



SOUTH YUBA RIVER CITIZENS LEAGUE

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Preliminary Response to Pre-Application Document Questionnaire

The South Yuba River Citizens League (SYRCL) has the mission to protect and restore the entire Yuba Watershed. We recognize that FERC-licensed projects of the Yuba County Water Agency (FERC Project 2246) significantly effect current conditions and also provide restoration opportunities for the watershed. SYRCL intends to be a consistent and collaborative participant in the relicensing process.

This letter is our preliminary submittal of information for your consideration and use in developing a Pre-Application Document. Although I am not using the exact format provided, I have attempted to organize this submission according to the main points of the Questionnaire. I will provide follow-up and detailed information in following submittals or in response to additional requests. Please address all such requests to:

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A. Sources of Existing, Relevant, and Reasonably Available Information:

SYRCL conducts water quality monitoring at sites throughout the Yuba River watershed according to a state-approved Quality Assurance Program Plan. Trained volunteer monitors sample each site monthly or at special occasions to measure pH, temperature, conductivity, dissolved oxygen and turbidity. In addition, special laboratory analysis of bacteria and metals has been conducted in some cases. Water quality data was initiated as early as 2000 for some sites, and some sites were established more recently. At some sites, bioassessment of benthic macroinvertebrates (BMIs) has been conducted and at some sites thermographs have been installed for summer months in recent years. The following table provides a summary of SYRCL sites not including those in the South Yuba subbasin. Many of these sites are either directly effected by the YRDP or are relevant to understanding effects due to upstream locations.

Table 1: SYRCL Water Quality Monitoring Sites in the Yuba Watershed, not including those in the South Yuba sub-basin, and with notation of other monitoring conducted.

ID	Subbasin	Stream	StationName	Thermograph	BMI
1	North Yuba	North Yuba River	Union Flat		X
2	North Yuba	North Yuba River	Blw Downieville		
3	North Yuba	North Yuba River	Blw Fiddle Ck		X
4	North Yuba	Lavezzola Ck	Lavezzola Ck		
5	Middle Yuba	Oregon Ck	Oregon Ck near mouth	2007, 2008	X
6	Englebright	Yuba River	Blw Colgate		
7	Middle Yuba	Middle Yuba River	Jackson Mdws		
8	Middle Yuba	Middle Yuba River	Plumbago Xing		
9	Middle Yuba	Middle Yuba River	Foote's Xing		
16	Lower Yuba	Lower Yuba River	Parks Bar		X
17	Lower Yuba	Lower Yuba River	Blw Daguerre		
18	Lower Yuba	Lower Yuba River	Hallwood Blvd		
20	Lower Yuba	Lower Yuba River	SimpsonLn Bridge		
24	North Yuba	Fiddle Ck	Fiddle Ck		
27	Middle Yuba	Kanaka Ck	Kanaka Ck		
32	North Yuba	Canyon Ck NY	Canyon Ck NY		
37	Middle Yuba	Middle Yuba River	Milton Reservoir		X
47	Lower Yuba	Dry Creek	Dry Creek	2008	
54	Middle Yuba	Oregon Ck	Oregon Ck Cmptville	2008	
55	Middle Yuba	Middle Yuba River	Abv Oregon Ck		X
56	Middle Yuba	Middle Yuba River	Our House	2008	X
57	Middle Yuba	Oregon Creek	Upper Oregon Ck		
59	North Yuba	Cherokee Creek	Cherokee Creek		
107	Middle Yuba	Middle Yuba River	Middle Yuba blw 49	2007	
121	North Yuba	North Yuba	North Yuba below 49	2008	

Some Documents with Information Pertinent to Project:

Yuba County Water Agency. February 1990. *Present and Projected Water Requirements of Districts in Yuba County*. Sacramento CA: Bookman-Edmonston Engineering, Inc.

Yuba County Water Agency. October 1998. *Narrows II Powerhouse Intake Extension: Proposed Mitigated Negative Declaration and Initial Study*. Marysville CA: Yuba County Water Agency.

