project in place. The study will also consider hatchery improvements.
563.	Klamath Tribes - A. Foreman 4/16/01	Pg. 5 Recommended Study 1.1	Quantify fish entrainment at Eastside and Westside powerhouse diversions relative to water quality dynamics in Upper Klamath Lake, fish ontogeny, and effectiveness of screens.	See previous Eastside and Westside Entrainment study (Guttermuth 2000).
564.	Klamath Tribes - A. Foreman 4/16/01	Pg. 6 Recommended Study 2.1	Cultural Resource Assessment - A large portion of the Klamath River and the Link River lie within the ceded land boundaries of the Klamath Tribes. Both rivers continue to be an important resource for the Tribes. Therefore, due to thousands of years of habitation and continued use by our people, many cultural resources are present throughout the Project Reach areas.	Comment noted.
565.	TRIBES - J. Mitchell, Klamath Tribe member 3/27/01	Pg. 1 Para 2-5	Fish passage on the Klamath River has been 'blocked' and interferes with the property rights and interests of the Tribe.	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
566.	J. Mitchell, Klamath Tribe member 3/27/01	Pg. 2 Para 3	FSDC does not propose investigations to assess the feasibility of providing access for salmon to the historic range in the Klamath River and its upper reaches.	See study 1.10 *Fish Passage Planning and Evaluation.*
567.	J. Mitchell, Klamath Tribe member 3/27/01	Pg. 2 Para 3	The failure to specifically identify information needs and associated studies is a serious deficiency. Please identify and conduct studies to assess a broad range of alternatives for the upstream and downstream passage of salmonids, up to and including decommissioning of dams within the Project.	See study 1.10 *Fish Passage Planning and Evaluation.*
568.	J. Mitchell, Klamath Tribe member 3/27/01	Pg. 2 Para 4	Project facilities and operations aggravate water quality. Should conduct studies with the goal of developing a strategy for operating the Project that does not degrade Klamath River	See various water quality studies. Study information will help identify Project impacts on water quality and measures to minimize those impacts.
569.	J. Mitchell, Klamath Tribe member 3/27/01	Pg. 2 Para 5	FSCD does not propose studies that will determine adequate minimum flows below Link River Dam.	See study 1.12 *Instream Flow Analysis.*
570.	J. Mitchell, Klamath Tribe member 3/27/01	Pg. 2 Para 6	Is PacifiCorp meeting its obligation to mitigate and/or compensate for the loss of fishery resources resulting from Project operations?	PacifiCorp will provide hatchery return information as part of Study 1.10 *Fish Passage Planning and Evaluation*. This information can be used to compare against FERC mitigation requirements.
571.	J. Mitchell, Klamath Tribe member 3/27/01	Pg. 3 Para 1	FSCD does not propose studies that will adequately determine the impacts of the Project on Tribal Cultural Resources and Tribal Traditional Uses both current and historic.	See studies 6.2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis* and 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
572.	TRIBES - Karuk Tribe - L. Hillman 4/14/01	Pg. 3-6 Recommended Study	**Dam Removal Study** - Information needs on various dam removals or modifications to allow FERC and policy makers to consider a full range of alternative operational scenarios. The studies need to reveal the impacts or benefits to upriver and downriver fisheries and other aquatic and natural resources under the alternative conditions of: 1. Status quo operations (all facilities and operations remaining in place). 2. Restructuring all facilities to allow for upstream and downstream fish passage. 3. Project with all hydropower production abandoned, with existing facilities left in place but restructured and operated to allow flows required	PacifiCorp does not believe that dam decommissioning or removal is an appropriate balancing of the resource. The company is not obligated to consider dam decommissioning/removal in the license application to FERC.

Num.	Agency	Page	Comment Summary	Response Summary
			for fish life states and fish passage upstream and down. 4. Project with Iron Gate removed, and Copco 1 and 2 operated as steady flow hydropower facilities. 5. Project with Iron Gate, Copco1 and 2 removed with fish passage improvements at J.C. Boyle, Keno and Link dams. 6. Project with Iron Gate, Copco 1 and 2, J.C. Boyle, and Keno removed.	
573.	Karuk Tribe - L. Hillman 4/14/01	Pg. 7-10 Recommended Study	**Economic Studies** - 1. An analysis of the short and long term economic effects on the local municipalities under the alternatives of reduced power or no power from PacifiCorp's Klamath River hydroelectric production. 2. An analysis of the short and long term economic effects if low cost power and energy supplies were not available for agricultural irrigation purposes as per Section 5 of the 1956 PacifiCorp/Department of the Interior contract. 3. An analysis of the short and long term economic impacts on irrigators if the Keno reservoir was allowed to fluctuate below current pumping levels. Or, if Keno dam were removed. 4. An analysis of the direct and indirect long term economic benefits from a restored salmonid fishery to the coastal, riverine, and tribal communities. 5. A feasibility study on supplementing or replacing hydropower output with wind generated power. PacifiCorp is the primary owner of the 41.4-megawatt (MW) Wyoming Wind Energy Project, a 69-Turbine Wind Plant at Foote Creek Rim.	PacifiCorp is completing socioeconomic studies (7.1 and 7.2) that will gather the necessary information required in the application to FERC. The company also supports the idea of a cooperative larger Klamath Basin study.

Num.	Agency	Page	Comment Summary	Response Summary
574.	Karuk Tribe - L. Hillman 4/14/01	Pg. 10-12 Recommended Study	**Water Quality Study** - PacifiCorp should have a "no project" capability built into the water quality model in order to separate out its impacts from other impacts beyond its control. Reconsideration on the scope of required water quality and quantity studies and determining the contribution of PacifiCorp operations to those parameters.	See study 1.3 *Water Quality Analysis and Modeling Process.*
575.	Karuk Tribe - L. Hillman 4/14/01	Pg. 12-14 Recommended Study	**Hydrologic Study** - Develop a hydrologic budget and define the area of Project influence. The FSCD in essence limited the hydro-project's geographic scope and area of influence to the area from below Link River Dam to the Iron Gate Reservoir.	See study 1.4 *Analysis of Project Effects on Hydrology*.
576.	Karuk Tribe - L. Hillman 4/14/01	Pg. 15-17 Recommended Study	**Hatchery Evaluation** - Iron Gate Hatchery was constructed as mitigation for loss of salmonid spawning habitat between Iron Gate Dam and Copco 2. An assessment of the success or failure of IGH is needed so that future operations can be modified, if necessary, to adequately mitigate for the loss of fish production, including losses from the Copco 2 to Link River Dam reach.	See study 1.10 *Fish Passage Planning and Evaluation*. The fish passage modeling effort will help describe fish production without the Project in place. The study will also consider hatchery improvements.
577.	Karuk Tribe - L. Hillman 4/14/01	Pg. 17-21 Recommended Study	**Cultural Landscape** - Conduct an ethnographic and historic survey to evaluate the eligibility of the Klamath River corridor below Iron Gate Dam from Seiad to Weitchpec for inclusion in the National Register as an ethnographic Traditional Cultural Landscape using criteria specified in the National Register's Criteria for Evaluation (36 CFR, 60.4).	See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
578.	Karuk Tribe - L. Hillman 4/14/01	Pg. 21-24	**Regulatory Issues** - Major concern is the ambiguities in the Commission's regulatory responsibility and powers to require that PacifiCorp meet the minimum flow requirements in the Klamath River below Iron Gate Dam as stipulated under the current license or any future license. *See letter for more.*	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
579.	Karuk Tribe - R. Pierce	Pg. 1 Last Bullet	*All points were covered in L. Hillman's letter except the following*: Fish passage issues and the Tribe's participation on the proposed Fish Passage Team.	Comment noted.
580.	Bureau of Indian Affairs (BIA) - S. Bergstrom 3/26/01	Pg. 2 Para 2	PacifiCorp needs to provide greater detail regarding affected resources and proposed studies than that currently in the FSCD.	Studies were revised to provide greater detail.
581.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 3	The maps and other schematics for Project facilities are neither detailed nor legible.	Comment noted.
582.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 3	The FSCD also proposes to compile various existing studies instead of describing the existing scientific information base and analyzing the need for further study as the data gaps relate to the Project.	Comment noted.
583.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 3	It is difficult to discern existing and proposed environmental protection, mitigation, and enhancement plans. This makes it difficult to provide useful comments and propose information and study requests for the FSCD.	Comment noted.
584.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 4	The description of the Project area and the area influenced by the Project appear too narrow. Referring to Link River Dam and well below Iron Gate Dam.	Comment noted.
585.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 5	FSCD needs to provide greater detail regarding the Project's impacts on and the existing and proposed protection, mitigation, and enhancement of the fishery and associated aquatic resources of the Basin.	PacifiCorp anticipates that the license application will describe Project impacts for a variety of resources.
586.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 5	The viability of current fish ladders and all available options to ensure successful fish passage both upstream and downstream throughout the Klamath Basin must be assessed.	See study 1.10 *Fish Passage Planning and Evaluation.*
587.	BIA - S. Bergstrom 3/26/01	Pg. 2 Para 5	Existing and potentially available habitat both within the Project area or affected by the Project needs to be evaluated.	See study 1.10 *Fish Passage Planning and Evaluation.*
588.	BIA - S. Bergstrom 3/26/01	Pg. 3 Para 1	Entrainment issues and the need for additional or replacement screening devices at Project facilities will be critical.	See study 1.10 *Fish Passage Planning and Evaluation.*

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First Stage Consultation Document Comments
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Num.	Agency	Page	Comment Summary	Response Summary
589.	BIA - S. Bergstrom 3/26/01	Pg. 3 Para 1	More detailed consideration of hatchery operations and other fishery issues will also be essential to inform this process.	See study 1.10 *Fish Passage Planning and Evaluation* and other aquatic studies.
590.	BIA - S. Bergstrom 3/26/01	Pg. 3 Para 2	Water quantity and quality issues will likewise need greater description and analysis.	See water quality related studies.
591.	BIA - S. Bergstrom 3/26/01	Pg. 3 Para 2	Ramping rate studies will be necessary to determine physical and biological impacts to fish species below Project facilities.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
592.	BIA - S. Bergstrom 3/26/01	Pg. 3 Para 2	Minimum instream flows throughout the Basin will be essential and, in view of PacifiCorp's existing license, which incorporates minimum flows, this issue should be fully considered throughout this process.	See study 1.12 *Instream Flow Analysis*.
593.	BIA - Stanley Speaks 4/16/01	Pg. 1 Para 1	Concur with S. Bergstrom's interim letter.	Comment noted.
594.	BIA - Stanley Speaks 4/16/01	Pg. 1 Para 2	The FSCD lacks necessary and sufficient detail, particularly with regard to proposed environmental protection, mitigation, and enhancement plans. Should review the FSCD for consistency with the applicable regulations at 18 CFR 16.8.	Comment noted.
595.	BIA - Stanley Speaks 4/16/01	Pg. 2 Para 1	The FSCD appears to shift the focus of PacifiCorp's responsibility to the resources entities in the name of consultation. We concur with the study and informational requests provided by the other federal, state, and tribal interests.	Comment noted.
596.	BIA - Stanley Speaks 4/16/01	Pg. 2 Para 3-4	Concern for the Tribes' fishing rights, fishery resources and the aquatic ecology.	Comment noted.
597.	BIA - Stanley Speaks 4/16/01	Pg. 3 Para 3	PacifiCorp must evaluate the potential to decommission the Project as a whole or in part.	PacifiCorp disagrees. Although PacifiCorp has modeled "without projects", the Company will not complete a feasibility study of dam removal.
598.	California Department of Fish & Game (CDFG) - D. Koch 3/27/01	Pg. 2 Para 2	While the focus of the Department's comments will be on the Project's impacts within California, the upstream and downstream context of the Project is integral to any meaningful environmental analysis. Some of the informational needs will require a	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			watershed approach, overriding politically and legally defined boundaries.	
599.	CDFG - D. Koch 3/27/01	Pg. 2 Para 3	In general FSCD is incomplete and lacking the necessary level of detail to understand the complex issues involved in relicensing.	Comment noted.
600.	CDFG - D. Koch 3/27/01	Pg. 2 Para 3	Request that the actual data cited to support PacifiCorp's conclusions regarding the affected resources and potential environmental impacts of the Project be provided.	Information from PacifiCorp conducted studies will be presented in Final Technical Reports.
601.	CDFG - D. Koch 3/27/01	Pg. 3 Para 2 Specific Study Comments	The three water quality studies proposed by PacifiCorp are inadequate to develop a comprehensive understanding of how the Project impacts water quality and the Klamath River watershed.	Comment noted. Additional water quality studies are being conducted.
602.	CDFG - D. Koch 3/27/01	Pg. 3-4 Para 3 Specific Study Comments	Recommend that the proposed study to evaluate the impact of Project maintenance activities on water quality be expanded to evaluate <u>all</u> Project impacts on water quality. *See letter for more.*	See study 1.6 *Monitoring and Analysis of Water Quality During Project Maintenance Operations,* and other water quality studies.
603.	CDFG - D. Koch 3/27/01	Pg. 5 Para 2 Specific Study Comments	FSCD has oversimplified the relationship between the BOR and PacifiCorp.	Comment noted. See Exhibit B of the license application.
604.	CDFG - D. Koch 3/27/01	Pg. 5 Para 3 Specific Study Comments	PacifiCorp needs to fully describe the current hydrology and synthesize unimpaired flows through the Project from Link River Dam to below Iron gate Dam for at least the last 30 years. At a minimum PacifiCorp should present the amount of water released daily: 1) through the A Canal, 2) to the Eastside and Westside powerhouses and 3) to the river at Link River Dam. *See letter for more.*	See study 1.4 *Analysis of Project Effects on Hydrology.*
605.	CDFG - D. Koch 3/27/01	Pg. 7 Para 3 and Pg. 8 Para 2 Specific Study Comments	Recommend that the river from Iron Gate Dam down to at least Klamath gage also be evaluated for instream flow needs as it is clearly subject to impacts from Project operations and facilities. In addition to establishing flow needs, PacifiCorp needs to compare the impacts of current flow regimes with possible	See study 1.12 *Instream Flow Analysis.*

Num.	Agency	Page	Comment Summary	Response Summary
			future modifications that would more closely mimic the natural hydrograph (i.e., peaking versus run-of-the-river below J.C. Boyle).	
606.	CDFG - D. Koch 3/27/01	Pg. 8 Para 3 Specific Study Comments	Request an investigation of the fluvial geomorphology of the Project area. An understanding of general geomorphic processes which are essential to assessing aquatic habitat health and designing effective stream restoration Projects is also critical.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
607.	CDFG - D. Koch 3/27/01	Pg. 8 Para 4 Specific Study Comments	A comprehensive understanding of the existing aquatic community and habitat throughout the range of impact of the project in the main stem of the Klamath river and its tributaries is necessary to establish a baseline. This baseline will allow the Department and other resource agencies to evaluate whether or not trustee objectives are being met.	See related Aquatic studies.
608.	CDFG - D. Koch 3/27/01	Pg. 9 Para 1 Specific Study Comments	The FSCD presents some fish population data, primarily for the Project reservoirs, but the data are not comprehensive either geographically or taxonomically. In addition the FSCD's temporal scope is limited to investigation of existing conditions with no consideration of aquatic community trends documented during the life of the Project. Pre-project information is very valuable in identifying Project effects and extrapolating future community composition.	Comment noted.
609.	CDFG - D. Koch 3/27/01	Pg. 9 Para 2 Specific Study Comments	At a minimum, fish, mollusk, benthic macroinvertebrate, amphibian communities and habitat throughout the Project and downstream to at least the Klamath gage, should be surveyed and typed. Aquatic communities and habitat from the mouth of major tributaries such as Spencer, Shovel and Jenny creeks upstream to documented fish passage barriers should be characterized, with particular emphasis on the availability of spawning habitat. For fish community assessment, we recommend utilizing a combination of direct observation and electrofishing techniques. *See letter for more.*	See studies 1.9, 1.11, 1.19, 1.20, 2.4, and 2.9.
610.	CDFG - D. Koch	Pg. 10 Para	Recommend that PacifiCorp evaluate the success of	See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
	3/27/01	2 Specific Study Comments	existing fish passage structures (all of which are in Oregon and were originally designed to pass resident species). We also recommend that PacifiCorp evaluate the feasibility of passing fish upstream and downstream at all facilities using best available methodologies.	
611.	CDFG - D. Koch 3/27/01	Pg. 11 Para 2 Specific Study Comments	The drawback to convening a Fish Passage Advisory Team is the loss of time during the window of opportunity for conducting studies as part of the relicensing process.	Comment noted.
612.	CDFG - D. Koch 3/27/01	Pg. 11 Para 3 Specific Study Comments	As a mitigation measure required under the current FERC license, hatchery operations should be thoroughly evaluated as part of the relicensing effort.	See study 1.10 *Fish Passage Planning and Evaluation.*
613.	CDFG - D. Koch 3/27/01	Pg. 12 Para 1 Specific Study Comments	The Department does <u>not</u> recommend increased reliance on hatchery production, but rather optimal integration of hatchery operations with the natural anadromous fishery. Iron Gate Hatchery lacks rearing space, combined with less than optimal water quality conditions, limits operational flexibility and resource management options. These operational problems and alternatives for fixing them need to be clearly identified in the relicensing process. *See letter for more.*	See study 1.10 *Fish Passage Planning and Evaluation.*
614.	CDFG - D. Koch 3/27/01	Pg. 13 Para 1 Specific Study Comments	The boundaries of the Project intersect important migratory corridors for deer and include a significant amount of riparian and wetland habitat. PacifiCorp proposes plant and wildlife habitat inventories and mapping, wetland and riparian community characterization, threatened and endangered species inventories, and amphibian and reptile inventories. The Department believes that the general scope of these proposed studies is adequate, the proposals themselves lack detail. *See letter for more.*	Comment noted. See studies 2.5 *Wildlife Movement/Connectivity Assessment* and *Wildlife Habitat Association Assessment and Synthesis of Existing Wildlife Information.*
615.	CDFG - D. Koch 3/27/01	Pg. 14 Para 2 Specific Study Comments	The FSCD's proposed recreational flow study focuses on rafting opportunities while the recreational user survey focuses on lake recreation. The Department believes utilizing this narrow approach will overlook	The Recreation Flow Analysis Study (3.1) has assessed angling opportunities in Project-affected reaches.

