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**4.5 PSP Cover Sheet (Attach to the front of each proposal)**

Proposal Title: YUBA TOOLS: Collaborative Watershed Management for Flood Control  
Applicant Name: Yuba Watershed Council & SYRCL  
Mailing Address: 240 Commercial Street, Suite E, Nevada City, CA 95959  
Telephone: 530.265.5961  
Fax: 530.265.6232  
Email: syrcel@syrcel.org

Amount of funding requested: \$ 216,150 for 2 years

Indicate the Topic for which you are applying (check only one box).

- |                                     |                             |                          |                          |
|-------------------------------------|-----------------------------|--------------------------|--------------------------|
| <input type="checkbox"/>            | Fish Passage/Fish Screens   | <input type="checkbox"/> | Introduced Species       |
| <input checked="" type="checkbox"/> | Habitat Restoration         | <input type="checkbox"/> | Fish Management/Hatchery |
| <input type="checkbox"/>            | Local Watershed Stewardship | <input type="checkbox"/> | Environmental Education  |
| <input type="checkbox"/>            | Water Quality               |                          |                          |

Does the proposal address a specified Focused Action?  yes  no

What county or counties is the project located in? Yuba, Nevada and Sierra

Indicate the geographic area of your proposal (check only one box):

- |                                     |                              |                          |  |
|-------------------------------------|------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | Sacramento River Mainstem    | <input type="checkbox"/> | East Side Trib:                        |
| <input type="checkbox"/>            | Sacramento Trib: <u>YUBA</u> | <input type="checkbox"/> | Suisun Marsh and Bay                   |
| <input type="checkbox"/>            | San Joaquin River Mainstem   | <input type="checkbox"/> | North Bay/South Bay                    |
| <input type="checkbox"/>            | San Joaquin Trib:            | <input type="checkbox"/> | Landscape (entire Bay-Delta watershed) |
| <input type="checkbox"/>            | Delta:                       | <input type="checkbox"/> | Other:                                 |

Indicate the primary species which the proposal addresses (check all that apply):

- |                                     |   |                                     |                           |
|-------------------------------------|---|-------------------------------------|---------------------------|
| <input type="checkbox"/>            | San Joaquin and East-side Delta             | <input checked="" type="checkbox"/> | Spring-run chinook salmon |
| <input type="checkbox"/>            | Winter-run chinook salmon                   | <input checked="" type="checkbox"/> | Fall-run chinook salmon   |
| <input type="checkbox"/>            | Late-fall run chinook salmon                | <input type="checkbox"/>            | Longfin smelt             |
| <input type="checkbox"/>            | Delta smelt                                 | <input checked="" type="checkbox"/> | Steelhead Trout           |
| <input checked="" type="checkbox"/> | Splittail                                   | <input checked="" type="checkbox"/> | Striped Bass              |
| <input checked="" type="checkbox"/> | Green sturgeon                              | <input type="checkbox"/>            | All chinook species       |
| <input checked="" type="checkbox"/> | Migratory Birds                             | <input type="checkbox"/>            | All anadromous salmonids  |
| <input checked="" type="checkbox"/> | Other: <u>White Sturgeon, American Shad</u> |                                     |                           |

Specify the ERP strategic objective and target (s) that the project addresses. Include page numbers from January 1999 version of ERP Volume I and II:

• Restore and improve opportunities for rivers to seasonally flood their floodplain • Conduct a study to construct setback levees • Preserve and expand stream meander belts in Yuba River • Build local support for maintaining active meander zones • Acquire riparian and meander zone lands • Purchase streambank conservation easements to improve salmonid habitat along Yuba River • Restore normally functioning watershed processes. Volume 2, pp. 293 – 303.

Indicate the type of applicant (check only one box):

State Agency  
 Public/Non-profit joint venture  
Local government/district  
University

Federal agency  
Non-profit  
Private party  
Other

Indicate the type of project (check only one box):

Planning  
Monitoring  
 Research

Implementation  
Education

By signing below, the applicant declares the following:

- 1.) The truthfulness of all representations in their proposal;
- 2.) The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- 3.) The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Shawn E. Garvey

Printed name of applicant

Shawn Garvey

Signature of applicant

YUBA TOOLS

A TOOLBOX INVESTIGATION OF WATERSHED MANAGEMENT TECHNIQUES  
TO ENHANCING FLOOD PROTECTION AND RESTORE ECOSYSTEMS IN THE YUBA WATERSHED

**Primary Contact:**

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Email: syrcl@syrcl.org

**Type of organization and tax status:**

501c3 non-profit educational corporation

**Federal Employer Identification Number:**

68-0171371

**Participants and collaborators:**

Yuba Watershed Council (See Exhibit A: Unanimous endorsement by Council, April 7, 1999)

Nevada County Resource Cons. District	City of Nevada City
US Forest Service	Bureau of Land Management
USDA Natural Resources Cons. Service	Superintendent of Nevada County Schools
California Department of Forestry	Friends of Deer Creek
California State Parks	Sierra Club
Northern Sierra Air Quality Mngmt Dist.	Nevada Irrigation District
North San Juan Fire Protection District	Pacific Gas and Electric
Yuba Watershed Institute	
SYRCL	

Nevada County (Exhibit B: Resolution 99168)

With  
out

Yuba River Fisheries Technical Working Group (See Exhibit C: Statement of Endorsement of Principle)

Michael Morse, US Fish and Wildlife Service  
Gary Taylor, US Fish and Wildlife Service  
William Mitchell, Jones & Stokes  
Carl Mesick, US Fish and Wildlife Service/AFRP  
Craig Fleming, US Fish and Wildlife Service/AFRP  
Julie Brown, California Department of Fish and Game  
Craig Seltnerich, PG&E Aquatic Fisheries Biologist  
Michael Bryan, Surface Water Resources Inc.

Additional Collaborators and Participants (See Exhibit D)

Planning and Conservation League	Sierra Club
Resource Renewal Institute	US Forest Service
Friends of Spenceville	Department of Parks & Recreation – Gold Mines District
Natural Heritage Institute	US Geological Survey
High Sierra Resource Conservation & Development District	Forest Issues Group
Sierra Nevada Alliance	University of California Extension Service
Camptonville School District	FRIENDS OF THE RIVER
Camptonville Community Services District	The Nature Conservancy
Sierra County Planning Department	Eric Larsen, University of California/Davis
California Department of Fish and Game	

**Proposal presented to the following organizations for informational purposes:**

Camptonville Proposition 204 Committee (Presented March 9, 1999)  
Yuba-Sutter Flood Control Committee (Presented April 11, 1999)



## II. EXECUTIVE SUMMARY

### YUBA TOOLS

#### A TOOLBOX INVESTIGATION OF WATERSHED MANAGEMENT TECHNIQUES AVAILABLE FOR ENHANCING FLOOD PROTECTION IN THE YUBA WATERSHED [YUBA TOOLS PROJECT]

##### PROJECT DESCRIPTION/ECOLOGICAL OBJECTIVES

Residents living in the floodplain of the lower Yuba River watershed are threatened annually with high water events. Over time, these events have caused substantial devastation and loss of life and property. This project proposes an investigation of various non-dam watershed management techniques to enhance flood protection while maintaining or improving natural processes, habitat and populations of high priority at-risk species, including chinook salmon and steelhead.