Narrows II Powerhouse Extension: Project Proposal. 1998.

Project proposal to change the intake of water at Englebright in order to release colder water from Narrows II powerhouse.

Narrows II Bypass Project Proposal. Submitted by YCWA. 08/08/2001
General Proposal for the Bypass Project and benefits to fish downstream.

Yuba County Water Agency. September 2000. *Report of Phase II. Formulation and Analyses of Alternatives for Supplemental Flood Control Program on the Yuba River.* Bookman-Edmonston Engineering; GEI Consultants, Inc.; Henwood Energy Services, Incl; Jones and Stokes Associates; Murray, Burns and Kienlen; Bartkiewicz, Kronick and Shanahan; Deen and Black Public Relations.

Yuba River Basin Model: Operations and Simulation Procedures. Prepared for YCWA by Bookman Emdmonston. 1999.

General overview of YCWA's operations. It examines YCWA's obligations through its agreements and licenses and discusses various flow requirements at different points in the YRDP.

YCWA Resolution No. 66-13
Discussion of bonds making YRDP viable.

Water Right Decision 1644.
Establishes instream flows below Englebright.

Yuba River Story. 1965?
Includes statistics and photographs of YRDP construction.

Report on Water Temperature Modeling on the Yuba River. 1992. Bookman-Edmonston. 1992.

USGS Bathymetric geophysical surveys on Englebright Lake.
Data and discussion of debris sedimentation in Englebright Reservoir and possible results of removing Englebright Dam.

State Water Resources Control Board Division of Water Rights: Staff Report on Lower Yuba River. August 1991.
Discussion of YRDP effects on fish.

Draft Implementation Plan for Lower Yuba River Anadromous Fish Habitat Restoration; Multi-Agency Plan to Direct Near-Term Implementation of Prioritized Restoration and Enhancement Actions and Studies to Achieve Long-Term Ecosystem and Watershed Management Goals. Prepared by the Lower Yuba River Fisheries Technical Working Group, funded by CALFED and the Yuba County Water Agency. October 2005.
Presents fisheries resources, information to evaluate limiting factors and hypotheses to test in order to develop restoration and mitigation measures.

HDR's Proposed Lower Yuba River Accord. Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS)

Upper Yuba River Studies Program Team. October 2003. Interim Report; Summary of Current Conditions in the Yuba Watershed.
Includes discussion and statistics concerning sediment processes, water quality, hydrology and fish passage.

Draft Fisheries Monitoring and Evaluation Plan for the Yuba Accord. 2009

B. Known or Potential Adverse Impacts or Issues Associated with the Project

1. Fisheries and Habitat in the lower Yuba River

The lower Yuba River is the largest river in the Central Valley without a hatchery and supports populations of fall-run Chinook, late-fall-run Chinook, spring-run Chinook and steelhead. Elevated flows due to project operations can increase contribution of hatchery and non-natal salmon and steelhead to in-river spawning populations. For spring-run and steelhead this may increase risk of extinction (Lindley et al. 2007).

Daguerre Point Dam is essential to water deliveries by YCWA, and this demand influences flows in the lower Yuba River above Daguerre. Daguerre Point Dam delays or impedes migrations of salmon and steelhead and is a total barrier to green sturgeon. Daguerre Point Dam also increases predation rates on juvenile salmonids. The Brophy Diversion at Daguerre causes mortality to juveniles due to entrainment and the lack of an adequate fish screen.

Dry Creek is habitat for salmon, steelhead and other fishes, but the capacity and limitations of this habitat has not been assessed. Flows in the lower Yuba River may effect the quality and utilization of habitat in Dry Creek. This issue also pertains to the lowest reach of Deer Creek.

Unnaturally high flows in late spring and summer may impact juvenile salmonid production and diversity by reducing residence time, altering habitat or precluding certain life history patterns.