Num.	Agency	Page	Comment Summary	Response Summary
			important non-rafting recreational activities within the Project's riverine reaches.	
616.	California State Water Resources Control Board (CSWRCB) - R. Kanz 3/23/01	Pg. 2 Para 2	PacifiCorp must identify impacts to the water quality caused by controllable factors due to the operation of the Project. Once the impacts are identified, PacifiCorp must identify measures that may be reasonably applied to control the impacts to the beneficial uses identified on Pg. 1, Para 3. and Pg. 2, Para 1 of CSWRCB letter.	See studies 1.1, 1.2, 1.2, 1.6, and other related studies.
617.	CSWRCB - R. Kanz 3/23/01	Pg. 2 Para 3	Recommend the preparation of a joint EIS/EIR for this Project.	Comment noted.
618.	CSWRCB - R. Kanz 3/23/01	Pg. 2 Para 5	The FSCD included a number of references to studies that have been completed by PacifiCorp, the City of Klamath Falls, the Bureau of Reclamation (BOR) and other. The actual information on the impacts of the Project regarding beneficial uses was not included in the package. Complete details on the operation of the Project were also limited.	Details regarding the operation of the Hydroelectric project will be included in the hydrology study report. Project impacts on other resource areas will be included in resource study reports and the draft and final applications.
619.	CSWRCB - R. Kanz 3/23/01	Pg. 3 Para 2 Recommended Study	Both the actual and natural (unimpaired) flow out of Klamath Lake and below Iron Gate Dam for the last 30 years should be explained. The amount of water released daily through the A Canal, to the East Side and West Side power plants, and to the river at Link river Dam should be described. The quantity and timing of flow returned to the river above Keno Dam from agricultural sources, along with the operation of the Lost River Diversion Channel (inflow and outflow from the Klamath), should also be explained. The IHA (Indicators of Hydrologic Alterations) should be utilized.	See study 1.4 *Analysis of Project Effects on Hydrology*.
620.	CSWRCB - R. Kanz 3/23/01	Pg. 3 Para 3 Recommended Study	Recommend the development of comprehensive water quality models for the entire Project from inflow to the Project at Link River Dam to outflow at Iron Gate Dam.	See study 1.3 *Water Quality Analysis and Modeling Process.*
621.	CSWRCB - R. Kanz 3/23/01	Pg. 3 Para 4 and Pg. 4 Para 1	A water temperature model should be developed for the Project, to determine the Project effects on temperature. A full range of operations and facilities should be	See study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			modeled including modeling the Project with and without the dams, to determine the extent which the Project impacts water temperatures. *See letter for study methodology for high-resolution models Pg. 4 Para. 2-4.*	
622.	CSWRCB - R. Kanz 3/23/01	Pg. 4 Para 5	In addition to the development of the models, PacifiCorp must determine compliance with the water quality objectives in the Basin Plan. The full set of water quality objectives can be found attached to the letter.	Comment noted.
623.	CSWRCB - R. Kanz 3/23/01	Pg. 4 Para 5	In addition to the attached water quality objectives, PacifiCorp should bioassay warm water fish (large mouth bass) for mercury (methylmercury) from Iron Gate and Copco 1 reservoir. Quality assurance and quality control procedures for water quality monitoring should be submitted to us for review and approval.	See study 1.14 *Determination of Possible Contamination of Sediment in Lake Ewauna and Keno Reservoir.*
624.	CSWRCB - R. Kanz 3/23/01	Pg. 5 Para 1 Recommended Study	It is important to understand Project impact on erosion, sediment transport and sediment deposition (geomorphic processes). A comprehensive geomorphology study of the Project affected stream reaches should be conducted. This study should include the entire Project from Link River Dam to Iron Gate Dam, including Fall Creek; evaluation of the impacts below Iron Gate Dam; and bathymetry of J.C. Boyle, Iron Gate, and Copco 1 Reservoir to estimate the quantity of sediments being retained.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology* which includes a bathymetry study.
625.	CSWRCB - R. Kanz 3/23/01	Pg. 5 Para 2	Agree that instream flow evaluations should be completed on Link River, J.C. Boyle bypass reach, Fall Creek bypass reach, and below Copco 2. Studies should include habitat mapping and use the Instream Flow Incremental Methodology including the PHABSIM or RHABSIM models. In addition, a study of the effects of the peaking operation at J.C. Boyle Powerhouse on the river should be conducted. The study should include a literature search on the effects of peaking operation, and evaluation of the impacts the	See studies 1.8 *Instream Flow Studies*, 1.12 *Instream Flow Analysis,* and 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, and Copco No. 2 Dam*. Also see study 1.16 *Evaluation of Effects of Flow Fluctuation on Aquatic Resources within the J.C. Boyle Peaking Reach.*

Num.	Agency	Page	Comment Summary	Response Summary
			aquatic biota and the riparian vegetation, and present ways to minimize impacts.	
626.	CSWRCB - R. Kanz 3/23/01	Pg. 5 Para 3 Recommended Study	**Riparian Habitat** - A study to determine the Project impacts on the riparian system should be completed. The study should include aerial infrared orthophotography at a resolution of 1 pixel to 1 foot.	See study 2.2 *Wetland and Riparian Plant Community Characterization*.
627.	CSWRCB - R. Kanz 3/23/01	Pg. 5 Para 4 Recommended Study	Anadromous fish within the Klamath River are very important to the Tribes and it should be a goal of relicensing to recover or improve this historic beneficial use to the Klamath River. PacifiCorp should analyze the impact of the Project under current operation. *See letter for more analysis inclusions.* The impact of the Project on the fishery below Iron Gate Dam should be evaluated. In addition, a full range of alternatives with the estimated cost of implementation and power loss (of generation) should be developed and evaluated. *See letter for alternatives.*	PacifiCorp's impact to anadromous fish will be described through a number of studies. Future alternatives to address this impact will be developed through the Fish Passage Working Group.
628.	CSWRCB - R. Kanz 3/23/01	Pg. 6 Para 2 Recommended Study	A comprehensive study of both native and non-native fish resources in the Klamath River downstream of J.C. Boyle Reservoir, in Copco 1 Reservoir, and in Iron Gate Reservoir should be completed. *See letter for more.*	PacifiCorp will use information from study 1.9 *Fisheries Assessment* and previously conducted studies to characterize fish resources in Project reservoirs.
629.	CSWRCB - R. Kanz 3/23/01	Pg. 6 Para 3 Recommended Study	Benthic Macroinvertebrates (BMI's) have become a standardized tool to evaluate the impacts of water quality. Rapid Bioassessment techniques, following the California Stream Bioassessment Procedure (CSBP) should be utilized to evaluate water quality impacts from this Project. *See letter for river sections and number of reaches that should be sampled.*	See studies 1.11 *Macroinvertebrates Study* and 1.20 *Spring '2003 Macroinvertebrates Study.*
630.	CSWRCB - R. Kanz 3/23/01	Pg. 6 Para 4 Recommended Study	A survey of mussels to determine species identification and location should be completed for the Klamath River between J.C. Boyle Dam and Iron Gate Dam, and below Iron Gate Dam. Additionally, a survey of aquatic snails should be completed, and the Project impacts on these species should be determined.	See study 1.19 *Investigation of Klamath River Freshwater Bivalves in the J.C. Boyle Peaking Reach and Downstream of Iron Gate Dam.*
631.	CSWRCB - R. Kanz	Pg. 7 Para	A study should be completed to determine the location	See study 2.6 *Wildlife Habitat Association Assessment and Synthesis*

Num.	Agency	Page	Comment Summary	Response Summary
	3/23/01	2 Recommended Study	of suitable habitat for amphibian and reptile species of special concern in the vicinity of the Project (including downstream of Iron Gate Dam).	*of Existing Botanical and Wildlife Information*.
632.	CSWRCB - R. Kanz 3/23/01	Pg. 7 Para 3 Recommended Study	The distribution, food sources, and habitat of river otters should be evaluated within the Project. Project impacts on the aquatic mammals should be determined, and appropriate mitigation, if needed, should be proposed.	See study 2.6 *Wildlife Habitat Association Assessment and Synthesis of Existing Botanical and Wildlife Information*.
633.	CSWRCB - R. Kanz 3/23/01	Pg. 7 Para 4 Recommended Study	PacifiCorp should conduct studies to determine the Project impacts and opportunities for recreational uses of the Klamath River, Copco Reservoir, and Iron Gate Reservoir. *See letter for more.*	PacifiCorp is conducting a number of recreation studies to help determine Project impacts and potential opportunities. See Recreation studies 3.1 *Recreation Flow Analysis* through 3.4 *Recreation Needs Analysis*.
634.	CSWRCB - R. Kanz 3/23/01	Pg. 7 Para 5 Recommended Study	PacifiCorp should explain the contract with the BOR for the operation and release of water at Link River Dam. Past operation of the dam should be described including a description of whether releases are under the control of the BOR or PacifiCorp. In addition, PacifiCorp should document what type of California water rights it holds for the operation of Project components in California, including Copco 1 and 2, Fall Creek, and Iron Gate.	See Exhibit B of the license application.
635.	CSWRCB - R. Kanz 3/23/01	Pg. 7 Para 6 Recommended Study	The impacts of Project roads and erosion on water quality should be evaluated. In addition, the operation and maintenance of the J.C. Boyle canal should be described, including the use of algaecides and their potential impacts to downstream aquatic species or specific life stages. There is a spill channel at the entrance to the end of the canal, and at the entrance to the tunnel below J.C. Boyle Dam which is severely eroded. The operation of the spill channel should be explained including how often it is used and possible impact to water quality. If there are water quality impacts, a study should be developed to determine methods to reduce or avoid the impacts.	See studies 4.2 *Inventory of Klamath Hydroelectric Project Roads* and 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*. PacifiCorp has not used algaecides as part of maintenance activities at the Klamath Hydroelectric Project.
636.	CSWRCB - R. Kanz 3/23/01	Pg. 8 Last Paragraph	Encouraged to use the "hybrid" collaborative process at a minimum.	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
637.	Klamath River Basin Fisheries Task Force (KRBFTF)- J. Engbring 3/21/01	Pg. 1 Para 2	The Klamath Hydroelectric Project has contributed to the decline of Klamath River Basin anadromous fisheries by eliminating access to spawning habitat above Iron Gate Dam, and by negatively affecting water quality in the Klamath River below Iron Gate Dam. This in turn has affected the economies of Tribal and non-Tribal fishing communities along the Klamath River and several hundred miles of the Pacific Coast. Hope that the relicensing effort will result in the successful restoration of anadromous salmonids to their historic range as well as improve habitat of the Klamath River below the Project.	Comment noted.
638.	KRBFTF - J. Engbring 3/21/01	Pg. 1 Para 3	The scope is too limited and the potential effects of the Project are understated.	Comment noted.
639.	KRBFTF - J. Engbring 3/21/01	Pg. 2 Para 1 FSCD 5.2	Outlines of several management objectives are given, however, the Klamath River Basin Fisheries Task Force Long Range Plan is not mentioned. It should be summarized in this section of the report, and information contained in it appropriately cited.	Comment noted.
640.	KRBFTF - J. Engbring 3/21/01	Pg. 2 Para 2 FSCD Pp. 5-28	Studies to assess the effects of the Project upon water quality and related fish kills downstream of Iron Gate Dam should be done.	Comment noted. See water quality studies.
641.	KRBFTF - J. Engbring 3/21/01	Pg. 2 Para 3	Studies that will determine adequate minimum flows below Iron Gate Dam should be done, especially those studies that build on existing information to identify FERC flows that are essential for protecting anadromous fish species.	See study 1.12 *Instream Flow Analysis*. PacifiCorp is not including downstream of Iron Gate in the study. Releases at Iron Gate dam will be at the direction of USBR.
642.	KRBFTF - J. Engbring 3/21/01	Pg. 2 Para 4	PacifiCorp should identify and conduct studies to assess a broad range of alternatives for the successful upstream and downstream passage of anadromous salmonids. Timing is essential.	See study 1.10 *Fish Passage Planning and Evaluation.*
643.	KRBFTF - J. Engbring 3/21/01	Pg. 3 Para 2	PacifiCorp must evaluate whether it is meeting its obligation to mitigate for the loss of fishery resources resulting from Project operations. It is imperative that PacifiCorp fully evaluate Iron Gate Hatchery mitigation production goals within the context of	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
			providing fish passage to the upper basin.	
644.	Klamath Fishery Management Council (KFMC) - M. Mueller 03/07/01	Pg. 1 Para 2	The decline of Klamath River Basin fisheries resources is of serious concern to KFMC, since ocean fisheries along the Pacific Coast from Cape Falcon to Monterey Bay have been constrained by the need to reduce harvest impacts to Klamath River fall Chinook.	Comment noted.
645.	KFMC - M. Mueller 03/07/01	Pg. 1 Para 2	The Project has had a significant effect on Klamath Basin fisheries and subsequently on the economics of tribal and non-tribal fishing communities within the Klamath Basin and along several hundred miles of the Pacific Coast.	Comment noted.
646.	KFMC - M. Mueller 03/07/01	Pg. 2 Para 2	Water Quality - Studies to assess the effects of the Project upon water quality and related fish kills downstream of Iron Gate Dam should be done.	See water quality studies.
647.	KFMC - M. Mueller 03/07/01	Pg. 2 Para 3	Hydrology - Studies that will determine adequate minimum flows below Iron Gate Dam should be done, especially those studies that build on existing information to identify FERC flows that are essential for protecting anadromous fish species.	See study 1.12 *Instream Flow Analysis*. PacifiCorp is not including downstream of Iron Gate in the study. Releases at Iron Gate dam will be at the direction of USBR.
648.	KFMC - M. Mueller 03/07/01	Pg. 2 Para 4	Fish Passage - PacifiCorp should identify and conduct studies to assess a broad range of alternatives for the successful upstream and downstream passage of anadromous salmonids. A component of this analysis should include an assessment of the anadromous salmonid habitat available above Iron Gate Dam as well as an accounting of the many projects being conducted or proposed to restore aquatic and riparian habitat in the Upper Klamath Basin.	See study 1.10 *Fish Passage Planning and Evaluation.*
649.	KFMC - M. Mueller 03/07/01	Pg. 2 Para 4	Mitigation - PacifiCorp must evaluate whether it is meeting its obligation to mitigate for the loss of fishery resources resulting from Project operations. It is imperative that PacifiCorp fully evaluate Iron Gate Hatchery mitigation production goals within the context of providing fish passage to the upper basin.	See study 1.10 *Fish Passage Planning and Evaluation.*
650.	National Park Service (NPS) - J. Reynolds	Pg. 1 Para 2	In general agreement with comments submitted by the Bureau of Land Management relative to recreation	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/20/01		resources.	
651.	NPS - J. Reynolds 3/20/01	Pg. 1 Para 3	Upper Klamath Lake should be included within the areas proposed for PacifiCorp's recreation studies.	Recreation use at Upper Klamath Lake is not directly affected by PacifiCorp hydro operations. Lake elevations are determined by USFWS and Link River Dam operations are directed to PacifiCorp by the Bureau of Reclamation. Upper Klamath Lake will be included in the regional context study for recreation.
652.	NPS - J. Reynolds 3/20/01	Pg. 2 Para 1	Future operational plans must take into account the general conditions of the segment of the project which is designated as a National Wild and Scenic River (J.C. Boyle powerhouse to Copco reservoir), as well as those sections previously found to be eligible for designation (Oregon state line to Copco Reservoir). *See letter for more.*	PacifiCorp intends to determine the affects of current operations and potential operational scenarios on the river reaches mentioned. These results will be presented in resources study report and the draft and final applications.
653.	NPS - J. Reynolds 3/20/01	Pg. 2 Para 1 FSCD Recreation Flow Analysis Study	1. This study should be considerably more comprehensive than merely looking at the traditional, commercial rafting activities which take place between J.C. Boyle powerhouse and Copco. There are other reaches currently used by private boaters and additional reaches that may be found to be potentially boatable. 2. Opportunities to manage [provide information on] anticipated (natural) spill events at the project dams should be examined to determine if increases in the duration and magnitude of boatable flows are possible. 3. Given wet or average years, scheduled recreation flow releases should be provided on the J.C. Boyle/Copco reach and others if they are determined to be boatable. 4. There is very little information provided regarding the methodology to be used in identifying boatable flows. There are a number of acceptable methods, which may be employed. We would like to know which of these methods would be used.	See study 3.1 *Recreation Flow Analysis.*
654.	NPS - J. Reynolds 3/20/01	Pg. 2 Para 6 and Pg. 3	This study should <u>not</u> be restricted to "lake recreation". A full assessment of dispersed recreation within the	Dispersed recreation sites in the vicinity of the Project are included in the recreation studies. See study 3.4 *Recreation Needs Analysis.*

Num.	Agency	Page	Comment Summary	Response Summary
		Para 1-3	project area should be conducted. There is no real detail provided on what survey methodology will be utilized in this study. *See letter for more.*	
655.	NPS - J. Reynolds 3/20/01	Pg. 3 Para 4-5	The regional boundaries of this study need to be expanded beyond the proposed 50 miles. AND Collaborating resource agencies are currently working on management plans for the Klamath River. These should be considered in the analysis. *See letter for more.*	It may be appropriate to go beyond a 50-mile radius for regional context of whitewater opportunities. For other components of the regional study, an approximate 50-mile study radius will be used. Will consider Klamath River management plans in analysis. See study 3.3 *Regional Recreation Analysis.*
656.	NPS - J. Reynolds 3/20/01	Pg. 3 Para 5-6	The established day use activities on the J.C. Boyle reservoir should be recognized and warrant analysis. AND The Inventory and Assessment of Existing Recreation Facilities study should take dispersed recreation sites and facilities more fully into account. A number of areas on the project that are receiving routine use will not be assessed under the stated scope of the study, which limits it to "existing facilities".	PacifiCorp intends to document dispersed use at Project facilities including J.C. Boyle Reservoir and sites along the Klamath River between J.C. Boyle and Copco reservoirs. See study 3.4 *Recreation Needs Analysis.*
657.	American Whitewater (AW) - J. Gangemi 3/22/01	Pg. 2 Para 2	The Klamath River has many interest groups whose competing goals warrant systematic evaluations of each facility to determine the proper balance of water allocation for respective uses.	Comment noted.
658.	AW - J. Gangemi 3/22/01	Pg. 2 Para 3	FSCD did not include information or analysis on project decommissioning or information on PacifiCorp's program to meet respective state energy conservation requirements.	Comment noted.
659.	AW - J. Gangemi 3/22/01	Pg. 3 Para 2 FSCD 4.0	**Water Use and Quality** - 1. The environmental report should include all contractual agreements under the Klamath River Basin Compact or ancillary agreements between PacifiCorp and other parties that affect water quantity. 2. PacifiCorp should provide USBR reservoir operation rule curves for Klamath Reservoir, water rights (acre feet) and the timing for releases associated with these water rights to downstream users. *3.* PacifiCorp should provide mean daily stream	See Exhibit B of the license application, study 1.4 *Analysis of Project Effects on Hydrology* and study 1.3 *Water Quality Analysis and Modeling Process.*