The project team proposes establishing an 18-month-long stakeholder-based collaborative process to identify and evaluate flood control alternatives for the Yuba River watershed, with the goal of developing a suite of effective structural and non-structural measures that balance ecological and human demands on Yuba River resources. A steering committee of representatives from existing watershed coalition groups and other interested stakeholders will be established as part of the project. This steering committee will work with a project coordinator and technical team to evaluate various flood control measures, their flood control and ecosystem benefits, and any potential impacts on river processes, habitat or species. This analysis will form the basis for recommendations for implementation.

With more meaningful stakeholder involvement, this collaborative study will provide educational opportunities as well as experimental tools to increase the public's understanding of floodplain management and restoration actions. In addition, the project augments the habitat restoration and water quality improvement work being undertaken by watershed coalition groups established through existing CalFed- and Proposition 204-funded projects in the upper and lower Yuba watershed.

##### COMPATIBILITY WITH CALFED OBJECTIVES AND FUNDING GOALS

The Yuba River watershed drains approximately 1,300 square miles of the western Sierra Nevada slope and includes portions of Sierra, Placer, Yuba and Nevada counties. Because the Yuba supports highly valued populations of steelhead trout and spring- and fall-run chinook salmon, as well as other anadromous and resident fish communities, it is considered "one of the most important Ecological Management Units in the Feather River/Sutter Basin Ecological Management Zone," according to CalFed's 2/99 Revised Draft of the *Ecosystem Restoration Program Plan*, Vol. II (p. 281).

To protect and enhance habitat for these target species, the YUBA TOOLS project focuses on evaluating ecologically sustainable, non-dam flood control alternatives. The project team will work collaboratively with existing watershed-based coalitions, established through previously funded CalFed and Proposition 204 projects, whose memberships include representatives from agencies and organizations with specific interests in the Yuba watershed (see Section VII and Appendices for full list of collaborators).

The project will investigate watershed management and flood control techniques that help achieve overall CalFed objectives, including:

- 1.) improving and increasing aquatic and terrestrial habitats and ecological functions to support sustainable populations of diverse and valuable plant and animal species;
- 2.) providing good water quality for all beneficial uses; and
- 3.) reducing the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic failure of levees.

*The most effective management of the flood plains of the major rivers may not be a primarily "structural approach" of building levees and dams, but rather a combination of structural and nonstructural approaches that considers the many interrelated benefits to society offered by river systems.*

-- Army Corps of Engineers  
excerpted from *Sacramento and San Joaquin River Basins Comprehensive Study Newsletter, Issue 1*



Specific ERPP goals will be addressed, as well, including: improving stream-channel and riparian habitat, maintaining gravel recruitment and sediment transport processes, and preserving river meander zones and active floodplains.

These techniques [see box] have been shown to be effective elsewhere; but they need to be studied specifically in relation to what combination might best serve the Yuba watershed. Such a study will help improve our understanding of hydrologic, geomorphic and ecological relationships and assist in the evaluation of ecologically based alternative water management strategies, as called for under the Habitat Restoration Topic Area and General Bay-Delta Focused Actions identified by the CalFed Integration Panel (2/99 FSP, p. 18-19).

#### POTENTIAL TOOLS TO MINIMIZE PEAK FLOWS

- meadow restoration/riparian improvements
- culvert diversion, wet meadow/recharge basin restoration and other upstream watershed management tools
- reoperation of existing facilities
- relocation of facilities out of the floodplain
- flood bypasses
- floodplain conservation easements
- levee raises or setbacks
- stream meander improvements
- others... to be determined through public outreach

#### ADVERSE AND THIRD PARTY IMPACTS

In its own flood control study process, Yuba County Water Agency rejected most non-dam flood control options in favor of more structural approaches. Each of YCWA's 12 preliminary alternatives includes at least one major new dam or reservoir in the Yuba watershed – and in some cases, two or three. These projects conflict with CalFed's vision for more natural ecological processes; improved riparian, wetland and riverine habitat; reduction of stressors, such as dams, in the watershed; and increased populations of target species like salmon and steelhead. The process used to develop these alternatives was neither collaborative nor consensus-based and failed even to consider ecological criteria in the initial assessment.

Residents in the upper watershed, therefore, find themselves the target of large dam proposals, which, in turn, threaten their homes and property with condemnation and removal. As a result, the dialogue between lower and upper Yuba watershed residents, agencies and organizations continues to grow more distant, emotionally charged and unproductive. To counter this atmosphere of conflict and discord, the project team offers the YUBA TOOLS proposal to bring stakeholders from the upper and lower watershed together to craft a regional solution that meets the needs of all watershed residents.

#### APPLICANT QUALIFICATIONS AND LOCAL SUPPORT

The Yuba Watershed Council – a 21-signatory collaborative process successful in attracting \$1.7 million in watershed grants -- collaborated in the development of this proposal and unanimously endorsed Yuba Tools on April 7, 1999. The Nevada County Board of Supervisors lended official endorsement in Resolution 99168 on April 13, 1999. A total of 45 local, state and federal entities have agreed to serve as participants and collaborators. The proposal has also been presented to the Camptonville Proposition 204 Committee and the Lower Yuba Technical Working Group, organizations we will work closely with to generate public participation and stakeholder input. The proposal has also been presented to the Sacramento Bee, the Marysville Appeal Democrat and the Grass Valley Union.

SYRCL, the South Yuba River Citizens League, will serve as the lead for the YUBA TOOLS project. SYRCL is a community-based 501c3 educational organization in its 16<sup>th</sup> year of operation. SYRCL has close working relationships with local, state and federal agencies and is a leader in watershed issues in both the upper and lower Yuba watershed. SYRCL is joined by Rachel Kamman, of Kamman Hydrology, who is a registered civil engineer with broad experience in surface and sub-surface hydrology.

#### PROJECT BENEFITS

- A collaborative *process* to evaluate sustainable flood protection tools;
- A final *product* identifying goals and priorities for flood control and habitat enhancement and outlines agreed-upon actions and implementation measures.