Water entering the lower Yuba River from Englebright Reservoir appears high in turbidity due to suspended algae and may have other water quality problems involving nutrients, and mercury. Englebright reservoir and pulse flows from Colgate power house may contribute to methylation of mercury.

The steelhead/rainbow trout population of the lower Yuba has a very low percentage of anadromy, and this may be due to constant cold flows in the lower Yuba which fail to provide juvenile steelhead cues to outmigrate at appropriate time in steelhead life history.

Past mining activities, including massive dredging, has left a legacy of altered habitat which interacts with flow. The project limits or influences the processes (wood delivery, sediment delivery, riparian recruitment) which would naturally correct channel confinement and habitat simplification.

Low levels of fish habitat complexity make salmonid populations less resilient to environmental change due to a reduction in life history diversity and production.

Unnatural flow regimes in the lower Yuba River (including high flows during summer) reduce recruitment of riparian trees and diminish diversity and quality of riparian habitats. These habitat impacts have consequences for birds, amphibians, invertebrates and fish.

2. Other Project-related Issues in the Watershed

Englebright blocks passage for anadromous fish into the upper watershed which contains the vast majority of ancestral habitats in the Yuba River watershed for spring-run Chinook salmon and steelhead trout which are listed under the Endangered Species Act as Threatened with extinction.

Englebright dam blocks passage of wood and spawning material into the lower Yuba River. This diminishes spawning habitat availability in the upper reach of the lower Yuba, and reduces the complexity of habitat throughout the lower Yuba River.

Instream flows requirements in the following reaches are insufficient provide for trout populations and other aquatic resources:

- North Yuba below New Bullards
- Middle Yuba below Our House Dam
- Oregon Creek below Log Cabin Dam
- Upper Main below North-Middle confluence

Pulse flows in Rice's Crossing area below Colgate cause impact to fish and other aquatic resources

Real-time gage data is not dependably available in the lower Yuba River near Smartsville compromising recreational activities, safety and evaluation of project effects on resources (e.g. ramping studies).

C. Need for Information Gathering or Studies

Fisheries studies have been completed or in process for the lower Yuba River, yet many data gaps remain for assessing project effects in this area. The RMT has developed a monitoring and evaluation plan (M&E Plan) which, as implemented, will provide a variety of useful information to study plans concerning hydrology and fisheries. However, the RMT will not provide all flow and habitat information needs for the relicensing process because it is underfunded for implementing it's own M&E plan, especially on the timeframe required for relicensing which stresses the completion of field studies in 2013. RMT studies must somehow be integrated with study plans for FERC developed collaboratively by relicensing participants. I encourage early exploration of this need for information and coordination.

The RMT studies are focused on the condition and viability of salmonid populations, but other resources, such as riparian and water quality require focused studies. Specific questions to be addressed include:

- What is the pattern of riparian seed dispersal, regeneration and recruitment?
- How do these riparian processes interact with flows and sediment?
- How does Englebright Reservoir change water quality constituents (nutrients, metals, etc) entering the lower Yuba River?

As for fisheries questions for the lower Yuba River, here are some that I think are critically important to the relicensing process:

- What are the impacts of various flow fluctuations, by season, on juvenile salmonids?
- What are the current spatial and temporal patterns of salmonid rearing habitat utilization and how does capacity for different rearing strategies change with flow?

- What is the relative growth and survival rates of juvenile salmonids in off-channel rearing habitats to which access is controlled by flow fluctuations?
- Does percent contribution of hatchery and non-natal spawners change with flow?
- Can the occurrence of anadromy in the O. mykiss population be increase through flow modifications (i.e. lower summer flows)?
- Can spring-run Chinook abundance be enhanced through measures to enhance available spawning habitat or limit introgression?