Num.	Agency	Page	Comment Summary	Response Summary
			flows in the respective river reaches for the period of record for dry, normal, and wet years. *See letter for more.* 4. The Water use and Quality section fails to include a subheading on water quantity. Should conduct a comparative analysis of the regulated and unregulated flow regime using Richter's Index of Hydrologic Alteration.	
660.	AW - J. Gangemi 3/22/01	Pg. 3 Para 2 and Pg. 4 Para 3 FSCD 5.0	**Fish Resources** - IFIM data alone is insufficient for recommending instream flows for aquatic biota. Within the fisheries analysis, PacifiCorp must evaluate the validity and the benefit of MIFs selected from IFIM results with alternate methodologies. Request that PacifiCorp conduct hydrologic analysis using the Tennant, ABF and Richter methodologies for comparison with the PHABSIM recommendations derived for the current MIF and any proposed alternative MIF.	PacifiCorp is completing an IFIM study (1.8 *Instream Flow Scoping Plan* and 1.12 *Instream Flow Analysis*). Additional hydrologic information will be provided in study 1.4 *Determination of Possible Contamination of Sediment in Lake Ewauna and Keno Reservoir*. Tennant, ABF and Richter methods will not be completed for comparison.
661.	AW - J. Gangemi 3/22/01	Pg. 4 Para 4 FSCD 5.5.3	**Fish Passage Planning and Evaluation** - What fish passage structures exist for upstream and downstream passage? 2) What is the effectiveness of existing fish passage structures? 3) What facilities would need to be structurally modified to allow fish passage? Must also consider decommissioning as a fish passage alternative. *See letter for more.*	See study 1.10 *Fish Passage Planning and Evaluation.*
662.	AW - J. Gangemi 3/22/01	Pg. 5 Para 1 FSCD 8.1.2	**Project Area Recreational Activities and Facilities** - The descriptions for each individual project facility did not document the accessibility of river reaches below each respective dam nor the portage options. *See letter for more.*	PacifiCorp will describe river access conditions at each Project facility in the draft and final license applications. PacifiCorp intends to document Project related river access opportunities, and public flow information at each Project facility.
663.	AW - J. Gangemi 3/22/01	Pg. 5 Para 2 FSCD 8.1.2.4	**Klamath River - Boyle/Copco Reach** - The section of River between the J.C. Boyle powerhouse and Copco Reservoir is designated Wild and Scenic under the Federal Wild and Scenic Rivers Act. PacifiCorp failed to list those Outstanding Remarkable Values (ORVs) identified by the BLM for this river reach.	Comment noted. This information will be included in future documents including draft and final applications.
664.	AW - J. Gangemi	Pg. 5 Para	**8.1.3 Recreational Demand and Use** - PacifiCorp	See study 3.2 *Recreation Visitor Surveys.*

Num.	Agency	Page	Comment Summary	Response Summary
	3/22/01	3 FSCD 8.1.2.5 and 8.1.3	should conduct a recreation use monitoring study along the Klamath River to question users about flow levels relative to quality of experience, trip expenditure info, frequency of visits and place of origin. "Title 18 of the Code of Federal Regulations (18 CFR) Section 4.51 (f)(5)" requires the applicant to provide "an estimate of existing and potential recreational use of the project area, in daytime and overnight visits. "	
665.	AW - J. Gangemi 3/22/01	Pg. 5 Para 4, Pg. 6 Para 4 FSCD 8.3.4	**River Instream Flows and Flow Fluctuations** - J.C. Boyle load-factoring operations cause dramatic flow fluctuations in the Klamath River downstream of the powerhouse. The FSCD implies that J.C. Boyle facility operations are symbiotic with commercial whitewater needs. BUT over the past three years PacifiCorp has reduced their commitment to scheduled flows incrementally each year. PacifiCorp must conduct studies to determine the impact of the eight facilities in the remaining riverine reaches. *Specific study approaches in section 8.5.1 comments.*	See study 3.1 *Recreation Flow Analysis.*
666.	AW - J. Gangemi 3/22/01	Pg. 6-8 Para 4 FSCD 8.5.1	**Recreational Flow Analysis Study** - This study and associated recreation studies do not meet the legal requirements necessary to develop a whitewater flow recommendation. The FSCD assumes that whitewater recreation takes place in the reach below J.C. Boyle powerhouse only. *See letter for the multi-step approach to evaluate whitewater opportunities between Link River Dam and the reach below Iron Gate. Also American Whitewater requests that the list of components of a successful controlled flow study be added.*	See study 3.1 *Recreation Flow Analysis.*
667.	AW - J. Gangemi 3/22/01	Pg. 9 Last Paragraph FSCD 8.5.2	**Recreation User Survey** - See earlier comments in section 8.1.3 regarding documentation of current recreational use.	See study 3.2 *Recreation Visitor Surveys.*
668.	AW - J. Gangemi 3/22/01	Pg. 10 Para 1	**Boating Flow Information** - The public should have access to flow information on a real-time flow basis below each respective dam and powerhouse. The	PacifiCorp currently provides the J.C. Boyle release schedule via internet and PacifiCorp flow phone. Providing real-time flow data for other affected reaches will be considered as a potential enhancement

Num.	Agency	Page	Comment Summary	Response Summary
			ability of the gages to provide real-time flow information via the Internet and flow phone should be assessed. The need for additional gages should be evaluated within the project affected reaches.	depending upon the outcome of Whitewater boating feasibility studies for each affected reach.
669.	AW - J. Gangemi 3/22/01	Pg. 10 Para 2	**Wild and Scenic River Designation** - Because the Klamath River below J.C. Boyle powerhouse is designated as Wild and Scenic River, PacifiCorp must continue to operate the J.C. Borel powerhouse in a manner that does not degrade the recreation or scenic values of the river. PacifiCorp must outline how the project operations proposed in a new license do not undermine these resource values.	PacifiCorp will evaluate impacts of existing and proposed project operations on Upper Klamath Wild and Scenic River ORV's and identify existing and potential conflicts with the ORV's in the draft and final license applications.
670.	AW - J. Gangemi 3/22/01	Pg. 10 Para 3	**Environmental Analysis** - An Environmental Assessment is not sufficient for analyzing the range of alternatives necessary to develop new license terms and conditions therefore, an Environmental Impact Study should be carried out.	Comment noted. This comment is more appropriately directed to FERC.
671.	AW - J. Gangemi 3/22/01	Pg. 10 Para 4	**All** stakeholders should be included in Stage 2 consultation.	Agree – See relicensing Process Protocol for the Klamath collaborative process.
672.	Pacific Coast Federation of Fishermen's Associations (PCFFA) - G. Spain 3/27/01	Pg. 2 Para 2-5	The project has greatly reduced the total populations of salmon, truncated their historic range and reduced their genetic diversity. Iron Gate Dam was built with no fish passage whatsoever. This has meant the virtual extinction of all anadromous runs above IGD. Natural sediments and nutrients that historically would have migrated downstream have now been blocked, which may have impacts on suitable spawning gravel beds. Additionally, water releases from IGD have greatly affected downriver water quality, quantity and completely altered hydrological profiles.	Comment noted.
673.	PCFFA - G. Spain 3/27/01	Pg. 2 Para 2-5 and Pg. 3 Para 1-2	Water quality below IGD is now so limited that the mitigation efforts of Iron Gate Hatchery frequently fail. PCFFA's interest is in seeing these salmon stocks restored to as great an extent as possible, in minimizing future conflicts between hydropower production and fisheries, and in seeking full and complete mitigation	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			from PacifiCorp for the damage to salmon fisheries and aquatic resources that has already been done or which cannot be reversed.	
674.	PCFFA - G. Spain 3/27/01	Pg. 3 Para 4	The scope of the FSCD is too limited and the potential effects of the Project are seriously understated. PacifiCorp should conduct thorough investigations to determine the effects of the Project upon overall water quality in the Klamath River, with the goal of developing a strategy for operating the Project that does not degrade Klamath River water quality further.	See water quality studies.
675.	PCFFA - G. Spain 3/27/01	Pg. 3 Para 5	FSCD does not specifically identify information needs and associated studies necessary to make informed fish passage decisions. The Fish Passage Advisory Team should have meaningful decision-making input regarding the studies to be conducted by PacifiCorp.	See study 1.10 *Fish Passage Planning and Evaluation.*
676.	PCFFA - G. Spain 3/27/01	Pg. 4 Para 1 and Pg. 4 Para 4	FSCD does not contemplate assessing the ecological and economic damage done to the lower river and coastal communities. FERC requires that PacifiCorp ascertain the FULL RANGE of impacts, not only in the immediate Project area, but also on the downriver hydrology, geology and biology as well as on human communities and fishing economies.	For a number of studies, the geographic scope of the study was extended downstream as appropriate.
677.	PCFFA - G. Spain 3/27/01	Pg. 4 Para 2 and Pg. 4 Para 4	The range of alternatives for analysis is too narrow. PacifiCorp should conduct studies to assess a broad range of alternatives for the successful upstream and downstream passage of anadromous salmonids, up to and including selective decommissioning of dams within the Project. The assessment should include the habitat available above Iron Gate Dam.	Study 1.10 *Fish Passage Planning and Evaluation* included model runs that had no hydroproject scenarios.
678.	PCFFA - G. Spain 3/27/01	Pg. 4 Para 3	As the Fish Passage Advisory Team evaluates the role of fish hatchery facilities in the Klamath River, it is important to consider that Iron Gate Hatchery does not mitigate for all habitat lost from the Project, nor does it mitigate for all the races of chinook that have been extirpated above Iron Gate Dam.	Comment noted.
679.	PCFFA - G. Spain	Pg. 5 Para	Should develop a baseline profile of what historical	FERC does not require a review of pre-project conditions. However,

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	3/27/01	1	conditions actually were before hydro-project and water delivery development occurred, in order to study the impacts of the Project.	some studies will contain related information.
680.	California Trout (CalTrout) - C. Knight 3/26/01	Pg. 2 Para 4	Suggests PacifiCorp consider a collaborative process because of the complex nature of the project.	PacifiCorp established a collaborative relicensing process in January 2002.
681.	CalTrout - C. Knight 3/26/01	Pg. 3 Para 3	Figures 2-3 to 2-6 show the FERC boundary excluding large portions of the mainstem Klamath River. The entire mainstem of the Klamath River from Link River Dam to Iron Gate be included in the boundary. At a minimum, the downstream boundary should extend to the Scott River.	PacifiCorp expects that relicensing studies will help define the area influenced by the Project. See Exhibit G of the license application for proposed FERC boundary.
682.	CalTrout - C. Knight 3/26/01	Pg. 3 Para 5	The Nature Conservancy provides a general approach for hydrologic assessment by comparing hydrologic regimes before versus after a river system has been altered. CalTrout suggests that PacifiCorp use this method.	This method was not completed, however, see Study 1.4 *Analysis of Project Effects on Hydrology* for hydrologic information.
683.	CalTrout - C. Knight 3/26/01	Pg. 4 Para 1 and Pg. 4 Para 3-5 and Pg. 5-6	IFIM studies have come under increasing criticism to the point where some researchers have suggested no scientifically defensible method exists for defining instream flow needs to protect particular species of fish or aquatic ecosystems. Use IFIM studies as well as a variety of other methodologies. *See letter for three methods: 1) minimum flow standard techniques, 2) hydraulic and hydrologic models, and 3) conceptual models.*	PacifiCorp is completing an IFIM study (1.8 *Instream Flow Scoping Plan* and 1.12 *Instream Flow Analysis*). Additional hydrologic information will be provided in study 1.4 *Determination of Possible Contamination of Sediment in Lake Ewauna and Keno Reservoir*. Tennant, ABF and Richter methods will not be completed for comparison.
684.	CalTrout - C. Knight 3/26/01	Pg. 7 Para 1 and 2	Ramping studies should include the impacts of daily fluctuating flows on riparian vegetation recruitment; macroinvertebrate population abundance, diversity and taxa richness; and fish stranding. Ramping rates should be implemented based on a change of cfs per hour, not a change of inches per hour, as is presently the case below J.C. Boyle powerhouse, because the latter is influenced by channel shape.	See studies 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam*, 1.11 *Macroinvertebrates Study* and 2.2 *Wetland and Riparian Plant Community Characterization.*
685.	CalTrout - C. Knight 3/26/01	Pg. 7 Para 3	Fish stranding should be evaluated for all fish and all life stages. Of particular concern to CalTrout is the	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and*

Num.	Agency	Page	Comment Summary	Response Summary
			effect ramping flows have on early life stages of fish, especially rainbow trout.	*Iron Gate Dam.*
686.	CalTrout - C. Knight 3/26/01	Pg. 7 Para 4 and 5	No geomorphological studies were proposed. Ayres Associates (1999) concluded that, "changes in the river's flow regime resulting from basin-wide water projects have produced no significant geomorphic impacts to the Klamath River below Iron Gate dam". CalTrout requests a copy of the Ayres Associates (1999) study, as they are skeptical that such a definitive statement could be made about the geomorphic impacts.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
687.	CalTrout - C. Knight 3/26/01	Pg. 8 Para 3	Recommends a study that determines a sediment maintenance flow of moderate size, just sufficient to entrain the bed surface over the duration of the release, that limits gravel loss and maximizes sand trapping by pools.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
688.	CalTrout - C. Knight 3/26/01	Pg. 9 Para 1	PacifiCorp, in consultation with the resource agencies, should produce a carrying-capacity study of sufficient detail that is provided biological performance objectives (numbers within the population to be restored and/or sustained as well as deadline/milestones when these will be achieved). Essential so that the public agencies, and the public themselves, have a reliable and objective performance standard to judge PacifiCorp's compliance with ecosystem management.	PacifiCorp has not completed a carrying-capacity study.
689.	CalTrout - C. Knight 3/26/01	Pg. 9 Para 2	Suggests that PacifiCorp reevaluate diversion and grazing impacts on Shovel Creek. Grazing impacts should also be evaluated along the mainstem of the Klamath River within the Wild Trout Area.	Grazing will be addressed in study 2.8 *Grazing Analysis* and in the Land Management section of the draft license application. While grazing management is not part of PacifiCorp's hydro operations, the Company has worked cooperatively with federal agencies and private sportsman organizations to protect sensitive riparian areas from over grazing. Riparian fences have been constructed on PacifiCorp's property on Shovel Creek and along the Klamath River in this vicinity. Riparian fences on the lower portion of Shovel Creek prevent cattle from accessing the lower 2.7 miles of riparian area. Within the draft and final license application, PacifiCorp will consider

Num.	Agency	Page	Comment Summary	Response Summary
				future land use activities on Project lands in light of county, state, and federal land use plans and impacts to other resources such as water quality. PacifiCorp will provide in the application, a descriptive assessment of grazing practices within the vicinity of the Project. This will include a discussion on PacifiCorp's corporate agricultural and grazing leases as well as cooperative fencing and other conservation efforts.
690.	CalTrout - C. Knight 3/26/01	Pg. 9 Para 4 and 5	The Iron Gate Hatchery evaluation should include the impact the project has had on spring-run chinook salmon, once the most abundant run in the Upper Klamath system. Suggests that the Iron Gate Hatchery Evaluation take place as a separate study, not as part of the fish passage evaluation. Also, the effect of the hatchery on wild salmon deserves a separate, in-depth study.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*
691.	CalTrout - C. Knight 3/26/01	Pg. 10 Para 2	Recommends that PacifiCorp habitat type the Klamath River from Link River Dam to the Scott River to provide a snapshot of current conditions and for baseline purposes.	See study 2.1 *Vegetation Cover Type/Wildlife Habitat Inventory and Mapping.* PacifiCorp extended the vegetation cover typing for riparian vegetation from Link River dam to the Shasta River, which is the next large tributary downstream of Iron Gate.
692.	CalTrout - C. Knight 3/26/01	Pg. 10 Para 3	Fish entrainment problems should be evaluated at all intakes along the river, specifically at the Eastside and Westside diversion canals. 1996 the BOR agreed that its permittee would install and maintain US Fish and Wildlife approved entrainment reduction devices on the Eastside and Westside diversion canals no later than June 1, 2000. Apparently this has not been done to the detriment of the endangered sucker species in Upper Klamath Lake.	See study 1.10 *Fish Passage Planning and Evaluation.* Also see Gutermuth (2000) report no previous entrainment study conducted at Eastside and Westside diversion canals.
693.	CalTrout - C. Knight 3/26/01	Pg. 10 Para 4-6	There is little mention of benthic macroinvertebrates, which are sensitive to water quality and habitat quality, in the FSCD. Recommends implementation of the California Stream Bioassessment Procedure (CSBP) as a standardized protocol for assessing biological and physical habitat conditions. *See letter for more.*	See studies 1.11 *Macroinvertebrates Study* and 1.20 *Spring '2003 Macroinvertebrates Study.*.
694.	CalTrout - C. Knight 3/26/01	Pg. 11 Para 1	In consultation with the resource agencies PacifiCorp should develop and produce all necessary water quality	See water quality studies.