#### WATERSHED BENEFITS

- Protection of life and property from peak flow flooding;
- Protection of property owners from condemnation by dam development;
- Groundwater recharge;
- Recovery of at-risk species;
- Rehabilitation of natural processes
- Restoration of functional habitats.

#### PROJECT TIMELINE/DELIVERABLES

Phase I includes hiring the project coordinator and technical experts, establishing the stakeholder steering committee and identifying potential watershed management/flood control tools for study. Phase II includes preliminary study and technical



analysis to determine ecological benefits, potential impacts and implementation options. Phase III will present the toolbox information to stakeholder groups for further input. Phase IV will produce the final report outlining and prioritizing objectives and options based on this input.

FUNDING REQUESTED FOR PHASES I-IV: \$216,150

### III. PROJECT DESCRIPTION

#### PROPOSED SCOPE OF WORK

The proposed project is the first step toward developing a consensus-based region-wide flood management solution for the Yuba River watershed. Flood control management efforts to date have revolved almost exclusively around dams and other structural components, to the exclusion of more ecologically sensitive, non-dam alternatives. We believe there is interest on the part of stakeholders in the upper and lower watershed to collaboratively address flood control issues with the goal of achieving needed protection while protecting and enhancing habitat and processes that support at-risk species like chinook salmon and steelhead trout.

#### Project Approach:

As noted in Issue 1 of the *Sacramento and San Joaquin River Basins Comprehensive Study Newsletter*, the Sacramento and San Joaquin river systems have been modified and managed to provide for water supply, transportation, irrigation, recreation, flood control and other societal needs. But over time, society's priorities have changed, along with our understanding of the need for more effective, long-term approaches to flood control and ecosystem restoration.

This project proposes to work with watershed stakeholders and technical experts to identify and analyze ecologically sustainable flood management alternatives for the Yuba watershed. We are particularly interested in looking at alternatives that can achieve needed protection while preserving existing and potential future salmon and steelhead habitat values as well as broader ecological benefits offered by the river.

Current flood control studies have failed to identify numerous non-dam alternatives for flood control and ecosystem restoration being successfully undertaken in other California watersheds. Tools such as upstream watershed management prescriptions, reoperation of existing facilities, relocation of facilities outside of the floodplain, purchase of floodplain easements, trans-basin diversions, flood bypasses, levee raises and set-backs, and dredging have been overlooked. Local capacity for creation of a River Conservancy is constrained; Yuba Tools will address this constraint.

**"To meet the changing needs of the Central Valley, the flood management system must adapt to prepare for future population increases in California and include approaches that take into account the many interrelated benefits offered by the river system."**  
[emphasis added; *Comprehensive Study Newsletter, Issue 1*]

This 18-month-long YUBA TOOLS project will give stakeholders in the Yuba a process for evaluating alternative methods of flood control protection and a product (the final report) that 1.) identifies objectives and priorities for flood control and habitat enhancement, 2.) outlines agreed-upon actions and implementation plans to achieve flood control and habitat enhancement benefits, 3.) serves as a tool for subsequent project phases, including cumulative impact analysis and implementation funding, and 4.) maintains or improves watershed health and the health of high priority, at-risk species, including chinook salmon and steelhead trout. The key to this process is the involvement of stakeholders in both the identification of preferred techniques and the development of an acceptable approach for implementing these watershed enhancement and flood control tools.

#### Task List/Deliverables /Schedule:

Phase I of the project (3 months) includes hiring the project coordinator and technical experts, establishing the stakeholder steering committee and seeking public input to identify potential watershed management/flood control tools for study. Phase II (6 months) includes research and technical analysis



YUBA TOOLS

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of each alternative to determine ecological benefits, potential impacts and implementation options. Phase III (6 months) will present the toolbox information to stakeholder groups for input and prioritization. Phase IV (3 months) will produce the final report outlining the recommended set of ecosystem objectives and flood control options based on stakeholder input. Subsequent phases will include more in-depth cumulative analysis and potential implementation funding for the recommended actions. SYRCL is currently seeking funding for Phases I – IV. Subsequent phases will be funded separately.

**Project Implementation Chart**

TASK	SCHEDULE	LEAD	DELIVERABLE
<b>Phase I</b>			
Finalize contract w/CalFed	Month 1	SYRCL	Signed Contract
Establish Stakeholder Steering Comm	Month 1	SYRCL	Committee
Develop RFP & Hire Project Coordinator	Month 2	Steering Comm	Project Coordinator
Identify & hire technical experts needed	Month 3	Strg Comm/PC	Technical Team
Scope alternative tools for evaluation, including public scoping meetings	Month 4-6	Strg Comm/PC	List of alternatives
<b>Phase II</b>			
Analyze benefits/impacts & implementation options	Month 4-9	Strg Comm/Tech	Tool Box analysis
<b>Phase III</b>			
Seek individual input on tool box alternatives	Month 7-12	Proj Coord/Tech	Comments on alternatives
Seek input from stakeholder groups in watershed	Month 7-12	Proj Coord/Tech	Comments on alternatives
<b>Phase IV</b>			
Revise alternatives based on Phase III Input	Month 13-15	Proj Coord/Tech	Revised draft
Finalize study and distribute	Month 16-18	Proj Coord	Final Study Report
<b>Subsequent Phases</b>			
<i>Complete additional technical analysis of recommended actions</i>	<i>Post-project</i>	<i>To be determined</i>	<i>Not applicable</i>
<i>Seek funding for implementing actions recommended in Phase IV final report</i>	<i>Post-project</i>	<i>To be determined</i>	<i>Not applicable</i>
<i>Implement actions</i>	<i>Post-project</i>	<i>To be determined</i>	<i>Not applicable</i>
<i>Monitor actions</i>	<i>Post-project</i>	<i>To be determined</i>	<i>Not applicable</i>
<b>Ongoing Tasks</b>			
Project Management	Months 1-18	SYRCL	
General public outreach	Months 2-18	Proj Coord	

SYRCL is only seeking funding for Phases I-IV at this time. Since the YUBA TOOLS project is based on bringing a combination of technical expertise and collaborative decision-making to bear on watershed and flood control issues in the upper and lower watershed, each of the four phases is critical to the overall success of the project. Additional phases will be pursued separately, once the YUBA TOOLS final report is complete.

**LOCATION/GEOGRAPHIC BOUNDARIES:**

This project focuses on the upper and lower Yuba River watershed. The Yuba River watershed drains approximately 1,300 square miles of the western Sierra Nevada slope and includes portions of Sierra, Placer, Yuba and Nevada counties. As a tributary to the Feather River, which, in turn, feeds into the Sacramento River, the Yuba is considered part of the Feather River/Sutter Basin Ecological Management Zone.