The Draft Implementation Plan for the Lower Yuba River Anadromous Fish Restoration concludes with a list of necessary studies. Of all described, the following have nexus with YRDP relicensing and are currently not being conducted at a schedule to support relicensing:

- Conduct a fluvial geomorphic assessment to determine the relationships between gravel recruitment, sediment transport, streamflow, floodplain restrictions, fine sediment input from the watershed, invasion of exotic riparian species and land use of priority species and their habitat;
- Evaluate the effectiveness of pulse flows to facilitate successful adult salmonid immigration and juvenile salmonid emigration;
- Conduct an IFIM study for American shad to quantify the changes in weighted usable area for various life stages over a broad range of flows;
- Conduct a Flow Fluctuation Analysis Workshop to identify measures to reduce or eliminate stranding; and
- Conduct a cooperative study to determine the feasibility of allowing spring-run Chinook salmon and steelhead access to historical spawning and rearing habitats above Englebright Dam;
- Assess the need to develop a spawning gravel monitoring and management program for steelhead and fall-run Chinook Salmon based on the identification of specific sites where intervention would enhance or increase salmonid spawning habitat;
- Evaluate spawning gravel quality in areas used by Chinook salmon and steelhead;
- Assess the feasibility of adding large woody debris to enhance juvenile salmonid rearing habitat;
- Assess the feasibility of providing enhanced off-site steelhead habitat.
- Identify and evaluate different procedures of physically separating spawning fall-run and spring-run Chinook salmon to minimize introgression;
- Conduct juvenile salmonid emigration surveys using a variety of methods;;
- Conduct Chinook salmon smolt survival studies using various methodologies;
- Evaluate various flow and water temperature conditions on aquatic macroinvertebrate communities;
- Determine the relative contribution of fall-run Chinook salmon that leave the lower Yuba River early as post-emergent fry to the lower Yuba River spawning stock escapement;
- Develop an in-river production model for fall-run Chinook salmon to assist in understanding factors critical to the well-being of this species;
- Develop a stock-recruitment model for fall-run Chinook salmon to guide management decision-making;

- Conduct studies of growth-dependent juvenile salmonid habitat use and distribution to guide management decision-making;
- Conduct a steelhead life history study by collecting otoliths from fish captured at Daguerre Point Dam;
- Determine age composition of Chinook salmon and steelhead spawning escapement populations using scales and otoliths;
- Evaluate the efficacy of using scale or otolith growth patterns from adults to distinguish tributary-reared juveniles from Delta-reared juveniles;
- Identify the estimated proportion of non-natal anadromous salmonids that stray into the lower Yuba River to enhance management capabilities;
- Assess the incidence of phenotypic female Chinook salmon positive for the male Y-chromosome-specific marker *OtYI* by monitoring genotypes and gonad phenotypes;
- Develop and implement a method of estimating annual steelhead spawning population and population trends to establish population goals and assist in management decision-making;
- Develop a juvenile steelhead over-summer survival model to enhance understanding of factors critical to the well-being of this species;
- Investigate temporal and spatial distribution of steelhead in the lower Yuba River to strengthen the information base for management decisions;
- Identify estimated pre-spawning mortality rates for adult Chinook salmon;
- Monitor the health of wild and naturally reproducing Chinook salmon, steelhead and non-salmonid fish populations in the Yuba River;
- Conduct habitat criteria studies for American shad life stages; and

Project-affected reaches above Englebright Dam have received very little study. Water temperature, flow and geomorphic conditions of these reaches should be evaluated immediately. In addition, habitat assessments, similar to those conducted on the Middle and South Yuba as part of the Upper Yuba River Studies Program, should be conducted on the Upper Main below the North-Middle confluence. This would include assessments of fish passage, spawning and holding habitat, and rearing Habitat

In conclusion, this submittal has focused on the resource issues of fisheries and water quality. SYRCL is a signatory to a concurrent submittal by the Foothills Water Network which addresses a more comprehensive list of resource issues. SYRCL will be providing additional information in the future, possibly through the Foothill Water Network or less formal submissions than this one.

Best of luck with preparations for the PAD!

-Gary