Num.	Agency	Page	Comment Summary	Response Summary
			studies as a means to expedite their future application and pre-requisite §401 certification.	
695.	CalTrout - C. Knight 3/26/01	Pg. 11 Para 1 and 2	Listing coho salmon, lost river sucker and shortnose sucker under the Federal Endangered Species Act, fish kills in Summer 2000 and the listing of the Klamath River as impaired under §303 (d) of the Clean Water Act indicate that water quality standards are not being met.	Comment noted.
696.	CalTrout - C. Knight 3/26/01	Pg. 11 Para 3	Recommends that PacifiCorp fund the development of comprehensive water quality and temperature models of pre-project conditions. *See letter for more.*	See study 1.3 *Water Quality Analysis and Modeling Process*. PacifiCorp is making "without hydroelectric project" but not pre-project.
697.	CalTrout - C. Knight 3/26/01	Pg. 11 Para 4	Under §18 of the FPA, PacifiCorp will be required to implement fish passage as prescribed by the US Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) for migration of anadromous fish to spawning areas above the dams, and return of these species to their marine habitats.	Comment noted.
698.	CalTrout - C. Knight 3/26/01	Pg. 11 Para 4	The FPA states that FERC "shall require the construction maintenance, and operation by a licensee at its own expense of such … fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate" (16 USC §811). This section applies to any project that may impact the passage of any fish species present in the project area. § 18 applies to both upstream and downstream passage (Public Law 102-486, §1701(b), 1992).	Comment noted.
699.	CalTrout - C. Knight 3/26/01	Pg. 12 Para 1	Fish Passage Advisory Team should be formed and convene immediately and begin evaluating fish passage alternatives.	See study 1.10 *Fish Passage Planning and Evaluation.*
700.	CalTrout - C. Knight 3/26/01	Pg. 12 Para 3	There is no mention of dam safety. Dam Safety should be evaluated for all structures, especially aging dams such as Copco 1.	PacifiCorp monitors dam safety through FERC Part 12 inspections.
701.	CalTrout - C. Knight 3/26/01	Pg. 12 Para 4 and 5	Impact on native people of the Klamath Basin should be fully assessed. Any efforts to include existing dams and other project related structures under the National Register of Historic Places would be inappropriate	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			considering the projects impact on native cultures and the biological integrity of the Klamath River	
702.	CalTrout - C. Knight 3/26/01	Pg. 12 Para 6	An economic study should be developed that takes into account project impacts and benefits. Impacts should include loss of commercial fishing in the ocean, loss of tribal fishing rights, and loss of sportfishing opportunities below, within, and above the project area. Study should be set in the context of the project producing only 151 MW of power.	See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1* and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study*.
703.	Oregon Natural Resources Council (ONRC) - W. Wood 3/26/01	Pg. 1 Para 2 and 3	It is the goal of ONRC, Friends of the River, Northcoast Environmental Center, and Siskiyou Regional Education Project to restore anadromous fish populations within the Klamath Basin including the headwaters above Upper Klamath Lake. This goal should be incorporated in the relicensing process.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
704.	ONRC - W. Wood 3/26/01	Pg. 2 Para 1	The Federal Power Act (FPA) requires that hydroelectric facilities that block access to anadromous fish habitat provide a means for upstream and downstream passage. The Klamath River Restoration Act (KRRA) mandates actions necessary to improve and restore habitats and promote access to blocked habitats, and to improve upstream and downstream fish migration by removing obstacles to fish passage. Sections of the Klamath river are designated under the National Wild and Scenic Rivers Act (NWSRA), and the outstanding recreational value of the Klamath River below Iron Gate is its anadromous fisher. Certification under § 401 of the Clean Water Act (CWA) must be obtained before FERC can issue PacifiCorp a new license for the Project. The Project must also comply with the federal Endangered Species Act (ESA) in order to avoid jeopardizing the continued existence of or interfering with the recovery of listed species. Currently listed species in the Klamath River include threatened coho salmon and endangered shortnose and Lost River suckers, and more will be added in the near future.	Comment noted.
705.	ONRC - W. Wood 3/26/01	Pg. 2 Para 2	The FSCD studies currently proposed are not sufficient in scope or content to adequately assess Project effects or develop protection or mitigation measures or lead to the successful restoration of anadromous fish populations above and below the Project area.	Studies have been revised through the collaborative relicensing process. See plenary-approved study plans.
706.	ONRC - W. Wood 3/26/01	Pg. 2 Para 2	The FSCD understates potential Project effects, relies too heavily upon insufficient prior studies as a substitute for conducting its own studies, and has failed to incorporate the suggestions of agencies, tribes and individuals made during pre-relicensing meetings. FERC requires that the future license application provide an evidentiary record to substantiate all of its conclusions (Bangor Hydro v. Federal Energy Regulatory Commission). The license application must document, by footnote or otherwise, each scientific or	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			other analytical method used to interpret data to reach a conclusion (40 CFR §1502.24).	
707.	ONRC - W. Wood 3/26/01	Pg. 2 Para 2	Concern that PacifiCorp maintains that current environmental conditions will be used as the environmental baseline for assessing Project effects (pg. 10-3). While FERC regulations may allow for this skewed approach, FERC regulations also require PacifiCorp to assess cumulative impacts, and the only way to assess cumulative impacts is to evaluate pre-project conditions as the environmental baseline. FERC regulations also require PacifiCorp to develop and implement mitigation measure. In order to determine fair and adequate mitigation measures it is necessary to consider pre-project conditions as the basis for determining the level of mitigation required.	PacifiCorp maintains that FERC guidelines and case law support the approach of using current conditions as an environmental baseline. FERC may consider cumulative impacts as part of their NEPA process. PacifiCorp's license application to FERC will include protection, mitigation and enhancement measures that work towards an appropriate balance of natural, economic, and social resources.
708.	ONRC - W. Wood 3/26/01	Pg. 3 Para 1	A comprehensive description of the locations of irrigation diversions and return flows should be discussed and included in Figures 2-3 to 2-6.	Information on Reclamation's irrigation diversions and operations will be included in the hydrology study report. See also Exhibit B of the license application.
709.	ONRC - W. Wood 3/26/01	Pg. 3 Para 2	The location of penstock intakes is not provided. This is a critical piece of information for the evaluation of project effects on water quality and fish resources, and should be included in Table 2-1.	See Exhibit B of the license application.
710.	ONRC - W. Wood 3/26/01	Pg. 3 Para 3	The discussion of Project Area Hydrology does not include pre-project hydrographs, even though gauges have been in place since 1904. Pre-project hydrographs are essential to an evaluation of cumulative effects of the Project. Such an evaluation must be conducted as part of the relicensing.	FERC does not require the license applicant to provide or consider pre-project information.
711.	ONRC - W. Wood 3/26/01	Pg. 3 Para 3	FSCD fails to include information on the amount of inflow into the Project area from year-round tributaries and springs.	See study 1.4 *Analysis of Project Effects on Hydrology*.
712.	ONRC - W. Wood 3/26/01	Pg. 3 Para 4	Keno Dam and Reservoir should be consistently included when discussing and assessing Project impacts and mitigations throughout the FSCD.	Comment noted.
713.	ONRC - W. Wood 3/26/01	Pg. 3 Para 5	The FERC boundary should be expanded to include the entire Klamath River from Link River Dam to the	A new FERC boundary is proposed in Exhibit G of the license application.

Num.	Agency	Page	Comment Summary	Response Summary
			mouth at Requa, CA. At a minimum the FERC boundary should include the entire Klamath River from Link River Dam to the confluence with the Shasta or Scott Rivers.	
714.	ONRC - W. Wood 3/26/01	Pg. 3 Para 6 and Pg. 4 Para 1-3	Discussion of fisheries resources in the Environmental Setting is deferred to Section 5. Both sections fail to adequately describe historical and current anadromous fish resources. A description of fish resources related to the Project is incomplete at best and intentionally misleading at worst without this type of discussion.	Comment noted.
715.	ONRC - W. Wood 3/26/01	Pg. 5 Para 1 and 2	Klamath River is listed as impaired under Section 303(d) of the CWA, and numerous fish kills have occurred in the mainstem of the Klamath River below Iron Gate Dam, ultimately as a result of poor water quality. The water quality studies mentioned in the FSCD are insufficient to assess Project effects and contrary to PacifiCorp's assertions, the Project clearly aggravates water quality problems, which is even acknowledged on Pg. 4-14 of FSCD. Also contrary to FSCD assertions, PacifiCorp can control or modify several important aspects of the Project that have an influence on water quality, including but not limited to; timing and amount of flow releases from Project dams, locations of penstock intakes, presence of Project dams, and protection of water quality in tributaries within the project area. Corrective actions utilizing controllable aspects such as these should be exhaustively researched as part of the relicensing process and application for 401 certification.	Comment noted. See water quality studies.
716.	ONRC - W. Wood 3/26/01	Pg. 5 Para 3 and Pg. 6 Para 1	**Serious concern.** The Project has extirpated anadromous fish above Iron Gate, primarily spring chinook and steelhead, and is a significant factor in the continuing decline and failed recovery of anadromous fish populations below Iron Gate. These results are due to the Project's blocking access to upstream habitat,	See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
			degrading habitat below Iron Gate, and a mitigation hatchery that has negatively impacted the remaining wild populations of salmon and steelhead. Congress specifically recognized the importance of the Klamath River when it passed the KRRA in 1986 and designated the lower Klamath River under the NWSRA for its outstanding anadromous fishery. **Therefore**, PacifiCorp should conduct a thorough investigation of Project effects on anadromous fish populations and habitat both above and below the Project area.	
717.	ONRC - W. Wood 3/26/01	Pg. 6 Para 2 and 3	Concerned about the operation of the Eastside and Westside facilities (pp. 2-15 and 2-16) because PacifiCorp has failed to mention that it is failing to follow long ago agreed upon precautions to halt the killing of endangered fish.	PacifiCorp maintains that the company has been in compliance with all ESA Terms and Conditions associated with the project, including Eastside and Westside.
718.	ONRC - W. Wood 3/26/01	Pg. 6 Para 6	In 1996 the BOR, as part of a consultation agreement under the ESA, agreed that its permittees would install and maintain US Fish and Wildlife approved entrainment reduction devices on the Eastside and Westside diversion canals no later than June 1, 2000. PacifiCorp and Cell Tech International (formerly the New Earth Company) have failed to install the necessary screens.	PacifiCorp maintains that the company has been in compliance with all ESA Terms and Conditions associated with the project, including Eastside and Westside.
719.	ONRC - W. Wood 3/26/01	Pg. 7 Para 2-7 and Pg. 8 Para 1-3	BOR is required to install a screen facility on the A-Canal by 2002 as directed by an amendment to USFWS's 1992 Biological Opinion. ONRC first took legal action regarding this canal in 1991, which led to the adoption of a 1992 Biological Opinion that initially gave the Bureau five years to resolve or eliminate the fish entrainment problems. That opinion has been repeatedly amended giving the federal agency and its private partners more and more time. After ten years of mostly inaction, ONRC, FOR, NEC, and SREP believes it's time to stop killing the fish. ONRC and others will be watching closely to see whether the 2002 extended deadline for screening the fish-killing A-	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			Canal is met.	
720.	ONRC - W. Wood 3/26/01	Pg. 8 Para 4	Conduct a study to assess the numbers, timing, size, and species composition of non-native fish that are passed from Project reservoirs and into the Klamath, especially below Iron Gate Dam. Should have recommendations on how to stop the spread of non-native fish from project reservoirs.	See Entrainment Section in study 1.10 *Fish Passage Planning and Evaluation.*
721.	ONRC - W. Wood 3/26/01	Pg. 8-9 Para 5	The instream flow section should include all contractual agreements under the Klamath River Basin Compact or ancillary agreements between PacifiCorp, the BOR, irrigators and other parties that affect water quantity in the Klamath River or pertain to water rights. PacifiCorp should modify its currently proposed instream flow studies to include the downstream of Keno and Iron Gate Dams. New FERC minimum instream flows below Iron Gate Dam should be higher than any new BOR minimum flows due to the inflow of year round tributaries and large springs within the Project area below Keno.	See Exhibit B of license application. See also study 1.12 *Instream Flow Analysis.*
722.	ONRC - W. Wood 3/26/01	Pg. 9 Para 2	PacifiCorp cannot rely upon the 115-page Fisher (July 2000) report as it doesn't assess the effectiveness of current fish ladders and screens, quantification of fish using current upstream passage facilitates or mortality rates for downstream passage.	Comment noted.
723.	ONRC - W. Wood 3/26/01	Pg. 9 Para 3 and Pg. 10 Para 1-2	Not opposed to the Fish Passage Advisory Team if the team is structured so that it has the resources to contribute meaningful input and the ability to make decisions. The structure is not mentioned in the FSCD. *See letter for what studies should incorporate.*	Comment noted. See Collaborative Process Protocol for Working Group structure.
724.	ONRC - W. Wood 3/26/01	Pg. 10 Para 3	**Iron Gate Hatchery** - An evaluation of IGH shouldn't be lumped under the responsibilities of the FPAT. It deserves an independent study unto itself. It should include past and current operations and its success at meeting the production and mitigation goals mandated by FERC.	See study 1.10 *Fish Passage Planning and Evaluation.*
725.	ONRC - W. Wood	Pg. 11 Para	The Cultural Resources section belies the fact that the	See Cultural studies 6.1 *Context Statement*, 6.2 *Cultural Resources*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	3/26/01	2	Klamath River is home to some of the most viable and active Native American cultures in the US. All Native peoples in the Klamath Basin have been negatively impacted by the Project degrading the quality and quantity of their fisheries resources, which in turn is a major impact on their cultural resources. PacifiCorp must modify its proposed cultural studies to address this issue and must consult with the affected Tribes and conduct interviews with tribal people. Literature search alone will not suffice.	*Pedestrian Survey and Inventory, Evaluation, and Impact Analysis* and 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
726.	ONRC - W. Wood 3/26/01	Pg. 12 Para 2	Archaeological sites that are currently inundated by project reservoirs should be discussed. Based on historical land use, surface geology, and the pattern of known sites, a reasonable estimation should be possible and must be attempted in order to properly assess the Projects effects.	Comment noted. See study 6.2 2 *Cultural Resources Pedestrian Survey and Inventory, Evaluation, and Impact Analysis.*
727.	ONRC - W. Wood 3/26/01	Pg. 12 Para 3	PacifiCorp proposes to explore the eligibility of project facilities under the National Register of Historic Places (NRHP). Listing any project facilities under the NRHP would be about as appropriate as listing the Three Mile Island Nuclear Reactor along with its hazardous nuclear waste and would add insult to injury to those people that have been negatively impacted by the Project.	Comment noted.
728.	ONRC - W. Wood 3/26/01	Pg. 12 Para 5	The FSCD proposed studies are not sufficient to evaluate the Project's effects on whitewater boating or the possibility of improved whitewater opportunities.	See study 3.1 *Recreation Flow Analysis.*
729.	ONRC - W. Wood 3/26/01	Pg. 13 Para 1	Modify the proposed Recreation User Survey of "lake" recreation to include questions regarding the impact of poor water quality on recreational experiences and should be expanded to incorporate river recreation.	PacifiCorp has included questions on algae effects in survey instrument for Iron Gate, Copco, and Boyle reservoirs. PacifiCorp will conduct a user survey for Project related recreation uses in the Project area.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
730.	ONRC - W. Wood 3/26/01	Pg. 13 Para 4 and 5	A comprehensive evaluation of economics relating to the Project is an obvious and vital part of the relicensing process and must not be omitted. Under the Bangor Decision, it is hard to imagine FERC making a binding decision on a new license without this info.	
731.	ONRC - W. Wood 3/26/01	Pg. 14 Para 2	Draw upon the Ayres study but also conduct a study of geomorphological impacts associated with the Project.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
732.	ONRC - W. Wood 3/26/01	Pg. 14 Para 4	A comprehensive evaluation of the flood risks and structural integrity of Project facilities is overdue. Safety is an important issue.	PacifiCorp monitors dam safety through FERC Part 12 inspections.
733.	American Fisheries Society Humboldt Chapter (AFSHC) - M. Knapp 3/27/01	Pg. 1 No. 1	Dams block fish passage from their historic range. Should consider re-establishment of anadromous fish runs into the upper Klamath River and consider future conditions rather than present degraded conditions.	See study 1.10 *Fish Passage Planning and Evaluation.*
734.	AFSHC - M. Knapp 3/27/01	Pg. 2 No. 2	Include alternatives of operations including dam decommissioning.	See study 1.10 *Fish Passage Planning and Evaluation.*
735.	AFSHC - M. Knapp 3/27/01	Pg. 2 No. 3	Use dam decommissioning as the baseline to measure the other alternatives.	PacifiCorp will not complete an alternatives analysis; FERC will do so as part of the NEPA process.
736.	AFSHC - M. Knapp 3/27/01	Pg. 2 No. 4	Boundary should be expanded to include the entire Klamath River. Project impacts upstream areas by blocking fish passage and impairing water quality for native fishes including the ESA listed Lost River and shortnose suckers.	See Exhibit G of the license application for the proposed new FERC Project boundary.
737.	AFSHC - M. Knapp 3/27/01	Pg. 2 No. 5	Section 10 of the Federal Power Act requires that relicensing be "conditioned on the inclusion of adequate and equitable fish and wildlife protection, mitigation, and enhancement measures." No significant changes were proposed.	Comment noted.
738.	AFSHC - M. Knapp 3/27/01	Pg. 2 No. 6	There are no clear-cut goals in the FSCD to enhance or restore fish populations in the Project area.	Comment noted.
739.	AFSHC - M. Knapp 3/27/01	Pg. 3 No. 7	Disagree with FSCD statement that PacifiCorp has little control over instream flows.	Comment noted.
740.	AFSHC - M. Knapp 3/27/01	Pg. 3 No. 7	River flows below Iron Gate Dam are often below FERC minimums.	Comment noted.
741.	AFSHC - M. Knapp	Pg. 3 No. 8	Project operations should not be contrary to the Wild	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/27/01		and Scenic River Act.	
742.	AFSHC - M. Knapp 3/27/01	Pg. 3 No. 9	Iron Gate Hatchery should be evaluated for success and failure as mitigation for the loss of habitat upstream of Iron Gate Dam.	See study 1.10 *Fish Passage Planning and Evaluation.*
743.	AFSHC - M. Knapp 3/27/01	Pg. 3 No. 10	FSCD needs to develop clear goals for water quality studies.	Comment noted.
744.	AFSHC - M. Knapp 3/27/01	Pg. 4 No. 11	FSCD needs to assess economic costs to the region due to reduced or lost fisheries caused by the Project.	See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1*and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study.*
745.	Klamath Water Users Association (KWUA) - L. Long 3/25/01	Pg. 1 No. 2	Upper Klamath Basin irrigators must be provided an adequate supply of irrigation water and drainage at all times. This should be included in the license application process.	Comment noted.
746.	KWUA - L. Long 3/25/01	Pg. 1 No. 3	The existing electric power contract between Copco/PacifiCorp and the US Department of the Interior (No. 14-06-200-5075) providing for irrigation and drainage pumping shall be renewed and extended under reasonable terms and conditions prior to expiration of the current agreement. This should be included in the license application process.	Comment noted. PacifiCorp disagrees that consideration of a contract renewal be included in the relicensing process.
747.	KWUA - L. Long 3/25/01	Pg. 1 No. 4	Should seek authorization for the construction and operation of hydroelectric generating facilities at Keno Dam. Maybe a joint venture between PacifiCorp and irrigators?	Comment noted. PacifiCorp is not pursuing hydroelectric generating facilities at Keno dam at this time.
748.	Klamath Forest Alliance (KFA) - F. Pace 3/26/01	Pg. 1 Para 2	Generally endorse and incorporate the comments made by other members of 'A Coalition for the Klamath Basin.' *See letter for list of members.*	Comment noted.
749.	KFA - F. Pace 3/26/01	Pg. 1 No. 1	PacifiCorp must identify, explain and address the control it exercises in relationship to Klamath River flows and the options that are feasible given this control.	See Exhibit B of the license application.
750.	KFA - F. Pace 3/26/01	Pg. 2 No. 2	PacifiCorp must provide adequate mitigation for the loss of anadromous fisheries above Iron Gate Dam as well as other fish and wildlife impact.	Comment noted.
751.	KFA - F. Pace	Pg. 2 No. 3	PC must demonstrate that the project that is relicensed	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	3/26/01		meets applicable water quality standards.	
752.	KFA - F. Pace 3/26/01	Pg. 3 No. 4	The economic issues and impact zone should be properly defined and addressed if PC performs economic impacts or a cost benefit analysis.	See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1*and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study.*
753.	KFA - F. Pace 3/26/01	Pg. 3 No. 5	Realistic options for increasing electric generation should be considered in formulating alternatives.	Comment noted.
754.	KFA - F. Pace 3/26/01	Pg. 4 Para 2	Advise and request that your studies and consideration of alternatives investigate and disclose options for Fall and Jenny Creeks and the small hydro facility associated with these creeks.	Comment noted. The Fall Creek hydro facilities are included within the general study area for most studies.
755.	KFA - F. Pace 3/26/01	Pg. 4 Para 3	What is the impact of the project on the interstate deer herd that exists on both side of Iron Gate Reservoir and specifically on habitat connectivity across the Klamath River?	Study 2.5 *Wildlife Movement/Connectivity Assessment* will address this question.
756.	KFA - F. Pace 3/26/01	Pg. 4 Para 4	The project area is a biological corridor and project impacts on this function must be investigated as a significant songbird migration up and down the Klamath Canyon has been documented.	Comment noted. See study 2.5 *Wildlife Movement/Connectivity Assessment*.
757.	KFA - F. Pace 3/26/01	Pg. 4 Para 5	KFA supports the tribal trust and treaty interests of the Klamath River tribes in healthy fisheries below Iron Gate Dam and the restoration of Spring chinook, fall chinook, steelhead and Pacific lamprey to the Upper Klamath Basin.	Comment noted.
758.	KFA - F. Pace 3/26/01	Pg. 5 Para 1	KFA would like to see PC get excited about the Klamath's potential for large-scale restoration.	Comment noted.
759.	Friends of the River (FOR) - J. Carville 3/26/01	Pg. 2 Para 2	PacifiCorp should promote a policy of conservation as opposed to only focusing on maximizing project operations to meet demand.	Comment noted.
760.	FOR - J. Carville 3/26/01	Pg. 2 Para 3, 4 and Pg. 3 Para 2 and Para 6	The following should be included in the FERC boundary: 1. Sections of the river between Upper Klamath Lake and Iron Gate. 2. Link River Dam. 3. The reach between J.C. Boyle powerhouse and Copco reservoir.	See Exhibit G of the license application for the proposed new FERC Project boundary.