**California Hydrologic Map Unit Numbers:**

- 18020107 (Lower Yuba)
- 18020125 (Upper Yuba).



YUBA TOOLS

#### IV. ECOLOGICAL/BIOLOGICAL BENEFITS

##### ECOLOGICAL/BIOLOGICAL OBJECTIVES

The primary ecological/biological objective for the YUBA TOOLS project is to protect and enhance key species populations, habitat and natural processes in the Yuba watershed by evaluating ecologically sustainable, *non-dam* flood control alternatives to achieve needed flood control protection.

##### THE HYPOTHESIS

Can non-dam flood control alternatives in the Yuba watershed provide sufficient flood control protection to meet the needs of downstream human communities without further jeopardizing the fragile populations of CalFed high priority at-risk species supported by the Yuba River, including **fall-run and spring-run chinook salmon, steelhead trout and American shad?** (ERPP Vol. II, p. 275).

##### THE SECONDARY QUESTION

To what extent can non-dam flood control alternatives provide for other needs, such as:

- a.) enhancing and/or protecting against loss of **riparian wetlands, shaded riverine aquatic habitat, freshwater fish habitat and other essential fish habitat** to dam/reservoir construction (ERPP Vol. II, p. 275); and
- b.) enhancing or protecting against degradation of ecological processes, including **streamflow, stream meander, coarse sediment supply, floodplain processes, and water temperature**, through techniques such as levee setbacks, meander zones, floodplain conservation easements, etc. (ERPP, Vol. II, p. 275).

In addition, by showing that ecologically sensitive watershed management and flood control techniques can be used in place of dams and reservoirs to achieve flood protection, the YUBA TOOLS study can aid in justifying reductions in floodplain development and structure-based stressors such as new dams/reservoirs, floodplain encroachment, insufficient flows, high water temperatures, poor water quality, and stranding of fish (ERPP, Vol. II, p. 276).

Taken more generally, the study results will help support three out of the CalFed Bay-Delta program's four overall objectives, including improving habitats and natural functions to sustain diverse and valuable plant and animal species (Ecosystem Quality), providing good water quality for all beneficial uses (Water Quality), and reducing risk to land use and associated activities from catastrophic levee failure (Levee System Integrity).

##### ERPP Strategic Plan and Ecosystem Restoration Goals addressed by this project:

- Achieve recovery of at-risk native species. Fall-run and spring-run chinook salmon and steelhead; fall-run chinook is the most abundant and important of anadromous fish species in the lower Yuba river, historically supporting as much as 15% of the annual fall run in the Sacramento River system; According to John Nelson at Department of Fish & Game, approximately 33% of those salmon spawn in each of three main reaches: Englebright Dam to Highway 20, Highway 20 to Daguerre Point dam, and downstream of Daguerre. Best professional judgment indicates that holding habitat for spring-run salmon is generally above Highway 20, with spawning occurring from Englebright to Daguerre. The greatest steelhead juvenile abundance is thought to be above Highway 20. These are all areas that would be impacted by various flood control alternatives being proposed by YCWA, including the Parks Bar detention basin, Parks Bar reservoir, Narrows dam/reservoir and Parks Bar and Dry Creek reservoir projects] (ERPP Vol. II, p. 281 and YCWA *Element Screening Matrix* APPENDIX D);
- Rehabilitate natural processes in the Bay-Delta system to support natural aquatic and associated terrestrial biotic communities in ways that favor native members of those communities. A study of non-dam flood control alternatives improves our opportunity to achieve targets and programmatic actions for the Feather River Ecological Management Zone and Yuba River Ecological Management Unit, including: maintaining or improving COARSE SEDIMENT SUPPLY (Target 1, ERPP Vol. II, p. 295); preserving and expanding STREAM MEANDER by acquiring riparian and meander-zone lands through purchase, easements, or voluntary preservation, establishing a process for reimbursing landowners for lands lost to natural meander processes, and developing a cooperative program to remove riprap and relocate other structures that impair stream meander (Target 1: Programmatic Actions



1A-1C, ERPP Vol. II, p. 296); restoring and improving opportunities for NATURAL FLOODPLAIN AND FLOOD PROCESSES through levee setbacks, stream channel and overflow basin configurations within the floodplain, minimizing effects of permanent structures on floodplain processes, developing a floodplain management plan (Target 1: Programmatic Actions 1A, 1B, 1C, and 1E, ERPP Vol. II, p. 296); improving water quality conditions to benefit anadromous fish by developing a cooperative approach to operating reservoirs in the Yuba River watershed to provide ADEQUATE WATER TEMPERATURES (Target 1: Programmatic Actions 1C, 1E and 1F, ERPP Vol. II, p. 297).

- Maintain and enhance populations of selected species for sustainable commercial and recreational harvest [seasonal American shad sport fishery from Late April to July, which has declined significantly in the past two decades from 30,000 - 40,000 spawning adults in 1968 to a fraction of that number more recently] (ERPP Vol. II, p. 281);
- Protect or restore functional habitat types throughout the watershed for public values, such as recreation, scientific research and aesthetics. The YUBA TOOLS study improves opportunities to achieve RIPARIAN AND RIVERINE AQUATIC HABITAT-related targets and programmatic actions including: providing conditions for riparian vegetation growth through purchasing streambank conservation easements or establishing voluntary incentive programs, evaluating benefits of restoring stream-channel and riparian habitats (Target: Programmatic Actions 1A and 1B, ERPP Vol. II, p. 298-299); and improvements to existing FRESHWATER AND ESSENTIAL FISH HABITAT, through integration of actions related to ecological processes, habitats and stressor reduction (Target 1, ERPP Vol. II, p. 299).
- Reduce stressors to improve and maintain connections between upstream fish holding, spawning and rearing areas and the Sacramento River. The YUBA TOOLS study helps advance the effort to reduce or eliminate structure-related stressors by finding alternatives to WATER DIVERSIONS and NEW DAMS OR RESERVOIRS (ERPP Vol. II, p. 300-301) and keeping new dams from eliminating the opportunity to study feasibility of reintroducing spring-run chinook salmon and steelhead upstream of Englebright Dam (Stage 1 Action, ERPP Vol. II, p. 301).

#### **Ecosystem-based Approach**

According to the overview of Volume II of the revised ERPP, the goal of restoration activities is to reestablish a balance in ecosystem structure and function so that lost ecological goods and services may be regained in some reasonable measure without destroying the fabric of the society they are intended to serve. The broad goal of ecosystem restoration, then, is to find patterns of human use and interaction with the natural environment that provide greater overall long-term benefits to society as a whole.

This project meets these ecosystem-based management needs by researching and analyzing ecologically sensitive ways to achieve floodplain management goals, using a collaborative, consensus-based process involving stakeholders in the upper and lower watershed. To date, floodplain management studies have revolved almost exclusively around large dam and other structural alternatives with little attention given to the many effective, non-structural tools available for flood control.

#### **Future Benefits/Sustainability**

Future benefits, in terms of implementation of project tools such as levee setbacks or breaches, purchase of floodplain conservation easements, removal of structures from the floodplain, etc., could include: streamflow, temperature and flood control storage improvements; maintenance of stream channel configuration and riparian vegetation of the lower river; protection of gravel sources; and improvement of stream channel and riparian habitat through conservation of lower river meander zone and active floodplain (see ERPP Vol. II, Overall Vision for Yuba River Ecological Management Unit, p. 286-7).

In addition, by proving that there are effective alternatives to building new dams and reservoirs for flood control, the YUBA TOOLS project would support the proposed study of restoring chinook salmon and steelhead access to historical holding, spawning and rearing areas upstream of Englebright Dam, an integral element of the CalFed adaptive management approach to ecosystem restoration (ERPP Vol. II, p. 287). A Farks Bar or Narrows Dam, currently proposed by Yuba County Water Agency, for example, would eliminate existing habitat and make habitat restoration above Englebright a moot point.

The proposed YUBA TOOLS study will also provide important educational benefits, as called for in the Strategic Plan and elsewhere. First, it will help improve our understanding of hydrologic, geomorphic



and ecological relationships and assist in the evaluation of ecologically based alternative water management strategies, as called for under the Habitat Restoration Topic Area and accompanying General Bay-Delta Focused Actions identified by the CalFed Integration Panel (2/99 *Proposal Solicitation Package*, p. 18-19). Through the Stakeholder Steering Committee and public outreach components of the project, we will also be able to make the connection between watershed management and flood control more accessible to and easily understood by local landowners, public agency officials, local political leaders and other decision-makers, and the general public. Benefits of this added exposure include the advancement of floodplain management technology, watershed restoration techniques and land use and management tools.

#### LINKAGES

The YUBA TOOLS project supports the extensive restoration and water quality improvement work already being undertaken by watershed coalitions previously funded through CalFed, Proposition 204, EPA grants and other programs. Major projects recently launched include:

- ❑ \$999,000 Yuba County *Yuba Watershed Protection/Restoration Project*, funded by Proposition 204 to address forest health, reduction of contaminants and reduction in sedimentation in the lower Yuba watershed;
- ❑ \$710,000 North San Juan Fire Protection District *Coordinated Yuba River Watershed Health Improvement and Monitoring Project*, funded by Proposition 204 to achieve coordinated watershed planning, implementation of water quality improvement and vegetation reduction projects and comprehensive water and soil quality monitoring in the Yuba watershed above Englebright Dam;
- ❑ \$264,000 *Department of Parks & Recreation South Yuba River Coordinated Watershed Management Plan Project*, funded by CalFed's Bay-Delta Ecosystem Restoration Projects and Programs May 1998 funding cycle;
- ❑ \$199,000 *Deer Creek Coordinated Watershed Restoration Plan* funded by Proposition 204 to coordinate efforts in this Yuba River tributary.
- ❑ *Englebright Work Group* effort to assist CalFed in identifying necessary technical and feasibility studies regarding possible reintroduction of salmon and steelhead in the upper watershed.

In addition, it augments Yuba County Water Agency's flood control study efforts by using a collaborative stakeholder involvement process to analyze the full range of watershed management and flood control alternatives, many of which have been rejected by YCWA without adequate consideration.

#### SYSTEM-WIDE ECOSYSTEM BENEFITS

Since this project is researching ways to achieve the necessary flood protection capacity without having to build a dam, it offers protection of existing habitat in the lower watershed and maintains opportunities for habitat improvement and even species reintroduction in the upper watershed.

#### COMPATIBILITY WITH NON-ECOSYSTEM OBJECTIVES

The project will be looking at levee setbacks, stream meander improvements, wet meadow/recharge basin restoration and other tools for achieving flood control benefits while protecting habitat for key species of concern and preserving opportunities for habitat and watershed restoration activities upstream and downstream. Therefore, the project supports non-ecosystem objectives, such as improved levee system integrity and non-structural flood control benefits.



## V. TECHNICAL FEASIBILITY AND TIMING

This project was developed, in part, in response to an existing study of flood control alternatives being conducted by the Yuba County Water Agency (YCWA). Ignoring ecologically based considerations and using only "level of protection provided," "reliability" and "financial practicality" as criteria, YCWA's preliminary screening process eliminated from consideration virtually all non-dam flood control alternatives (see APPENDIX D for *Yuba County Water Agency Supplemental Flood Control Program Project Update* and *Element Screening Matrix*). And it did so with little, if any, input from many of the key stakeholders in the watershed who would be affected by YCWA's decisions.

Due to the unfair advantage given to the larger, more damaging structural fixes and the lack of stakeholder input into the process, alternatives with fewer impacts on habitat, species and natural processes were thrown out without any further study. Only the dam-oriented solutions made it to the next round of screening, in which environmental and regional objectives will be considered, along with further engineering and financial evaluations.

YCWA's initial screening process also ignored potential affects on existing programs and restoration efforts already underway, as well as potential impacts to private property owners, business owners and other stakeholders in the watershed.

The remaining alternatives, each of which calls for construction of at least one major dam/reservoir, are inconsistent with CalFed's goals of maintaining or improving habitat, watershed processes and populations of high priority, at-risk species in the Yuba River watershed. We propose, therefore, to launch a comprehensive stakeholder-driven process to study, prioritize and provide implementation recommendations for a variety of non-dam-oriented upper watershed management tools and lower watershed flood control measures that together can provide the level of flood protection required by Yuba County.

Because Phases I-IV of this project simply implement a collaborative technical study and assessment, there is no need to prepare CEQA, NEPA or other environmental compliance documents, nor are any special permits or agreements needed to complete the project as proposed.

### SUBSEQUENT PROJECT PHASES

Subsequent phases for which we may seek additional funding at a future date include:

- Cumulative Impact analysis and other technical feasibility studies, based on the specific set of recommended actions resulting from the Phase IV final report;
- Implementation of the actions designed to achieve comprehensive flood control management for the watershed.



## VI. MONITORING AND DATA COLLECTION METHODOLOGY

The project team will make use of a wide range of existing data for the purposes of preliminary screening and assessment of proposed alternatives (see APPENDIX F for a bibliography of studies related to the Yuba watershed that will be used as a basis for the initial literature review). However, as no specific site data will be collected during Phases I-IV of this project, there is no need at this time for data collection/evaluation protocols or monitoring parameters.