Num.	Agency	Page	Comment Summary	Response Summary
			4. The 1.5 mile stretch between Copco 2 and Iron Gate and the river below Iron Gate Dam. 5. The reach between J.C. Boyle Dam and Powerhouse.	
761.	FOR - J. Carville 3/26/01	Pg. 2 Para 5	Screens should be implemented at the Link River Hydropower facility.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*
762.	FOR - J. Carville 3/26/01	Pg. 3 Para 2 and Para 6	The following should be included in the environmental analysis: 1. The three-mile stretch between Keno Dam and J.C. Boyle. 2. The reach between J.C. Boyle powerhouse and Copco reservoir. 3. The reach between J.C. Boyle Dam and Powerhouse.	These reaches are included in the Aquatic studies.
763.	FOR - J. Carville 3/26/01	Pg. 3 Para 3	No mention of the Eastside and Westside canal intakes on Link River dam.	PacifiCorp maintains that the company has been in compliance with all ESA Terms and Conditions associated with the project, including Eastside and Westside.
764.	FOR - J. Carville 3/26/01	Pg. 3 Para 3	Fails to provide a map showing locations of diversions on tributaries.	Comment noted.
765.	FOR - J. Carville 3/26/01	Pg. 3 Para 4	Discussion of section 2.4.8 is not contained in the FSCD at all.	
766.	FOR - J. Carville 3/26/01	Pg. 3 Para 4	Detailed information about the USBR/PacifiCorp contract should be included in order to understand how PacifiCorp's operations are limited.	See Exhibit B of the license application.
767.	FOR - J. Carville 3/26/01	Pg. 3 Para 5	The proposed studies should include an in depth analysis of all Project fish passage facilities.	See study 1.10 *Fish Passage Planning and Evaluation.*
768.	FOR - J. Carville 3/26/01	Pg. 4 Para 2	Info (percentage and cfs) should be provided on the amount of water diverted from tributaries to the Klamath River and from tributaries that feed into other tributaries such as Spring Creek.	Information relative to diversions of Spring Creek and Fall Creek is being included in the hydrology study report and draft and final applications.
769.	FOR - J. Carville 3/26/01	Pg. 4 Para 3	The amount of water released is only ONE factor that impacts water quality. The rate, frequency, duration, and timing of releases also effect temp and other water quality parameters.	Comment noted.
770.	FOR - J. Carville	Pg. 4 Para	A comprehensive water quality model should be	See studies 1.3 *Water Quality Analysis and Modeling Process* and 1.5

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	3/26/01	4	developed, as well as a sediment monitoring study.	*Analysis of Project Effects on Sediment Transport and River Geomorphology*.
771.	FOR - J. Carville 3/26/01	Pg. 4 Para 5	A Rapid Bioassessment of aquatic macroinvertebrates should be conducted to gather information on water quality.	See studies 1.11 *Macroinvertebrates Study* and 1.20 *Spring '2003 Macroinvertebrates Study*.
772.	FOR - J. Carville 3/26/01	Pg. 5 Para 2	The salmon runs must be restored for ecosystem functioning and for cultural needs and fishing rights of the Tribes.	Comment noted.
773.	FOR - J. Carville 3/26/01	Pg. 5 Para 3	Should do a pre-project study of anadromous and resident fisheries.	FERC does not require an assessment of pre-project conditions; however, PacifiCorp is modeling a "without hydroproject" fish passage scenario.
774.	FOR - J. Carville 3/26/01	Pg. 5 Para 4	Spawning gravel and availability of aquatic macroinvertebrates, which are essential to fish survival and reproduction should be included in the proposed studies about fish resources.	See studies 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology*, 1.11 *Macroinvertebrates Study* and 1.20 *Spring '2003 Macroinvertebrates Study*.
775.	FOR - J. Carville 3/26/01	Pg. 5 Para 5 and Pg. 6 Para 1 and 2	FOR recommends that IFIM be used in conjunction with professional judgement and the Range of Variability Approach (RVA) to assess instream flows.	See study 1.12 *Instream Flow Analysis.*
776.	FOR - J. Carville 3/26/01	Pg. 6 Para 3	Hydrologic models of both the pre- and post-Project system should be developed in order to better mimic the natural flow patterns.	See study 1.4 *Analysis of Project Effects on Hydrology*. PacifiCorp has not assessed pre-Project flow conditions; however, it has provided a "without hydroproject" assessment.
777.	FOR - J. Carville 3/26/01	Pg. 6 Para 4	Recommends an in depth geomorphology study in order to better understand how the Project impacts the shape/stability of the river channel and instream processes.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
778.	FOR - J. Carville 3/26/01	Pg. 7 Para 2	The Federal Power Act requires a reevaluation of past uses of river resources based on current societal values and existing laws and regulations when a project is relicensed. Therefore, an analysis of the allocation of the river's resources for recreation must be conducted.	Recreation studies include an assessment and evaluation of all recreation uses in the project area. See studies 3.2 *Recreation Visitor Surveys* and 3.3 *Recreation Visitor Surveys*.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
779.	FOR - J. Carville 3/26/01	Pg. 7 Para 3	In addition to a user survey, single flow and/or controlled flow studies should be conducted as part of an overall analysis of the whitewater resource between Link river Dam and the reach below Iron Gate Dam.	See studies 3.1 *Recreation Flow Analysis a*nd 3.2 *Recreation Visitor Surveys*.
780.	FOR - J. Carville 3/26/01	Pg. 7 Para 4	"Project Area recreational Activities and Facilities" section does not provide information about boating "put in" and "take out" locations, portage routes around project facilities, the ability to view river flow gauges or availability of flow information via a public phone number.	PacifiCorp intends to document Project related river access opportunities, and public flow information at each Project facility. PacifiCorp currently provides the J.C. Boyle release schedule via internet and PacifiCorp flow phone. Providing real-time flow data for other affected reaches will be considered as a potential enhancement depending upon the outcome of recreation flow analysis studies for each affected reach.
781.	FOR - J. Carville 3/26/01	Pg. 7 Para 5	The 4.5-mile stretch from J.C. Boyle Dam to J.C. Boyle Powerhouse should be included as a potential stretch for flow study to assess its value as a whitewater run.	See study 3.1 *Recreation Flow Analysis.*
782.	FOR - J. Carville 3/26/01	Pg. 7 Para 6	PacifiCorp should model the unimpaired hydrograph to determine the average number of annual boating days that would have existed in different water year types. This info should be used as part of the basis on which to develop Protection, Mitigation and Enhancement measures.	See study 1.4 *Analysis of Project Effects on Hydrology* for "without hydroproject" hydrograph.
783.	FOR - J. Carville 3/26/01	Pg. 8 Para 1 and 2	The Tribes are the most heavily impacted group of people by this project in that the core of the culture is being decimated. The core being anadromous fisheries. These anadromous fisheries should be listed as a cultural resource. Cultural studies should include interviews with the Tribes to gain a more complete picture.	Comment noted. See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
784.	FOR - J. Carville 3/26/01	Pg. 8 Para 3	A detailed description of each outstandingly remarkable value of the stretch below J.C. Boyle Powerhouse that has been designated a national Wild and Scenic River should be listed in the FSCD, as well as a description of how the Project will be operated to protect and enhance those outstandingly remarkable values.	PacifiCorp intends to determine the affects of current operations and potential operational scenarios on the river reach mentioned. These results will be presented in resources study report and the draft and final applications.
785.	FOR - J. Carville	Pg. 8 Para	An analysis of each dam's structural integrity,	PacifiCorp monitors dam safety through FERC Part 12 inspections.

Num.	Agency	Page	Comment Summary	Response Summary
	3/26/01	4	proximity to earthquake faults, and sediment build up within associated reservoirs should be conducted.	
786.	FOR - J. Carville 3/26/01	Pg. 9 Para 1	The National Environmental Policy Act (NEPA) requires an assessment of the past, present, and reasonably foreseeable environmental impacts of a hydropower project. Therefore PacifiCorp should conduct a cumulative impacts analysis.	It is expected that FERC will conduct a cumulative impact analysis as part of the NEPA process once they receive PacifiCorp's license application.
787.	FOR - J. Carville 3/26/01	Pg. 9 Para 2	NEPA also requires an evaluation of the full range of reasonable alternatives that would avoid the Project's environmental impacts.	Comment noted.
788.	FOR - J. Carville 3/26/01	Pg. 9 Para 3	PacifiCorp should consider the economic importance of the Klamath River trout fishery to the regional economy in a regional impact analysis. The near decimation of the spring-fun coho salmon should be included.	Comment noted.
789.	FOR - J. Carville 3/27/01	Additional Page Para 2	Section 7 of the National Wild and Scenic Rivers Act requires federal agencies to protect and enhance the outstanding remarkable values of designated rivers. Therefore PacifiCorp must work with the managing agency to ensure that this Project is managed in a manner consistent with Section 7.	Comment noted.
790.	FOR - J. Carville 3/27/01	Additional Page Para 3	Section 7 also requires that water resource projects upstream of a designated segment not unreasonable diminish river values. Therefore PacifiCorp must work with the managing agency to ensure that this Project is managed in a manner consistent with Section 7.s	Comment noted.
791.	American Rivers (AR) - B. Swift 03/27/01	Pg. 1 Para 3	AR is concerned with protection and restoration of fish habitat in the Klamath River basin.	Comment noted.
792.	AR - B. Swift 03/27/01	Pg. 1 Para 3	AR is concerned with establishment of self-sustaining native fish populations, both anadromous and resident.	Comment noted.
793.	AR - B. Swift 03/27/01	Pg. 1 Para 3	AR is concerned with reintroduction of anadromous fish above the Project dams - upstream and downstream passage throughout the Project area.	Comment noted See study 1.10 *Fish Passage Planning and Evaluation.*
794.	AR - B. Swift	Pg. 1 Para	AR is concerned about attainment of water quality	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
	03/27/01	3	standards.	
795.	AR - B. Swift 03/27/01	Pg. 1 Para 3	AR is concerned about restoration of flows and ecological processes essential to river health, including riparian and wetland functions.	Comment noted.
796.	AR - B. Swift 03/27/01	Pg. 1 Para 3	AR is concerned with protection and restoration of wildlife habitat and mitigation for project-related habitat losses.	Comment noted.
797.	AR - B. Swift 03/27/01	Pg. 3 Para 5 General comments	FSCD provides some detail on the existing conditions, but is deficient in several respects. 1. Relying on insufficient information to conclude that the Project has either no or insignificant effects. 2. Using 20-year old information without explaining adequacy. 3. Using other data that does not directly relate to the assertion or conclusion being made. 4. Inadequate analysis either completed or proposed to assess the impacts of the Project. 5. Evaluation of cumulative impacts has not been proposed.	Comment noted.
798.	AR - B. Swift 03/27/01	Pg. 4 Para 1 Specific Comments	PacifiCorp must provide additional detail of any anticipated changes and evaluate the effects of proposed boundary changes on resources in the basin and on PacifiCorp's ability to adequately mitigate for the Project effects.	See Exhibit G of the license application for the proposed new FERC Project boundary.
799.	AR - B. Swift 03/27/01	Pg. 4 Para 2	PacifiCorp should provide a detailed description of either the relationship between BOR and PacifiCorp or the extent of the influence of the BOR Project (i.e. current contract, operational limitations).	See Exhibit B of the license application.
800.	AR - B. Swift 03/27/01	Pg. 4 Para 3	Important to remember that if a new license is issued, FERC will be required to re-consult with the appropriate federal agencies on the proposed terms of the license to ensure compliance with the ESA. So while the Biological Opinions identify measures necessary to ensure that ongoing operations do not jeopardize the continued existence of listed species,	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			they should not be used to limit the range of alternatives and PM&E measures the PacifiCorp should evaluate during the pre-application phase.	
801.	AR - B. Swift 03/27/01	Pg. 5 Para 1 and 2	FSCD contains limited info related to geomorphology and any effects the Project may be having on such. Therefore, PacifiCorp should conduct an in-depth evaluation of the historic and current sediment regime throughout the entire Project area focusing on sediment composition, bedload movement, gravel deposition, sediment storage behind dams, and bedload changes below dams.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
802.	AR - B. Swift 03/27/01	Pg. 5 Para 3	Water quantity: The limited info in the FSCD is insufficient to determine and evaluate the effects of the Project's modifications to the flow regime in the Klamath basin. Further, it does not allow for a determination that operations are consistent with authorized uses of water.	See various water quality studies.
803.	AR - B. Swift 03/27/01	Pg. 6 Para 2	Water quality: Much of the information PacifiCorp relies on to characterize current water quality conditions within the Project boundary was collected anywhere from ten to twenty years ago. How adequate is this information?	See water quality studies.
804.	AR - B. Swift 03/27/01	Pg. 6 Para 2	PacifiCorp must conduct additional studies that are designed to assess the effects of the Project on water quality within the Project area and below Iron Gate Dam.	See water quality studies.
805.	AR - B. Swift 03/27/01	Pg. 6 Para 3	The assertion that the only relevant water quality issue related to fisheries that it could control occurs in two bypass reaches is misleading and inaccurate.	Comment noted.
806.	AR - B. Swift 03/27/01	Pg. 6 Para 6	To fulfill Clean Water Act and FPA requirements, PacifiCorp should provide a detailed description of current water quality standards and existing violations in waters affected by the Project.	See water quality studies.
807.	AR - B. Swift 03/27/01	Pg. 7 Para 2	Appendix C: All the data is limited to the period after the Project was constructed and does not provide any pre-project hydrograph. This info is needed to	See study 1.4 *Analysis of Project Effects on Hydrology* for "without hydroproject" hydrograph.

Num.	Agency	Page	Comment Summary	Response Summary
			understand the magnitude of change that has occurred in the basin.	
808.	AR - B. Swift 03/27/01	Pg. 7 Para 3	PacifiCorp has not proposed a comprehensive evaluation of the Project's effects on hydrology and has limited its proposal to IFIM and processes outside the licensing process. IFIM has well documented limitations and should be used along with other habitat evaluation methods.	An IFIM study was selected by the Aquatic Working Group. See study 1.12 *Instream Flow Analysis.*
809.	AR - B. Swift 03/27/01	Pg. 7 Para 6	A study is needed to determine how the existing artificial flow regime throughout and below the Project differs from the natural flow regime that would exist without the project.	See study 1.4 *Analysis of Project Effects on Hydrology.*
810.	AR - B. Swift 03/27/01	Pg. 8 Para 2	The FSCD consistently identifies current load factoring and peaking operations as an operational constraint. It would be appropriate to use current operations as a limitation on future operations.	Comment noted.
811.	AR - B. Swift 03/27/01	Pg. 8 Para 4	AR does not support PacifiCorp's determination that ramping is being adequately addressed in the FSCD and recommends that PC undertake a much more comprehensive analysis of ramp rates.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
812.	AR - B. Swift 03/27/01	Pg. 8 Para 7	The FSCD fails to discuss or evaluate the effects of flow fluctuations, in both reservoirs and downstream reaches, on riparian vegetation, wetlands, and hydrologic or biologic resources.	See studies 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam,* 1.16 *Evaluation of Effects of Flow Fluctuation on Aquatic Resources within the J.C. Boyle Peaking Reach* and 2.2 *Wetland and Riparian Plant Community Characterization*.
813.	AR - B. Swift 03/27/01	Pg. 9 Para 2	As contemplated by the Federal Power Act, fishway prescriptions are an integral part of relicensing, necessary to address the significant impacts of hydroelectric projects on fish migration. Such an effort is further supported by the Klamath River Restoration Act, passed by Congress in 1986. Therefore, we recommend that PacifiCorp focus considerable efforts on developing and conducting a comprehensive fish passage plan.	See study 1.10 *Fish Passage Planning and Evaluation.*
814.	AR - B. Swift	Pg. 9 Para	Fish Passage Conditions: AR does not support much of	Comment noted. See study 1.10 *Fish Passage Planning and*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	03/27/01	3	the qualitative information regarding the effectiveness of existing facilities, nor the limited scope of the evaluation.	*Evaluation.*
815.	AR - B. Swift 03/27/01	Pg. 9 Para 4 and Pg. 10 Para 1	The evaluation of fish passage systems must be completed during the consultation phase to ensure that there is sufficient information for the federal fisheries agencies to properly execute their fish passage responsibilities under Section 18 of the Federal Power Act.	Comment noted.
816.	AR - B. Swift 03/27/01	Pg. 10 Para 2-8 and Pg. 11 Para 1-2	*See letter for the list of factors that a comprehensive fish passage study plan must evaluate and include.*	See study 1.10 *Fish Passage Planning and Evaluation.*
817.	AR - B. Swift 03/27/01	Pg. 11 Para 3	Hatchery: A hatchery program must evolve with development of anadromous fish reintroduction strategies, not independent of it. Finally, an analysis of how successful the hatchery program has been in meeting PacifiCorp's mitigation obligations should be included.	See study 1.10 *Fish Passage Planning and Evaluation.*
818.	AR - B. Swift 03/27/01	Pg. 11 Para 4	Reservoirs: There is no discussion in the FSCD about the riverine habitat that was inundated by the Project or the fish populations that inhabited those river reaches prior to project construction. This info is essential for evaluating possible operational scenarios that would provide additional mainstem riverine habitat and for developing PM&E measures that adequately address Project impacts, including ongoing inundation of aquatic habitat.	This issue will be given consideration in the fish passage planning process (study 1.10) with respect to the length of reaches inundated, but will not look at pre-project conditions.
819.	AR - B. Swift 03/27/01	Pg. 11 Para 5 and Pg. 12 Para 1	Recreation: The FSCD fails to provide a description of operations at J.C. Boyle designed to provide recreation opportunities downstream. This info will provide important background info for the proposed Recreation Flow Analysis Study.	See study 3.1 *Recreation Flow Analysis* .
820.	AR - B. Swift 03/27/01	Pg. 12 Para 1	There is no analysis of how current operations are consistent with the Wild and Scenic River designation, the effect on the outstanding resource values, or what is necessary to ensure that they are being adequately protected.	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
821.	California State Grange - L. Bergeron 01/23/01	Pg. 1 Para 3	The State Grange believes that all dams on the Klamath River should remain functional and another dam should be considered for water storage.	Comment noted.
822.	California State Grange - L. Bergeron 01/23/01	Pg. 1 Para 3	Present dams should be utilized for electrical production and should be integrated to maintain flood control on the Klamath River.	Comment noted.
823.	Interactive Citizens United (ICU) - R. Gierak 01/25/01	Pg. 1 Para 4	All of dams on the Klamath River are a valuable asset to the populace not only for the production of electricity, but also for their benefits to agriculture and flood control.	Comment noted.
824.	ICU - R. Gierak 01/25/01	Pg. 1 Para 4	The dams also protect fish by maintaining downstream water levels during dry periods in a manner unheard of before the dams were built.	Comment noted.
825.	ICU - R. Gierak 01/25/01	Pg. 1 Para 5	The ICU holds that the imposition of new regulations under the ESA should not preclude the granting of a license to established dams.	Comment noted.
826.	Trout Unlimited (TU) - C. Bonham 03/26/01	Pg. 2 Para 3 and Pg. 3 Para 1	Lack of Specificity and Impermissible Assumptions: The FSCD as a whole lacks detailed descriptions of existing conditions, affected resources, and proposed studies. Moreover, the FSCD often cursorily rests on previously conducted studies. In some cases, the document relies on previously conducted studies to assert unsupportable assumptions.	Comment noted.
827.	TU - C. Bonham 03/26/01	Pg. 3 Para 2	Lack of Specificity and Impermissible Assumptions: The FSCD fails to discuss the adequacy of water quality data collected over twenty years ago, or provide specific reference citations.	Comment noted.
828.	TU - C. Bonham 03/26/01	Pg. 3 Para 3	Lack of Specificity and Impermissible Assumptions: The fish passage section of the FSCD appears to rest entirely on data generated by the PacifiCorp/Karuk, or "FishPro", study recently conducted. Here, the FSCD characterizes the FishPro study as "an assessment of the current fish passage conditions in the upper river[,]" but then extrapolates a simple listing of existing physical structures to conclude that fish passage conditions "are successful in allowing in-river	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			movement." Such a pronouncement of success is odd given that the FSCD immediately post states that the Link River Dam passage structure is poor, the J.C. Boyle passage structure's effectiveness has not yet been determined, and Copco 1 and 2 and Iron Gate have no fish passage structure.	
829.	TU - C. Bonham 03/26/01	Pg. 4 Para 2	Lack of Specificity and Impermissible Assumptions: The FSCD presents information "adequate to describe general, and some specific, conditions in Project water[,]" the information provided is narrow in perspective. 1. A simple list of existing conditions neglects to give adequate attention to the causal link between Project operations since the original 1956 licensing and current resource conditions. 2. All components of the FERC three-stage consultation process must focus on more than simply "Project waters" but also Project-affected waters.	Comment noted.
830.	TU - C. Bonham 03/26/01	Pg. 4 Para 3	Lack of Specificity and Impermissible Assumptions: TU recommends that PacifiCorp adhere to a guiding principle that all future assertions and decisions made in the Klamath relicensing rely on clearly detailed and substantial evidentiary support.	Comment noted. Completion of collaboratively agreed upon study plans should provide such support.
831.	TU - C. Bonham 03/26/01	Pg. 5 and 6	Confined Framework(regarding flow control, BOR/PacifiCorp operational flexibility): TU recommends the following: a. Detail the contract between BOR and PacifiCorp. b. Describe contract provisions that potentially allow/or limit PacifiCorp operational flexibility. c. Describe the BOR contract's application to each individual mainstem dam and storage reservoir, if any. d. Provide any additional basis for claiming its operational freedoms are bound, and describe the effect of any such constraint.	See Exhibit B of the license application for related information. See also study 1.4 *Analysis of Project Effects on Hydrology*.