Specific research methodology to test the primary and secondary hypotheses will be determined by the technical team in conjunction with the project coordinator and the Stakeholder Steering Committee, composed of key watershed coalition representatives from the Yuba Watershed Council, the Camptonville Proposition 204 Committee and the Lower Yuba River Technical Working Group.

Overall monitoring of the project will be conducted by SYRCL through weekly progress reports and monthly written reports to be submitted to SYRCL by the project coordinator and technical team. These reports will outline, at a minimum, 1.) progress on research related to different flood control alternatives, 2.) individuals and groups contacted and any presentations made as part of the public outreach and education component, and 3.) an accounting of income and expenditures for the month.



## VII. LOCAL INVOLVEMENT

### ENDORSEMENTS

This YUBA TOOLS project has strong support within the local community. It was endorsed by the Nevada County Board of Supervisors (see APPENDIX E for a copy of the Board Resolution) and the Yuba Watershed Council (see APPENDIX A for list of 21 collaborators comprising the Yuba Watershed Council).

The proposal has also been presented for informational purposes to the Camptonville Proposition 204 Committee and the Lower Yuba River Technical Working Group, two organizations we will work with to solicit stakeholder input, as well as to the Yuba-Sutter Flood Control Committee, the US Fish & Wildlife Service and the California Department of Fish & Game.

### LOCAL INVOLVEMENT

The YUBA TOOLS project brings great benefit to the residents of the Yuba watershed by evaluating and prioritizing potential watershed management and flood control alternatives that help meet CalFed's objectives regarding species enhancement and protection and improvement of habitat and natural processes. But it also complements the watershed health improvement work being done by other local organizations, which would be severely impacted by the current flood control alternatives being considered by YCWA. These local watershed restoration projects include:

- *Yuba Watershed Protection/Restoration Project* (Prop. 204), sponsored by Yuba County and the Camptonville Proposition 204 Committee;
- *Coordinated Yuba River Watershed Health Improvement and Monitoring Project* (Prop. 204), sponsored by the No. San Juan Fire District, the Nevada County RCD and the Yuba Watershed Council;
- *South Yuba River Coordinated Watershed Management Plan Project* (CalFed), sponsored by the Department of Parks & Recreation Gold Mines District and the Yuba Watershed Council;
- and the ongoing *Englebright Work Group*, sponsored by the CalFed Bay-Delta Program to identify necessary technical or feasibility studies regarding the potential reintroduction of chinook salmon and steelhead to the upper watershed.

Since the YUBA TOOLS project is research- and planning-oriented, it will have no direct impact on specific landowners or facility owners/operators in the watershed.

### PUBLIC OUTREACH

Working through existing multi-stakeholder groups operating in the watershed, the YUBA TOOLS project coordinator and technical team will solicit stakeholder input on the study alternatives and relative viability of each for achieving needed flood control protection in the Yuba watershed. The project team members will make presentations to individual stakeholders and stakeholder groups as well as progress reports to the primary watershed coalition groups active in the watershed. We will also produce outreach/educational materials to inform people about the various alternatives under study.

In addition, we will hold four major outreach meetings during the second half of the project - two in the lower watershed and two in the upper watershed - to seek input from the general public. The technical team will present its findings regarding the benefits, impacts and recommended implementation plan for each watershed management/flood control alternative being studied. The public will be asked to comment on each alternative or tool, including perceived benefits, impacts and any challenges to implementation. Based on this public input, the technical team will prioritize the different alternatives. This ranking, along with the background research information and implementation recommendations, will be used in subsequent project phases to develop a flood control management plan and to seek funding for implementation of the recommended flood control tools.

### OTHER ENDORSERS (see APPENDIX G for letters)

Planning & Conservation League  
Resource Renewal Institute  
Friends of Spenceville  
Natural Heritage Institute  
Sierra Nevada Alliance  
Yuba Goldfields Access Coalition  
Sierra County Planning Department  
Camptonville Community Services District  
Forest Issues Group  
Sierra Club  
US Forest Service  
Bureau of Land Management  
Department of Parks & Recreation  
Army Corps of Engineers  
US Geological Survey  
Eric Larsen, Univ. of California at Davis  
Betty Riley, High Sierra RC&D



YUBA TOOLS

VII-10

## VIII. COST

### BUDGET COSTS

SYRCL requests \$216,150 over 18 months from the CalFed Bay-Delta Program's Ecosystem Restoration Projects and Program to achieve its goal of studying watershed management and non-dam flood control tools to provide more ecologically sensitive flood protection in the Yuba watershed. The funding would support the following:

1. Hire experienced project coordinator	\$ 75,000
2. Contract with consulting hydrologist	\$ 60,000
3. Production of outreach materials and mailings	\$ 13,500
4. Additional technical consulting	\$ 37,500
5. Production of final report	\$ 10,500
6. Administration & overhead	\$ 19,650

TOTAL      \$216,150

TABLE 3. Total Budget

TASK	DIRECT LABOR HOURS	DIRECT SALARY & BENE	SERVICE CONTRACTS	MATERIAL & ACQUIS	MISC & OTHER DIRECT COSTS	OVERHEAD & INDIRECT COSTS	TOTAL COST
<b>Phase I</b>							
Finalize contract	30	\$ 780					\$ 780
Establish Steering Comm	30	\$ 780					\$ 780
Hire Proj Coord	30	\$ 780					\$ 780
Id tech experts	75	\$ 3,126					\$ 3,126
Scope tools	150	\$ 6,252					\$ 6,252
<b>Phase II</b>							
Analyze tools	600	\$ 24,999	\$ 43,500				\$ 68,499
<b>Phase III</b>							
Seek indiv input	263	\$ 10,936					\$ 10,936
Seek group input	225	\$ 9,375					\$ 9,375
<b>Phase IV</b>							
Revise alternatives	150	\$ 6,250	\$ 27,000				\$ 33,250
Finalize & distribute study	150	\$ 6,250	\$ 27,000		\$ 10,500		\$ 43,750
<b>Ongoing</b>							
Project Mgmt	375	\$ 9,750				\$ 7,560	\$ 17,310
General Public Outreach	188	\$ 7,812			\$ 13,500		\$ 21,312
<b>TOTALS</b>	<b>2,266</b>	<b>\$ 87,090</b>	<b>\$ 97,500</b>		<b>\$ 24,000</b>	<b>\$ 7,560</b>	<b>\$216,150</b>

Phase I of the project includes hiring the project coordinator, establishing the stakeholder steering committee, contracting with hydrologist and other technical experts and working with stakeholder groups to identify potential watershed management/flood control tools for further study. Phase II includes research and technical analysis of each alternative to determine ecological benefits, potential impacts and implementation options. Phase III will present the toolbox information to stakeholder groups to determine relative viability of each tool for use in the Yuba watershed. Phase IV is the production of the final report outlining and prioritizing the set of options based on stakeholder input. Project management will be handled primarily by the project coordinator, with project sponsor SYRCL providing initial hiring services (with help from a steering committee of representatives from the three counties and the Yuba-Sutter Flood Control Committee), networking and oversight (including inspection of work in progress and validation of costs), and coordination of grant reporting requirements.



YUBA TOOLS

VIII-11

TABLE 4. Quarterly Budget

TASK	OCT-DEC '99 1 <sup>st</sup> Quarter	JAN-MAR '00 2 <sup>nd</sup> Quarter	APR-JUN '00 3 <sup>rd</sup> Quarter	JUL-SEP '00 4 <sup>th</sup> Quarter	OCT-DEC '00 5 <sup>th</sup> Quarter	JAN-MAR '01 6 <sup>th</sup> Quarter	TOTAL BUDGET
<b>Phase I</b>							
Finalize contract	\$ 780	0	0	0	0	0	\$ 780
Establish Steering Comm	\$ 780	0	0	0	0	0	\$ 780
Hire Proj Coord	\$ 780	0	0	0	0	0	\$ 780
Id tech experts	\$ 3,126	0	0	0	0	0	\$ 3,126
Scope tools	0	\$ 6,252	0	0	0	0	\$ 6,252
<b>Phase II</b>							
Analyze tools	0	\$ 22,833	\$ 45,666	0	0	0	\$ 68,499
<b>Phase III</b>							
Seek indiv input	0	0	\$ 5,468	\$ 5,468	0	0	\$ 10,936
Seek group input	0	0	\$ 4,687	\$ 4,688	0	0	\$ 9,375
<b>Phase IV</b>							
Revise alternatives	0	0	0	0	\$ 33,250	0	\$ 33,250
Finalize & distribute study	0	0	0	0	0	\$ 43,750	\$ 43,750
<b>Ongoing</b>							
Project Mgmt	\$ 4,847	\$ 1,904	\$ 1,904	\$ 1,904	\$ 1,904	\$ 4,847	\$ 17,310
General Public Outreach	\$ 1,555	\$ 1,555	\$ 8,323	\$ 8,324	\$ 1,555	0	\$ 21,312
<b>TOTALS</b>	<b>\$ 11,868</b>	<b>\$ 32,544</b>	<b>\$ 66,048</b>	<b>\$ 20,384</b>	<b>\$ 36,709</b>	<b>\$ 48,597</b>	<b>\$ 216,150</b>



YUBA TOOLS

VIII-12

## IX. COST SHARING

The YUBA TOOLS project will build extensively upon previously committed resources of the many local government bodies, agencies and community groups working on habitat restoration, watershed health and flood control issues in the watershed. We estimate that approximately \$20,000 worth of matching funds from SYRCL, agency personnel and coalition groups have already been devoted to reviewing and developing concepts, researching existing studies, and otherwise assisting in the development of this project to date. Existing information regarding Yuba River hydrology has been developed by the US Army Corps, the Yuba County Water Agency and the US Forest Service and is estimated to have a value in excess of \$4 million. Implementation of Yuba Tools will require additional matched resources by participating agencies and organizations of approximately \$200,000 in financial and human resources.



YUBA TOOLS

## X. APPLICANT QUALIFICATIONS

### SYRCL

The South Yuba River Citizens League (SYRCL) is a non-profit watershed organization in its 16<sup>th</sup> year of operation. SYRCL employs a fulltime executive director, a membership and volunteer coordinator, a development director and an office manager. Several consultants are retained for specific and ongoing projects, including federal and state river protection efforts, forest health issues, and alternative flood plain management strategies in the Yuba watershed. SYRCL has 2,100 dues-paying members and an active Board of Directors made up of professionals in the community.

SYRCL has close ties with several granting organizations, including the Compton Foundation, the Kenney Foundation, the Conservation Foundation, River Network, the Packard Foundation, the National Fish and Wildlife Foundation, and the Sierra Nevada Alliance. SYRCL has been designated the recipient of the Sierra's first RiverKeeper – citizen-based water quality monitoring and restoration – by the Yuba Watershed Council MOU, earmarking \$160,000 in monitoring funds under the California Proposition 204 Delta Watershed program.

Working closely with the Tahoe National Forest, Bureau of Land Management and California State Parks & Recreation, SYRCL is a lead organization in the development of the South Yuba River Coordinated Management Plan, another project funded under Proposition 204 and CalFed. SYRCL is also working with the California Department of Fish & Game on monitoring and fish counts in the lower Yuba River and with the Federal Energy Regulatory Commission on investigations of operations on Englebright Dam.

SYRCL will coordinate all funding for Phase I-IV of this YUBA TOOLS project. SYRCL will also direct and coordinate hiring of project coordinator and technical experts, with the help of a steering committee consisting of representatives from each County and the Yuba-Sutter Flood Control Committee, as well as handling project oversight and accounting.