Num.	Agency	Page	Comment Summary	Response Summary
			e. Describe the relations between its BOR contract, and any other operational constraints, and its FERC license, including but not limited to synchronized expiration of the license and contract in 2006. f. Develop models that demonstrate its operational flexibility within the existing constraints, and analyze a wide range of flow scenarios and potential operations. g. Discuss the effects, if any, of asserted operational constraints on its proposal to re-evaluate minimum flow requirements in all Project-affected reaches of the Klamath River.	
832.	TU - C. Bonham 03/26/01	Pg. 7 and Pg. 8 Para 1	Alternatives Analysis: Coho are listed as an ESA threatened species and NMFS proposed Klamath Mountain Province Steelhead for listing. It's possible that the present hydropower facilities and operations cannot provide effective upstream and downstream anadromous fish passage. The existing hatchery mitigation operations for Copco 1 and 2 and Iron Gate have proved insufficient. Thus, an analysis of various Project decommissioning alternatives that evaluates a full range of decommissioning variations that in turn fully address the *impacts and benefits* of decommissioning or substantially modifying Project facilities is the logical focus.	Comment noted.
833.	TU - C. Bonham 03/26/01	Pg. 8 Para 2	Water Quality and Use: PacifiCorp should employ the FERC three-stage consultation process to first determine when and where water quality standards are and are not being met. PC should also determine the level of causation between the Project's adverse water quality impacts and areas of standards nonattainment.	See study 1.3 *Water Quality Analysis and Modeling Process.*
834.	TU - C. Bonham 03/26/01	Pg. 8 Para 3	Water Quality and Use: The FSCD largely fails to capitalize on the early opportunity to perform studies and present data. Postponement of the necessary information identification, evaluation, and presentation	Comment noted. PacifiCorp has taken great effort to complete study work for inclusion in the FERC license application.

Num.	Agency	Page	Comment Summary	Response Summary
			could lead to a lengthier relicensing.	
835.	TU - C. Bonham 03/26/01	Pg. 9 and 10	TU recommends PacifiCorp undertake additional actions with respect to water quality and water use issues before commencing the second portion of the FERC three-stage consultation process. *See letter for these additional actions.*	See water quality studies.
836.	TU - C. Bonham 03/26/01	Pg. 10 Para 3 and Pg. 11 Para 1	Fish and Aquatics: The FSCD fails to adequately detail the effects of the Project's existence and operations on the condition of Klamath river aquatic resources. *See letter for the minimum considerations to be given to fishery issues.*	See Aquatic studies.
837.	TU - C. Bonham 03/26/01	Pg. 11 Para 2	Fish Populations and Habitat Typing: A broad overview approach risks the validity of the data collected because without a focused study approach, focused study goals, and focused study objectives fish assessment information will not depict the connection between the Project and the status of native fish stocks, including trout and salmon.	Comment noted.
838.	TU - C. Bonham 03/26/01	Pg. 12 Para 2	Instream Flow Requirements and appropriate Study Methodologies: The FSCD provides no insight as to how PacifiCorp will fulfill its intent to re-evaluate all minimum flow requirements. This is troubling because the FSCD asserts that certain minimum instream flows are already sufficient. Also, relying on already conducted instream flow studies (IFIM) is insufficient for defining instream flow requirements. Previously conducted flawed studies should not be re-used.	Comment noted. See study 1.12 *Instream Flow Analysis.*
839.	TU - C. Bonham 03/26/01	Pg. 13 Para 3 and Pg. 14 Para 1	Upstream and Downstream Fish Passage: The FSCD's 1984 numbers, the J.C. Boyle fish ladder was facilitating downstream passage for trout concluding that to varying degrees all existing Project passage structures are successful. Yet, ODFW indicates that due to a combination of design and J.C. Boyle Project operation, fish passage has been reduced by as much as 90%.	Comment noted.
840.	TU - C. Bonham	Pg. 14 Para	TU recommends that the FSCD reconsider upstream	See study 1.10 *Fish Passage Planning and Evaluation.*

Num.	Agency	Page	Comment Summary	Response Summary
	03/26/01	2	and downstream fish passage analysis so that full consideration be given to a suite of parameters. *See letter for these parameters.*	
841.	TU - C. Bonham 03/26/01	Pg. 14 Para 3 and Pg. 15 Para 2	Pursuant to Section 18 of the Federal Power Act, PacifiCorp's development of fish passage studies throughout this relicensing must recognize that Congress has always intended for fishway prescriptive authority to rest with federal agencies other than FERC, like USFWS and NMFS. Tribal fish passage recommendations should receive equal weight from PacifiCorp.	Comment noted.
842.	TU - C. Bonham 03/26/01	Pg. 15 Para 3	Entrainment: Entrainment in the Project is worthy of a stand-alone analysis. A lack of screening at Eastside and Westside diversions from Link River Dam is particularly perplexing given the endangered species concerns associated with Klamath Lake.	See study 1.10 *Fish Passage Planning and Evaluation* – Entrainment section.
843.	TU - C. Bonham 03/26/01	Pg. 15 Para 4	Ramping: Sudden changes in river flow from hydroelectric powerhouses affects fish and aquatic resources and is of substantial concern within the Klamath Project.	See study 1.7 *Evaluation of Ramping Downstream of Link Dam, Keno Dam, J.C. Boyle Dam, J.C. Boyle Powerhouse, Copco No. 2 Dam, and Iron Gate Dam.*
844.	TU - C. Bonham 03/26/01	Pg. 16 Para 3	FSCD does not discuss naturally producing redband trout and habitat information within the J.C. Boyle section, and questions whether such oversight is in contradiction to ODFW management objectives.	Comment noted.
845.	TU - C. Bonham 03/26/01	Pg. 16 Para 3	Grazing: The FSCD does not provide any mention of land management activities in Project areas that affect water quality thus fisheries and aquatic resources. CDFG's Wild Trout Management Plan considers the impacts of grazing on Shovel Creek severe.	While grazing management is not part of PacifiCorp's hydro operations, the Company has worked cooperatively with federal agencies and private sportsman organizations to protect sensitive riparian areas from over grazing. Riparian fences have been constructed on PacifiCorp's property on Shovel Creek and along the Klamath River in this vicinity. Riparian fences on the lower portion of Shovel Creek prevent cattle from accessing the lower 2.7 miles of riparian area. Comments from CDFG's Wild Trout Management Plan regarding the severe grazing on Shovel Creek refer to the headwaters, and not to PacifiCorp land.
846.	TU - C. Bonham	Pg. 17 Para	ODFW: PacifiCorp should not assert that ODFW	Comment noted. PacifiCorp acknowledges ODFW's position.

Num.	Agency	Page	Comment Summary	Response Summary
	03/26/01	3	believes that is would not be "feasible or prudent to attempt to re-establish anadromous fish runs in the Klamath River, now or in the future." ODFW believes that the relicensing effort is an important opportunity to re-examine the feasibility of anadromous fish reintroduction.	
847.	TU - C. Bonham 03/26/01	Pg. 18 Para 2	CDFG: TU requests that PacifiCorp provide more than a list of WTP goals and instead detail the relationship between Project operations and the attainment or non-attainment of all CDFG WTP objectives for the Klamath River WTA waters.	It is a FERC requirement that the new license align with the goals of all existing management plans. Hence PacifiCorp will propose a license consistent with CDFG WTA objectives.
848.	TU - C. Bonham 03/26/01	Pg. 18 Para 3	Native salmon and steelhead below Iron Gate: The Project has had a devastating impact on native salmon and steelhead by completely blocking migratory fish movement into the upper Klamath River Basin. The Klamath Project also has an equally alarming impact to currently existing native salmon and steelhead below Iron Gate.	Comment noted.
849.	TU - C. Bonham 03/26/01	Pg. 19 Para 2	Hatchery operations: The FSCD only commits two paragraphs to describing the Iron Gate Hatchery and Fall Creek Hatchery operations. TU questions the assertion that Iron Gate Hatchery has had only two known serious problems and requests that PacifiCorp provide support for its assertion.	See study 1.10 *Fish Passage Planning and Evaluation* for hatchery information.
850.	TU - C. Bonham 03/26/01	Pg. 19 Para 3	Hatchery operations: The FSCD states the ongoing Klamath River Restoration Act process will address conflicts between hatchery operations and native wild fish. TU supports that review, but recommends that the FERC relicensing is a good venue from which to also analyze the relationship between hatchery operations and native wild fish in the Klamath River Basin.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation* for hatchery information.
851.	TU - C. Bonham 03/26/01	Pg. 19 Para 4	Existing and future Endangered Species Act Biological Opinions: Because PacifiCorp asserts that existing federal ESA regulatory constraints largely restrict its control over river flow in Project reaches and Project-affected reaches, TU recommends that PacifiCorp	See Exhibit B of the license application.

Num.	Agency	Page	Comment Summary	Response Summary
			better describe each of these alleged constraints.	
852.	TU - C. Bonham 03/26/01	Pg. 20 Para 1	Existing and future Endangered Species Act Biological Opinions: The FSCD provides insufficient insight into how the BiOps do or do not restrict PacifiCorp's Project operations. Nor does the FSCD present any information on how these BiOps might prevent PacifiCorp from implementing various protection, mitigation, or enhancement measures pursuant to relicensing.	See Exhibit B of the license application.
853.	TU - C. Bonham 03/26/01	Pg. 20 Para 2	Macroinvertebrate aquatic resources: Benthic macroinvertebrates serve as important indicators of water quality conditions among other things. The FSCD overlooks this characteristic and opportunity.	Comment noted. See studies 1.11 *Macroinvertebrates Study* and 1.20 *Spring '2003 Macroinvertebrates Study*.
854.	TU - C. Bonham 03/26/01	Pg. 20 Para 3	Recreation: The Klamath River provides a variety of rec. opportunities in both Project and Project-affected waters. TU recommends that PacifiCorp employ a more collaborative approach towards future recreational demand and use surveys, and recreational management decisions. Also recommends where appropriate recreational studies be monitored for potential physical, chemical, and biological impacts (positive and negative) on aquatic and ecological resources.	PacifiCorp has completed a collaborative process to develop recreation studies.
855.	TU - C. Bonham 03/26/01	Pg. 21 Para 1-3	Wild and Scenic River Acts (WSRA): A thorough and searching review of whether the Klamath Project in any manner degrades any Klamath specific ORV (outstandingly remarkable values), or general WSRA ORV, is reasonable and prudent during the relicensing.	Information collected through the numerous relicensing studies will greatly assist the assessment of Project impacts on ORVs.
856.	TU - C. Bonham 03/26/01	Pg. 21 Para 4 and Pg. 22 Para 1	FERC Boundaries: TU requests clarification on what exactly PacifiCorp expects the FERC boundary revision to involve. Why does the present boundary exclude large portions of the mainstem Klamath River?	See Exhibit G of the license application for the proposed new FERC Project boundary.
857.	TU - C. Bonham 03/26/01	Pg. 22 Para 2 and 3	Cumulative impacts: TU recommends that a comprehensive cumulative impact analysis be developed. TU also recommends the development and implementation of a watershed analysis that adequately	FERC may consider cumulative impacts as part of their NEPA process. PacifiCorp currently does not plan on adding generation to the Project. Future operations will be developed in light of an appropriate balance of natural, economic, and social resources.

Num.	Agency	Page	Comment Summary	Response Summary
			identifies and incorporates direct and indirect cumulative impacts resulting from past, present, and reasonably foreseeable future land and water management practices as they relate to the Project and Project operations. Finally, TU recommends that a reasonably foreseeable future action that must be analyzed is the potential cumulative impact from evolving energy market situations in the West, Pacific Northwest, and California that may motivate PacifiCorp to modify operations in an environmentally adverse manner.	
858.	TU - C. Bonham 03/26/01	Pg. 23 Para 1	Cultural resources: In fifteen pages the FSCD makes no substantive mention of anadromous fish being a cultural resource for Native Americans.	Comment noted.
859.	TU - C. Bonham 03/26/01	Pg. 23 Para 2	Collaborative relicensing benefits: Due to the magnitude and complexity of relicensing issues, TU recommends that PacifiCorp employ a more collaborative approach.	Agree – see Relicensing Process Protocol for the Klamath collaborative process
860.	Northcoast Environmental Center (NEC) - T. McKay 03/26/01	Pg. 1 Para 2	Of special concern to NEC are the direct impacts the Project has on the aquatic biodiversity of the Klamath River basin, especially lesser known species such as the white and green sturgeon, Pacific lamprey, candle fish and the endangered sucker fish.	Comment noted.
861.	NEC - T. McKay 03/26/01	Pg. 2 Para 3	Another concern is that North America is losing freshwater species at an alarming rate. NEC requests that PacifiCorp give special attention in its studies to freshwater species of plants and animals in identifying little known species put at risk by the continuing decline of water quality and quantity in the Klamath River basin, and to address any species that have become extirpated in the Klamath River since the inception of the hydro projects, and how PacifiCorp proposed to mitigate these losses.	Comment noted. See aquatic studies.
862.	NEC - T. McKay 03/26/01	Pg. 2 Para 6	NEC believes that PacifiCorp should study the way in which other agencies, the BOR, effects the ability of PacifiCorp to meet its legal mandates regarding the	Comment noted. The operational relationship between BOR and PacifiCorp is described in Exhibit B of the license application.

Num.	Agency	Page	Comment Summary	Response Summary
			Clean Water Act and the Endangered Species Act.	
863.	NEC - T. McKay 03/26/01	Pg. 2 Para 6	Include whether or not PacifiCorp should be identified as a point source for the release of pollutants into the Klamath River at Iron Gate Dam.	See water quality studies.
864.	NEC - T. McKay 03/26/01	Pg. 2 Para 6	How will PacifiCorp meet its legal requirements for fish passage at all of its Klamath River facilities? Include all fishery species, as PacifiCorp facilities fatally entrain tens of thousands of endangered suckers annually at its Link River power generating facilities.	PacifiCorp's proposal to meet fish passage requirements will be presented in Exhibit E of the license application.
865.	NEC - T. McKay 03/26/01	Pg. 3 Para 1	How will post-relicensing PacifiCorp Klamath Hydroproject meet or complement the letter and/or intent of these other relevant statutes: the Federal Power Act, the Klamath River Restoration Act, the federal Wild and Scenic Rivers Act, the state Porter-Cologne Water Quality law or other relevant statutes?	
866.	Rocky Mountain Elk Foundation - R. Nelson 02/18/01	Pg. 1	Wildlife studies §6.5 - It is important to look at wildlife harassment and restrictions to movement caused by the project and possibly as important the satellite development brought about by the presence of the project. Big game migration routes, corridors, road crossing problems can occur as the result of project and related activities. If big game species are being affected, are there PM&E measures that could alleviate or compensate for those problems?	See study 2.5 *Wildlife Movement/Connectivity Assessment.*
867.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 2 Para 1	Fish screens on the hydropower diversions for the Westside and Eastside Projects would be prohibitively expensive and the Projects in question are extremely old, (generating relatively little electricity Westside .75 MW and Eastside 3.2 MW), it makes sense to decommission the two Projects. Could they generate power for another 50 years without major overhaul and retrofit? *See letter for benefits of decommissioning.*	Comment noted.
868.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 2 Para 3	Fish passage for salmon at J.C. Boyle needs to be addressed. Recommends redesign and implementation of ladder(s) that would accommodate both trout and salmon, possibly steelhead should be included also.	See study 1.10 *Fish Passage Planning and Evaluation.*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
869.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 2 Para 4	Fall Creek powerhouse was built in 1906. Does it need upgrading and protection?	Fall Creek was built and modified to meet the changing local electrical needs over the years before being limited by the natural resource. Preliminary engineering reviews suggests future changes are possible but won't be finalized until other effecting parameters gain clarity in the licensing process. Historical protection will be one of those parameters which will influence the final proposal for any upgrade.
870.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 2 Para 4	The exotic fish in Spring Creek need to be either eliminated or prevented from entering Fall Creek.	Comment noted.
871.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 2 Para 5	Copco 1 dam and Copco 2 dam should be checked for possible breaching or failure.	Comment noted. PacifiCorp monitors dam safety through FERC Part 12 inspections.
872.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 3 Para 1	It would be beneficial to have gates on Iron Gate Reservoir and to have upstream fish passage. Why has power generation at Iron Gate gone down from 19.3 MW in 1991 to 18 MW now? Does it indicate decreased operating efficiency, changes in operating plan, poor reporting, or problems to be addressed? Requests explanation.	Comment noted. The capacity at Iron Gate powerhouse has always been 18 MW. Not sure where 19.3 MW came from.
873.	ARC-EN-CIEL - A. Ward 03/25/01	Pg. 3 Para 3	Requests removal of the diversion dam on Jenny Creek located Township 48 N and Range 5W. The water impounded now is wasted. Possibly removal would provide more water to the Trinity River system for ESA purposed, and more retained water in the Upper Klamath basin.	Comment noted.
874.	City of Klamath Falls - J. Ball 02/01/01	Pg. 1 Para 3	Continued operation of Link River dam is of crucial importance to the City and regional economic health, to recreational access/use of Upper Klamath Lake and to the general welfare of those portions of the City adjoining the lake.	Comment noted.
875.	City of Klamath Falls - J. Ball 02/01/01	Pg. 1 Para 4	The Link River trail is an important recreational point for the community and may generate more recreational use than any other recreational component in the relicensing area. Improvements to the trail should be considered, specifically the addition of a trail head at the south end adjoining downtown.	Comment noted.
876.	City of Klamath Falls - J. Ball 02/01/01	Pg. 2 Para 2	The eastside and westside project facilities are located entirely within the Klamath Falls City limits and the	Comment noted.

Num.	Agency	Page	Comment Summary	Response Summary
			City is the principal property owner along both sides of the Link River canyon. As such, the City's Comprehensive Plan, Community Development Ordinance and Parks Master Plan should be consulted as part of the study.	
877.	City of Klamath Falls - J. Ball 02/01/01	Pg. 2 Para 3	The conclusion that the Link River powerhouses are visually compatible with the adjoining river homes may be open to debate.	Comment noted.
878.	Humboldt County, Board of Supervisors - J. Smith 03/13/01	Pg. 1 Para 3	The studies in the FSCD should be expanded to look at impacts of the project to recreation (fishing and rafting), water quality, fisheries resources, and economic impacts below Iron Gate Dam.	See expanded geographic scopes in various recreation, aquatics and economic studies.
879.	Siskiyou County, Dept. of Public Works - D. Gravenkamp 05/07/01	Pg. 1 Para 1 and 2	Addresses the need for an improved road around Iron Gate Lake. Facility is no longer adequate to handle the increased traffic. Horizontal and vertical alignment need improvement. The traveled way lacks adequate surfacing and shoulders. Several areas have slipped and the existing bridge over Jenny Creek needs replacement.	Comment noted. See also study 4.2 *Inventory of Klamath Hydroelectric Project Roads.*
880.	Siskiyou County Farm Bureau - M. Armstrong 04/30/01	Pg. 1 Para 1 and 2	The dams improve the quality of life, the local economy and the physical environment. Any proposal to remove the Copco/Iron Gate facilities to enable fish passage to the upper Basin would not serve the larger public interests.	Comment noted.
881.	Siskiyou County Farm Bureau - M. Armstrong 04/30/01	Pg. 1 Para 1 and 2	There are many native and introduced fish species that have adapted to the conditions above Copco/Iron Gate and provide substantial economic benefit to the local economy. All of which would be impacted by change of the existing hydrological regime and the reintroduction of salmon.	Comment noted.
882.	Siskiyou County Visitor's Bureau - J. Steele 03/27/01	Pg. 1 Para 1	Commercial rafting and other tourism-related businesses in the county are of significant economic importance. The water release schedule for 2001 and the relicensing of the J.C. Boyle power plant are of vital importance to Siskiyou County. Dependable water flows from Spring Island to Copco Lake are needed.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
883.	Siskiyou County Visitor's Bureau - J. Steele 03/27/01	Pg. 1 Para 4 #1	The continued release of sufficient water flows for rafting and kayaking is needed. The minimum flow needed is 1500 cfs.	See study 3.1 *Recreation Flow Analysis.*
884.	Siskiyou County Visitor's Bureau - J. Steele 03/27/01	Pg. 1 Para 4 #2	The timely release of water, including the availability of timely information about water release. Rafting companies need water release from 10 am to 2 pm, seven days a weeks (which was maintained prior to Scottish Power's acquisition of PacifiCorp in 1998).	See study 3.1 *Recreation Flow Analysis.*
885.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 1 Para 1 #1	Social and economic impacts from operation of the facilities to citizens of Siskiyou County are an issue. Siskiyou County could be impacted by a loss of tax revenues.	Comment noted. See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase I* and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study*.
886.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 1 Para 1 #2	Siskiyou County would like the lands along the Klamath River, owned by PacifiCorp, maintained in private ownership. Land sales and exchanges proposed or contemplated between PacifiCorp and others are an issue. Siskiyou County has an informal policy of no net loss of private lands due to the potential impact on County tax revenue.	PacifiCorp is reviewing its present land ownership to determine the highest and best use of its lands on and along the Klamath. For lands that are determined surplus, the Company will look at all options including sales to private or public interests. PacifiCorp will work with and keep the Siskiyou County Board of Supervisors informed of any potential disposition of PacifiCorp's real property holdings in Siskiyou County.
887.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 1 Para 1 #3	There is an opportunity for potential diversion of Klamath River water to Shasta Valley in return for allowing high quality Shasta River water to flow directly, without significant diversion in Shasta Valley, to the Klamath River. Has this diversion right been explored?	PacifiCorp believes that it is not the company's responsibility to explore the diversion rights of other parties. However, PacifiCorp will support the efforts of SCBS to do so and will consider the value of this measure in developing potential protection, mitigation and enhancement measures.
888.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 1 Para 1 #4	Siskiyou County would like to see no net loss of power produced by the facilities, and a portion of the power produced in Siskiyou county allocated for Siskiyou County as the County of Origin. Power production should be maximized in the operation of these facilities.	Comment noted.
889.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #1	A socioeconomic impact analysis of the proposed and alternative terms and conditions in the permit application. Federal and State agencies participating in the licensing process should participate in the sharing of costs of the studies and analysis needed to assess	See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase I* and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study*. The company also supports the idea of a cooperative larger Klamath Basin study.

Num.	Agency	Page	Comment Summary	Response Summary
			their proposed terms and conditions.	
890.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #2	What are the point(s) of diversion that would be feasible to divert water to Shasta Valley/Ager and the facilities needed to divert the water, including the cost and compensation required?	This request is best addressed in the development of PM&E measures.
891.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #2	What is the ability and cost to modify outflow locations from which water can be released from Iron Gate to the Klamath River from different levels of the reservoir?	Following completion of the water quality studies, PM&E measures will be developed to address impacts. See study 1.3 *Water Quality Analysis and Modeling Process.*
892.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #2	What is the water quality at incremental levels of the reservoirs and in the sediments of each reservoir?	See studies 1.1 *Water Quality Analysis and Modeling Process*, 1.2 *Monitoring of Water Temperature and Water Quality Conditions in the Project Area* and 1.3 *Water Quality Analysis and Modeling Process*.
893.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #2	What is the quality of background water coming into the system and past natural background water?	See study 1.1 *Water Quality Analysis and Modeling Process.*
894.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #2	What are the potential actions that could improve water quality in the facilities and downstream of Iron Gate?	Following completion of the water quality studies, PM&E measures will be developed to address impacts.
895.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #2	What are the effects on groundwater levels and water quality from the operation of the reservoir facilities?	Although PacifiCorp is conducting numerous water quality studies, PacifiCorp will not be studying reservoir effects on groundwater.
896.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Recommended Study #3	What is the additional capacity for energy production and the opportunity costs foregone by not adding additional energy capacity?	PacifiCorp currently does not plan to add capacity beyond the ability to do so with current generating facilities. Any loss of generation proposed for the new license and how the company will replace it will be described in the license application.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
897.	Siskiyou County Board of Supervisors - B. Hoy 03/20/01	Pg. 2 Para 1 Additions to terms and conditions of renewal license application	1. The continuation of the terms and conditions that refer to the diversion of water from the Klamath River into the Shasta Valley/Ager area, except for the annual limitation and maximum rate of diversion, subject to vested rights, which expire on March 1, 2006, and any and all other water rights and permits to be continued with the new permit. 2. All fish produced and released at the Iron Gate Hatchery should be marked or tagged. PacifiCorp should advocate this policy and by FERC for other hatcheries producing anadromous fish as well so that harvest impacts to natural fish populations are minimized.	Comment noted. See study 1.10 *Water Quality Analysis and Modeling Process* – Fish Hatchery section.
898.	Mount Shasta Chamber of Commerce & Visitors Bureau - T. Moore 03/22/01	Pg. 1	The local rafting and kayaking business along with private party interest need to be protected through the continued efforts of allowing downstream water flows of at least 1500 cfs from May through October, which allows people to enjoy our scenic backcountry waterways.	Comment noted.
899.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 1 Para 3	FSCD Section 7.1 - The FSCD does not state that the Native American groups with a potential interest in the Project area (the Klamath Tribes, Shasta, Quartz Valley Reservation, Yurok, Hoopa and Karuk) are Federally recognized Tribal Governments. Section 800.2(c)(5) does allow Federal license applicants to initiate contact with the SHPO and other consulting parties on its behalf, the FERC still needs to be mindful of its government-to-government responsibility when consulting such Indian tribes as required under Section 800.2 (c)(3)(iii)	Comment noted. PacifiCorp recognizes the Klamath Tribes, Karuk tribe, Hoopa tribe and Yurok tribe as federally-recognized Tribal governments.
900.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 1 Para 4	FSCD Section 7.1 Line 4 Para 3 - Cites the 1986 version of the regulations implementing Section 106 of the National Historic Preservation Act. Those regulations have been revised twice since 1986. Recommend that the reference be changed from "ACHP 1986" to "ACHP 2001".	Comment noted.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
901.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 1 Para 5	FSCD Section 7.1.1 - Regarding initial definition of the APE as described here, if the FERC wishes to authorize PacifiCorp to initiate consultation with me regarding the definition of the Project's APE and other Section 106 issues, then I would like the FERC to provide a letter notifying me that PacifiCorp has been authorized to initiate consultation with me on behalf of FERC pursuant to 36 CFR 800.2(c)(5) of the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) and specifying what steps in the consultation process PacifiCorp has been authorized to take.	Comment noted. See FERC letter from Mr. Lon Crow to Todd Olson, PacifiCorp, dated April 4, 2002. The letter authorizes PacifiCorp to initiate consultation with CHPO and others pursuant to 36 CFR 800.2 (c)(5) of the regulations implementing Section 106 of the NHPA.
902.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 2 Para 1	FSCD Section 7.1.2 Line 4 Para 2 - Cites the 1986 version of the regulations implementing Section 106 of the National Historic Preservation Act. Those regulations have been revised twice since 1986. Recommend that the reference be changed from "ACHP 1986" to "ACHP 2001".	Comment noted.
903.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 2 Para 2	FSCD Section 7.5.4.1 Line 4 Para 1 - Cites the 1986 version of the regulations implementing Section 106 of the National Historic Preservation Act. Those regulations have been revised twice since 1986. Recommend that the reference be changed from "ACHP 1986" to "ACHP 2001".	Comment noted.
904.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 2 Para 3	FSCD Section 7.5.4.2 - I recommend that the 50 year limit be adjusted to 45 years since the FERC regulations specify that the Traditional Relicensing Approach consists of a minimum 5-year, 3-stage consultation process for the preparation, filing, and processing of a new license application for an existing hydroelectric project. The 45-year recommendation is made in recognition of the 5-year lag between resource identification and the date that planning decisions are made and implemented because resources may become eligible for the National Register of Historic Places within that period.	Comment noted. See study 6.4 *Historic Hydroelectric Project Structures Evaluation.*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
905.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 2 Para 4	FSCD Section 10.2.4 - The cultural resources studies PacifiCorp proposed to conduct represents a reasonable approach.	Comment noted.
906.	California Historic Preservation, Dept. of Parks and Recreations - Dr. K. Mellon 03/14/01	Pg. 2 Para 5	FSCD Section 11.1 - The citation of the Advisory Council's regulations set forth at 36 CFR Part 800 should be revised to reflect the fact that the current regulations took effect January 2001.	Comment noted.
907.	City of Klamath Falls - J. Ball 02/01/01	Pg. 1 Para 4	The Link River trail is an important recreational point for the community and may generate more recreational use than any other recreational component in the relicensing area. Improvements to the trail should be considered, specifically the addition of a trail head at the south end adjoining downtown.	The Link River trail is a component of the recreation studies.
908.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 4	Angler use of the trout resource within and downstream of the Boyle Project is severely limited by the peaking flows.	Comment noted.
909.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 5	Mr. Fortune is concerned that the proposed Recreation Flow Analysis Study will not adequately address potential angler use.	The recreation flow analysis study will address fishing opportunities in the project -affected river reaches. See study 3.1.
910.	Private Citizen - R. Davis 05/07/01	Pg. 1	Removal of the dams would be an injustice. A varied fishery in the reservoirs and power generation is a great benefit.	Comment noted.
911.	Private Citizen - W. Voeller 04/06/01	Pg. 1	If the dams cannot be removed nor adequate fish ladders built, the next best thing will be to have increased flows below the dams. Especially important during the months of May and June for the outmigrating smolts.	PacifiCorp is committed to doing our part to restore anadromous fish runs in the Klamath River. However, PacifiCorp maintains that it does not have control over minimum flows from Iron Gate dam. See Exhibit B of the license application.
912.	Private Citizen - C. Stenberg-Davies	Pg. 1	PacifiCorp should restore fish passage and place diversion screens on its power facilities.	Comment noted. See study 1.10 *Fish Passage Planning and Evaluation.*
913.	Private Citizen - D. Boyd 03/26/01	Pg. 1	1. At this time Iron Gate hatchery is not meeting and has never met its quota for Steelhead. This process is not working and needs to be studied.	See study 1.10 *Fish Passage Planning and Evaluation*, water quality studies, cultural studies, and recreation studies.

Num.	Agency	Page	Comment Summary	Response Summary
			2. Water quality is of particular concern as a downstream landowner. 3. J.C. Boyle should be removed to allow a free flowing river that would truly promote the Wild and Scenic status of the river. 4. Cultural resources should be studied in the Klamath River Canyon. 5. Recreation uses deserve consideration.	
914.	Private Citizen - M. Robbi 03/23/01	Pg. 1	PacifiCorp is operating these dams and hydro projects in violation of the Federal Power Act and the Endangered Species Act by blocking fish migration and killing thousands of fish a year.	Comment noted.
915.	Private Citizen - M. Robbi 03/23/01	Pg. 1	The Klamath River needs clear fish passage and effective diversion screens on all power facilities.	See study 1.10 *Fish Passage Planning and Evaluation.*
916.	Private Citizen - G. Reedy	Pg. 1	PacifiCorp should make plans to restore fish passage on the Klamath River and place diversion screens on its power facilities.	See study 1.10 *Fish Passage Planning and Evaluation.*
917.	Private Citizen - G. Reedy	Pg. 1	PacifiCorp should use the most thorough and progressive environmental review possible. Consider all the potential actions that may restore dissolved oxygen and temperature parameters to that which is most favorable to fish in all months of the year.	See water quality studies.
918.	Private Citizen - G. Reedy	Pg. 1	Would like to see valid estimates of the mortality associated with each aspect of the facilities and proposals to change or mitigate this through a variety of actions, including dam removal.	See study 1.10 *Fish Passage Planning and Evaluation.*
919.	Private Citizen - B. Sanda 03/26/01	Pg. 1	Ms. Sanda urges PacifiCorp to consider the needs of fish, fisher men and women and rafting people in regards to water releases out of J.C. Boyle. Without scheduled releases there will be big economic and enjoyment impacts.	See studies 1.12 *Instream Flow Analysis*, 3.1 *Recreation Flow Analysis* and 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1*and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study*.
920.	Private Citizen - C. Chase 03/09/01	Pg. 1	PacifiCorp should restore fish passage on the Klamath River. PacifiCorp should add diversion screens at the dam sites to protect fish.	See study 1.10 *Fish Passage Planning and Evaluation.*
921.	Private Citizen - M.	Pg. 1	PacifiCorp should restore fish passage on the Klamath	See study 1.10 *Fish Passage Planning and Evaluation.*

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	Rilla 03/04/01		River. PacifiCorp should add diversion screens at the dam sites to protect fish. We must protect fish and their spawning cycles.	
922.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 3	Problems for fish in the Boyle Project area are the product of the disruptive peaking flows that largely restrict trout habitat to the low-flow stream levels and cause dramatic daily changes in water temperature.	Comment noted. See study 1.16 *Evaluation of Effects of Flow Fluctuation on Aquatic Resources within the J.C. Boyle Peaking Reach.*
923.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 3	Without the large daily flow fluctuations, new more useful riparian areas could be established that would provide more benefit to the fish resources in the form of cover and terrestrial food sources.	Comment noted.
924.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 4	Angler use of the trout resource within and downstream of the Boyle Project is severely limited by the peaking flows.	Comment noted. See study 3.1 *Recreation Flow Analysis.*
925.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 5	Mr. Fortune is concerned that the proposed Recreation Flow Analysis Study will not adequately address potential angler use.	Comment noted. See study 3.1 *Recreation Flow Analysis.*
926.	Private Citizen - J. Fortune 02/12/01	Pg. 1 Para 5	The unsightly "intertidal zone" currently affronts visitors at all but high flow periods. The unnatural condition of low flow which exposes the flat rocks detracts from all potential recreational experiences that could take place along the river.	Comment noted.
927.	Private Citizen - J. Fortune 02/12/01	Pg. 2 Para 1	The welfare of the area's natural resources should take precedence over maximizing recreational use.	Comment noted.
928.	Private Citizen - J. Strange 03/27/01	Pg. 1 and 2	1. Extirpation of anadromous fish above Iron Gate Dam. 2. Exacerbation of water quality problems. 3. Lack of adequate fish passage. 4. The FSCD is too narrow in scope, vague, unsubstantiated, and misleading. The FSCD relies too heavily on outdated and biased studies to ignoring dam decommissioning as a tool for fish passage to omitting basic information like the location of penstock intakes.	Comment noted. See appropriate water quality studies and fish passage study 1.10 *Fish Passage Planning and Evaluation.*
929.	Private Citizen - J.	Pg. 2	Water Quality Studies:	See study 1.6 *Monitoring and Analysis of Water Quality During*

Num.	Agency	Page	Comment Summary	Response Summary
	Strange 03/27/01	Recommended Studies	a. Conduct a thorough assessment of Project effects on water quality, including those related to maintenance activities and accidental events (i.e. overflow from J.C. Boyle Canal and the use of herbicides on access roads and power line corridors). b. Along with a. should be a determination of corrective actions necessary to comply with water quality standards. c. Develop water quality models of unregulated versus regulated flows for the entire Klamath River to help assess Project effects and cumulative impacts. d. Quantify the amount of mean monthly inflow into the Project area from tributaries and springs. e. Utilize analytical protocols such as Indicators of Hydraulic Alterations (IHA) to analyze altered versus unaltered hydrographs. f. Work with the Regional Water Quality Control Board and other agencies in developing studies on water quality.	*Project Maintenance Operations*, 1.3 *Water Quality Analysis and Modeling Process*, and 1.4 *Analysis of Project Effects on Hydrology*.
930.	Private Citizen - J. Strange 03/27/01	Pg. 2 and 3 Recommended Studies	Fish Studies: a. Quantify the effectiveness of existing fish ladders for target species and analyze their potential effectiveness for anadromous fish. The FishPro is merely a description and thus not sufficient. b. Quantify and describe anadromous fish habitat within and above the Project area, including all tributaries. c. Quantify and describe all restoration efforts within and above the Project area, including all tributaries. d. Exhaustively study <u>all</u> fish passage options including, fish ladders, truck-and-haul, screens and bypasses, and dam decommissioning. e. Quantify the numbers and species of non-native fish passing Iron Gate Dam into the Klamath	See study 1.10 *Fish Passage Planning and Evaluation* and 1.12 *Instream Flow Analysis*. However, PacifiCorp is not conducting an instream flow study downstream of Iron Gate dam. Flow in the river at that point is the responsibility of USBR.

Num.	Agency	Page	Comment Summary	Response Summary
			River. f. Comprehensively analyze Iron Gate Hatchery with respect to its past performance at meeting mitigation goals, negative impacts to wild salmonid stocks and measures to minimize these impacts, and its applicability in assisting with the restoration of anadromous fish above the Project. g. Conduct minimum instream flow studies for all reaches of the Klamath river, including below Iron gate.	
931.	Private Citizen - J. Strange 03/27/01	Pg. 3 Recommended Studies	Geomorphology Studies: a. Quantify geomorphic impacts to the Klamath River below the Project from lack of substrate recruitment and altered flow regime. Identify the downstream limit of this impact. b. Develop sediment budgets for the Klamath River and all tributaries within project area. c. Determine the adequate duration, timing, frequency, and magnitude of flows necessary to maintain channel form, function, and reduce substrate imbeddedness for all river reaches below Project dams.	See study 1.5 *Analysis of Project Effects on Sediment Transport and River Geomorphology.*
932.	Private Citizen - J. Strange 03/27/01	Pg. 3 Recommended Studies	Culture Studies: a. Assess the negative cultural impacts to affected tribes by the loss and decline of fish resources and the damming of the Klamath River.	See study 6.3 *Traditional Cultural Properties and Sensitive Cultural Resources Study.*
933.	Private Citizen - J. Strange 03/27/01	Pg. 3 Recommended Studies	Recreation Studies: b. Conduct controlled flow feasibility studies for whitewater boating in the J.C. Boyle full flow reach and <u>all</u> bypass reaches. c. Determine lost whitewater boating opportunities due to inundation. d. Include river users in the recreational User Survey and quantify the numbers of user days at Project recreational facilities <u>and all</u> river reaches.	See study 3.1 *Recreation Flow Analysis*. PacifiCorp does not intend to study or model pre-project conditions, such as inundation. Case law and FERC policies are clear that the existing environment is to be considered the baseline. See also study 3.2 *Recreation Visitor Surveys*.
934.	Private Citizen - J.	Pg. 3	Safety Studies:	PacifiCorp monitors dam safety through FERC Part 12 inspections.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
	Strange 03/27/01	Recommended Studies	a. Assess the potential for dam failure and the associated environmental and economic damage and loss of life. Dam failure factors include structural design and integrity, earthquake faults, and major flood events. b. Assess the Project's effectiveness at "controlling" floods.	Due to limited active storage areas in Project reservoirs, the Project has limited capacity to "control" flooding. See also study 1.4 *Analysis of Project Effects on Hydrology.*
935.	Private Citizen - J. Strange 03/27/01	Pg. 3 Recommended Studies	Economic Studies: a. Conduct a comprehensive cost/benefit analysis of the Project with consideration of the relatively minor generating capacity of the Project and the economic impacts to communities in southern Oregon and northern California due to the decline of salmon and steelhead.	See studies 7.1 *Analysis of Project Effects on the Socioeconomic Environment – Phase 1* and 7.2 *High Level Socioeconomic Analysis of the Landscape Options – Phase 2 of Socioeconomic Study*.
936.	Private Citizen - W. Forsell 01/31/01	Pg. 1 Para 1	Mr. Forsell is a member of the Humboldt County Fish and Game Advisory Commission which is seeking intervenor status for the Klamath Project.	Comment noted.
937.	Private Citizen - W. Forsell 01/31/01	Pg. 1 Para 3	BOR and PacifiCorp must share some responsibility for the fish mortality that occurred in the summer of 2000.	Comment noted.
938.	Private Citizen - W. Forsell 01/31/01	Pg. 2 Para 4	PacifiCorp must consider the impacts of not only water moving through the project, but also upstream irrigation, on the Karuk and Yurok tribes.	Comment noted. PacifiCorp is not responsible for upstream irrigation impacts.
939.	Private Citizen - W. Forsell 01/31/01	Pg. 2 Para 4	The scope of the Project must be enlarged to include the upstream and downstream areas.	Study scopes have been expanded through consultation with the various resource working groups.
940.	Private Citizen - S. Funk	Pg. 1	Iron Gate and Copco Dams are harmful to salmon and Steelhead. I support the Klamath River Task Force recommendations to require temperature control devices on both dams and to double the minimum flows, to at least 1,500 cfs.	Comment noted.
941.	Private Citizen - S. Funk	Pg. 1	PacifiCorp should also consider decommissioning the Iron Gate and Copco Dams.	Although PacifiCorp has modeled "without projects", the Company will not complete a feasibility study of dam removal.
942.	Private Citizen - K. Baker 3/20/01	Pg. 1	Do all that can be done to restore, repair, revive, return, redress and regain native fish populations.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
943.	Private Citizen - K. Baker 3/20/01	Pg. 1	Is Iron Gate Dam in violation of the Federal Power Act as it is a barrier to fish migration?	No. The current mitigation of Iron Gate Hatchery meets license conditions.
944.	Private Citizen - K. Baker 3/20/01	Pg. 1	The two Link River diversion canals are killing thousands of fish that are protected by the Endangered Species Act.	Comment noted.
945.	Private Citizen/Rafters - P. Redd	Pg. 1	Mr. Redd believes PacifiCorp should maximize peak demand power and not listen to the "Friends of the River" crowd whose views protect their own recreation at the expense of the residents and economy of California and the West. Waiting a year or two until power supplies can be increased to boat the Klamath is a minor inconvenience. Please generate maximum peak demand power.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
946.	Private Citizen - C. Walling 01/26/01	Pg. 1	Concerned about the loss of quality wetlands in the Klamath Basin/Tule Lake Wildlife Refuge. This is very apparent along Stateline Road. Ms. Walling would like PacifiCorp to evaluate dam decommissioning as an alternative in the NEPA study.	Although PacifiCorp has modeled "without projects", the Company will not complete a feasibility study of dam removal.
947.	Private Citizen - P. Bohrer 03/07/01	Pg. 1	Iron Gate Dam is a barrier to fish migration, which is in violation of the Federal Power Act and PacifiCorp's diversion canals to the powerhouse kill thousands of fish which are protected by the Endangered Species Act. Mr. Bohrer asks that PacifiCorp restore fish passage on the Klamath River and place diversion screens on the power facilities as part of relicensing.	See study 1.10 *Fish Passage Planning and Evaluation.*
948.	Private Citizen/Rafters - J. Newman 03/22/01	Pg. 1	Mr. Newman sympathizes with rafting companies but feels the priorities should be as follows: 1. Protecting the environment, in particular endangered salmon. 2. Maintaining the local and national supply of power, and maintaining the supply of water for urban, industrial, and critical agricultural use.	Comment noted.
949.	Rafters - California Outdoors N. Rangel 03/09/01	Pg. 1 Para 2	Any relicensing must recognize the importance of whitewater recreation to the Wild and Scenic River, and that mitigation measures must be put into place that guarantee and insure this beneficial use. These	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			mitigation measures should include provisions requiring minimal flows, hours of operation and long-range scheduling so that the general public can reasonably access the river.	
950.	Rafters - California Outdoors N. Rangel 03/09/01	Pg. 1 Para 3	Regarding a letter from PacifiCorp, Randy Landolt dated February 21, 2001: This letter gives California Outdoors, representing 50 professional river outfitters, the impression that PacifiCorp has little, if any, concern for the legally beneficial uses represented by recreation. N. Rangel has made four attempts to contact R. Landolt with no success.	PacifiCorp sees recreation as a resource to balance with other resources such as power generation. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
951.	Rafters - Heidi Hyden	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
952.	Rafters - J. Thomson 03/28/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
953.	Rafters - T. Tolman 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
954.	Rafters - R. Newman	Pg. 1	It would be a huge loss if this river were no longer	Comment noted. PacifiCorp will submit a license application to FERC

Num.	Agency	Page	Comment Summary	Response Summary
	03/21/01		available for whitewater rafting.	that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
955.	Rafters - P. Coe 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 3. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
956.	Rafters - A. Mattern 03/29/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
957.	Rafters - P. Hurme 03/29/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
958.	Rafters - B. Housand	Pg. 1	The "noncommittal" proposal on water releases is unacceptable. PacifiCorp must sit down with the commercial outfitters and private boaters to determine what kind of flow regime is possible this summer.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
959.	Rafters - M. Druden ? 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	
960.	Rafters - K. Solga 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
961.	Rafters - N. Aille ?? 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
962.	Rafters - J. Strunk 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
963.	Rafters - F. Ober 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
964.	Rafters - Paul 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation,

Num.	Agency	Page	Comment Summary	Response Summary
			the Upper Klamath River: 1. Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. 2. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	and cultural resource enhancement measures.
965.	Rafters - K. Kelberlau 03/21/01	Pg. 1	The upper Klamath River (between dams) is one of the best stretches of whitewater in the area. Please consider water flow at least 5 days a week.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
966.	Rafters - C. Goldberg 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
967.	Rafters - T. Stanley 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
968.	Rafters - M. Ross 03/21/01	Pg. 1	I believe PacifiCorp possesses the expertise to guarantee sufficient and reliable water flow for recreational rafting on the Upper Klamath River and meet its mission of providing electrical power.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
969.	Rafters - L. Peterson 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
970.	Rafters - R. Winston 03/21/01	Pg. 1	Why does PacifiCorp want to hold back water and not guarantee the 1500 minimum? I would like to see	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation,

Num.	Agency	Page	Comment Summary	Response Summary
			contract language that guaranteed certain times and days per week that the flow would be maintained at the 1500 level.	and cultural resource enhancement measures.
971.	Rafters - M.F. McCaskill, MD 03/22/01	Pg. 1	PacifiCorp has joined with Scottish Power, and will not commit to water availability at all making it impossible to plan a trip. PacifiCorp must be willing to work with the rafters and boaters to at least define certain days when river flow is guaranteed.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
972.	Rafters - T. McConnell 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
973.	Rafters - J. Baudin 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
974.	Rafters - B. Hobde 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
975.	Rafters - B. Swingle 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
976.	Rafters - B. Gilcrest 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
977.	Rafters - M. Rubesh 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
978.	Rafters - E. White 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
979.	Rafters - E. Davidson 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
980.	Rafters - Am Lenig 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
981.	Rafters - D. Crowe	Pg. 1	The following are of the utmost importance to the	Comment noted. PacifiCorp will submit a license application to FERC

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	03/22/01		continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
982.	Rafters - M. Pieracci 03/22/01	Pg. 1	Please listen to the request of Noah's River Rafting company and return the river to the way it was before Scottish Power bought PacifiCorp.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
983.	Rafters - E. Stoneham 03/22/01	Pg. 1	PacifiCorp should do all that it can to facilitate the rafting experience on the upper Klamath River as rafting helps people learn about water management, conservation, etc.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
984.	Rafters - J. Levine 03/21/01	Pg. 1	I've written to tell you how much I love the Klamath and rafting it every summer with my family. Please help.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
985.	Rafters - K. Haddock 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
986.	Rafters - D. and R. Mofford 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
987.	Rafters - M. Barr	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			time line is 11 am to 2 pm.	
988.	Rafters - P. Dallas	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
989.	Rafters - A. Warriner 03/25/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
990.	Rafters - T., S. and D. Harris	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
991.	Rafters - M. Kirwin	Pg. 1	The flows that need to occur on a scheduled basis are at least 1800 cfs. I am a small business owner who will be directly impacted by the decision not to release boatable flows.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
992.	Rafters - M. Gates and S. Barnett	Pg. 1	Fewer and fewer places are available for rafting. We would hate to see another river become unavailable.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
993.	Rafters - T. Hedley	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
994.	Rafters - B. Frager	Pg. 1	I think it would be wrong to restrict the river to a point that it would become unavailable for recreational use.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
995.	Rafters - J. and M. Farrow 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
996.	Rafters - B. Hixson 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
997.	Rafters - K. Cravens	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, and timely, useable water flows.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
998.	Rafters - D., D. and A. DeWinter 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
999.	Rafters - M. Meares 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1000.	Rafters - R. Rohde 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation,

Num.	Agency	Page	Comment Summary	Response Summary
			the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	and cultural resource enhancement measures.
1001.	Rafters - D. Canfield 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1002.	Rafters - D. Johnson	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1003.	Rafters - A. Van Til 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1004.	Rafters - C. Johnson	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
1005.	Rafters - J. Christenson 03/23/01	Pg. 1	It's disturbing that Scottish Power/PacifiCorp wants to virtually ruin water flow on the Klamath River. This river is for the public. Consider what public opinion will be with your company trying to monopolize public water ways.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1006.	Rafters - A. Haulk 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1007.	Rafters - K. Meares 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1008.	Rafters - A. Ford Hall, Jr. 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1009.	Rafters - K. Massey Sayegh 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
1010.	Rafters - D. Rice 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1011.	Rafters - H. Koerner 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1012.	Rafters - S. Pawley	Pg. 1	I am a constant visitor to America, as in the UK we have such areas of outstanding natural beauty that are uninhabited and unspoiled by humans. The upper Klamath is one of these areas. I want to appeal to PacifiCorp not to reduce the availability of timed and sufficient release of water into the upper Klamath River.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1013.	Rafters - D. Williams	Pg. 1	I feel that in restricting water flows to one day a week would be taking away the inalienable rights, along with financial reliability, of many local and foreign people.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1014.	Rafters - J. and L. Rose 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1015.	Rafters - S. Hancock 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

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			Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	
1016.	Rafters - D. Montgomery	Pg. 1	The fact that there is a dam on a natural resource on public land and water should not preclude the enjoyment of the resource by many and in a multiple use format. Let the river run at increased water levels from 10 am to 2 pm everyday.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1017.	Rafters - B. Smith	Pg. 1	The "noncommittal" proposal on water releases is unacceptable. PacifiCorp must sit down with the commercial outfitters and private boaters to determine what kind of flow regime is possible this summer. Enough water must be released into the river to also benefit the fishery.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1018.	Rafters - J. Eppley	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1019.	Rafters - M. Walsh	Pg. 1	The "noncommittal" proposal on water releases is unacceptable. PacifiCorp must sit down with the commercial outfitters and private boaters to determine what kind of flow regime is possible this summer. Enough water must be released into the river to also benefit the fishery.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1020.	Rafters - T. Broersma 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

APPENDIX B
First Stage Consultation Document Comments
Summary of Agency Comments on First Stage Consultation Document and PacifiCorp's Responses

Num.	Agency	Page	Comment Summary	Response Summary
1021.	Rafters - S. Murdock	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1022.	Rafters - T. Maskell	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1023.	Rafters - T. Hutchinson 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1024.	Rafters - J. and C. McDermott 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1025.	Rafters - P. Chesko 03/24/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1026.	Rafters - C.	Pg. 1	The following are of the utmost importance to the	Comment noted. PacifiCorp will submit a license application to FERC

Num.	Agency	Page	Comment Summary	Response Summary
	Langenfelo 03/27/01		continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1027.	Rafters - J. Rhode 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1028.	Rafters - C. Reppe 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1029.	Rafters - J. Rivers 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1030.	Rafters - M. Baertschi 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1031.	Rafters - N. Shegladln?? 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation,

Num.	Agency	Page	Comment Summary	Response Summary
			the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	and cultural resource enhancement measures.
1032.	Rafters - R. Berr 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1033.	Rafters - R. Stilley 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1034.	Rafters - Siskiyou Development Co., Inc. - M. Dean 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1035.	Rafters - R. Castro?? 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1036.	Rafters - B. Welsch 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River:	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	
1037.	Rafters - L. and S. Berry 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1038.	Rafters - K. Schroeder 03/27/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1039.	Rafters - L. Voeltz 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1040.	Rafters - M. and N. Hider 03/25/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1041.	Rafters - J. and D. Dupkchien 03/24/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	
1042.	Rafters - M. El	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1043.	Rafters - S. Bollock	Pg. 1	Is there any logical reason why you cannot guarantee two hours of runable water each day? I strongly urge you to use your influence to find a way to treat the recreational users of this public resource fairly and to keep the fish alive for the sake of not only the fishermen, but also the whole ecosystem that could be threatened.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1044.	Rafters - Rogue Klamath River Adventures - W. Zallen 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1045.	Rafters - N. Croletto 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1046.	Rafters - W. and S. Johnson 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	
1047.	Rafters - E. Vander Wilt 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1048.	Rafters - C. Willingham, Ph.D.	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1049.	Rafters - P. Kramer 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1050.	Rafters - B. McCollough	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 10 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1051.	Rafters - S. Walters 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1600 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			time line is 10:30 am to 2 pm.	
1052.	Rafters - D. Romano 03/23/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1053.	Rafters - W. McGinnis 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows seven days a week at 10 or 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1054.	Rafters - T. Whitley 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1055.	Rafters - L. and H. Wollin 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1056.	Rafters - L. Welch 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1057.	Rafters - J. McClelland 03/27/01	Pg. 1	PacifiCorp must honor ALL the users of the Klamath River in order for the FERC license to be renewed.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation,

Num.	Agency	Page	Comment Summary	Response Summary
			This means providing beneficial flows for the fishery and whitewater recreation at pre-determined consistent flows.	and cultural resource enhancement measures.
1058.	Rafters - B. Meek 03/22/01	Pg. 1	Committing to a minimal schedule of release, at least two hours of at least 1400 cfs daily should be a priority consideration. I can't believe that a consistent schedule of operation could be detrimental to the income maximizing potential of any year.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1059.	Rafters - E. Flury 03/26/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1060.	Rafters - A. Bush	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1061.	Rafters - L. Bowker 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1062.	Rafters - C. Novak 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

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1063.	Rafters - C. Foley 03/22/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1064.	Rafters - L. Yeager 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1065.	Rafters - T. Harris 03/21/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1066.	Rafters - P. McLean	Pg.1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1067.	Rafters - J. von Schlegell 04/04/01	Pg. 1	The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

Num.	Agency	Page	Comment Summary	Response Summary
			time line is 11 am to 2 pm.	
1068.	Rafters - A. Bush		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1069.	Rafters - C. Novak 03/22/01		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1070.	Rafters - C. Foley 03/22/01		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1071.	Rafters - L. Yeager 03/21/01		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1072.	Rafters - T. Harris 03/21/01		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.

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1073.	Rafters - P. McLean		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1400 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.
1074.	Rafters - L. Bowker 03/21/01		The following are of the utmost importance to the continuance of the whitewater rafting and kayaking on the Upper Klamath River: Downstream water flows of at least 1500 cfs, seven days a week from May 1 through October 15. Timely, useable water flows. The minimum acceptable time line is 11 am to 2 pm.	Comment noted. PacifiCorp will submit a license application to FERC that balances power generation needs with fish, wildlife, recreation, and cultural resource enhancement measures.