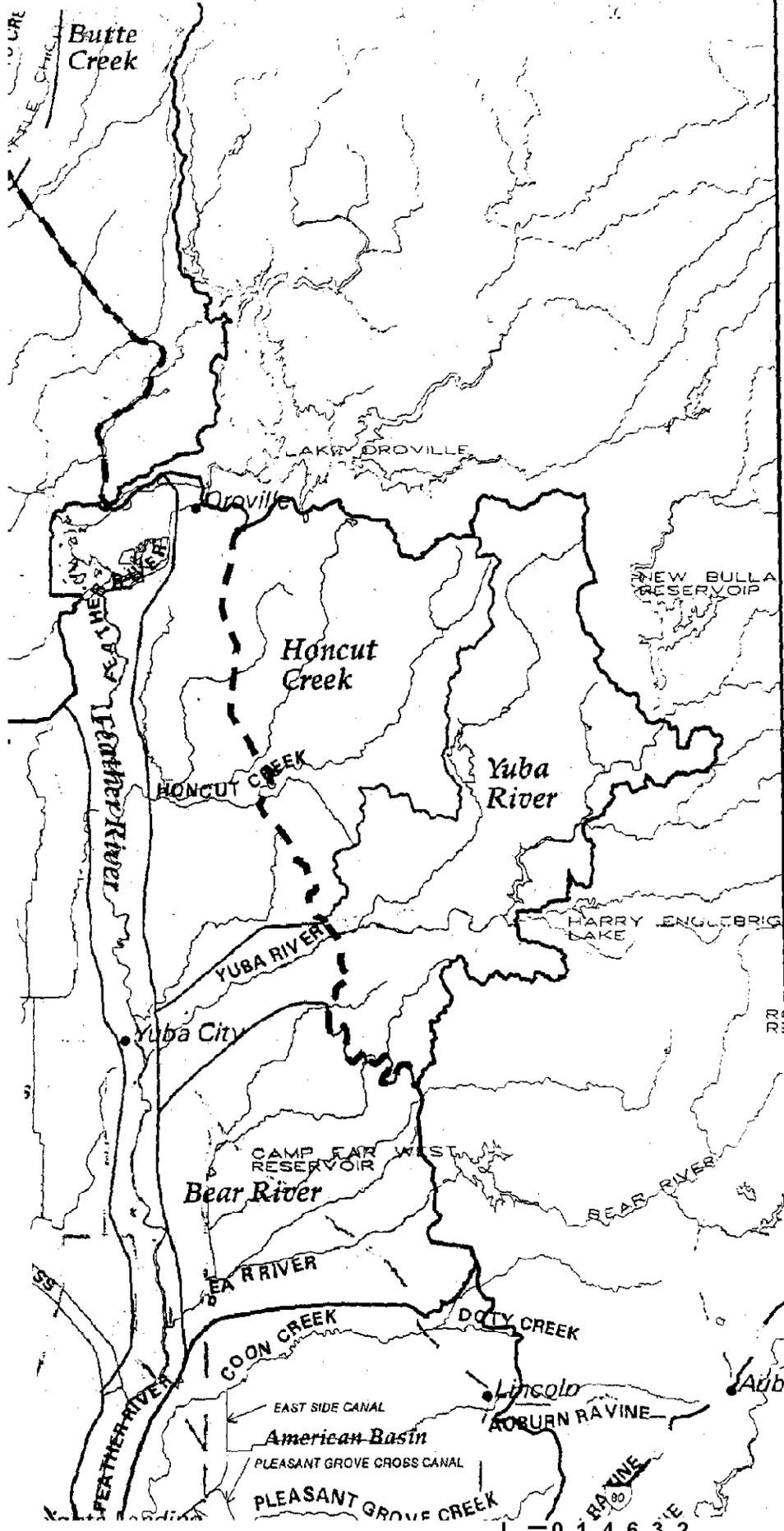
### RACHEL KAMMAN

Rachel Kamman will serve as the project team's hydrology peer reviewer. Ms. Kamman is a registered civil engineer with broad experience in surface and sub-surface hydrology. She specializes in applying hydrologic, hydraulic and hydrodynamic analysis to the protection, restoration and enhancement of coastal, estuarine and river systems. Over the past 10 years, Ms. Kamman directed and participated in numerous interdisciplinary studies integrating hydrology, geomorphology, biology and land-use issues (see APPENDIX H for Curriculum Vitae).

In performing this work, Ms. Kamman is interested in developing and applying innovative approaches, including advanced numerical models, to the assessment of flood and sediment transport processes in rivers, and circulation, sedimentation and contaminant transport processes in large bays and estuaries. Most recently, she has focused on the development and integration of field monitoring programs, numerical models and long-term management planning for the protection and enhancement of river and coastal resources. The objective of this work is to develop scientifically based decision support tools and facilitate their integration in resource management decision making, and in river and wetland restoration design.

Ms. Kamman holds a master's in Civil Engineering (Coastal and Hydraulic) from the University of California, Berkeley, and a B.A. in Civil Engineering (Hydraulics and Water Resources) from Lafayette College in Easton, PA.





Location Map

**Legend**

-  Ecological Management Zones and Units
-  Adjacent Ecological Management Unit
- Napa River* Ecological Unit Name
- Bear Creek* Important Streams
-  Valley Floor Perimeter (approximate 300-foot elevation)
-  Interstate Highway
-  State Highway

1 - 0 1 4 6 3 2

XI. APPENDICES

Appendix A	Yuba Watershed Council
Appendix B	Nevada County Board of Supervisors Resolution #99168
Appendix C	Camptonville Proposition 204 Committee
Appendix D	Yuba River Fisheries Technical Work Group
Appendix E	Letters of Support and Endorsement for Yuba Tools
Appendix F	Yuba River Research Bibliography and Yuba River Conceptual Model
Appendix G	Summary of Major Floods in the Yuba and Feather Watersheds
Appendix H	Rachel Z. Kamman, Curriculum Vitae

ornu





United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

Grass Valley Service Center  
113 Presley Way, Suite 1  
Grass Valley, CA 95945  
(530)272-3417

April 14, 1999

To CALFED:

As Chairperson of the Yuba Watershed Council, I am communicating to CALFED the unanimous endorsement of the "Yuba Tools" proposal by the Council on April 8, 1999.

The Yuba Watershed Council is one of the most successful collaborative watershed efforts in the Sierra Nevada and represents 21 local, state and federal stakeholders.

Thank you for your attention to this matter.

Sincerely,

Ron Zinke  
District Conservationist  
Natural Resources Conservation Service  
Chairperson of the Yuba Watershed Council

The United States Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication or program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2800 (voice and TDD). To file a complaint of discrimination, write USCA, Director, Office of Civil Rights, Room 328W, 14th and Independence Avenue, SW, Washington, DC 20250-8410 or call (202) 720-6884 (voice or TDD). USDA is an equal opportunity provider and employer.

## MEMORANDUM OF UNDERSTANDING

Between the

Nevada County Resource Conservation District, County of Nevada, US Forest Service, USDA Natural Resources Conservation Service, California Department of Forestry and Fire Protection, California State Parks, Northern Sierra Air Quality Management District, North San Juan Fire Protection District, Yuba Watershed Institute, South Yuba River Citizens League, City of Nevada City, Bureau of Land Management, Nevada County Superintendent of Schools Office, Friends of Deer Creek.

This Memorandum of Understanding (MOU) is made and entered into between the above signatories.

### I. PURPOSE

The purpose of this MOU is to establish a framework upon which the parties may cooperatively plan mutually beneficial work projects and activities envisioned by the State of California Proposition 204, California Water Code, Division 24, Safe, Clean, Reliable Water Supply Act, Article 5, Delta Tributary Watershed Program.

### II. INTRODUCTION

WHEREAS, all parties have a mutual interest in developing watershed rehabilitation projects to protect regional water quality and corresponding watershed properties for the public good; and

WHEREAS, all parties have the public responsibility to identify and take corrective actions where water quality may become degraded; and

WHEREAS, all parties administer properties that are eligible for grants provided under the Delta Tributary Watershed Program.

NOW, THEREFORE, in consideration of the above premises, the parties hereto agree as follows:

### III. PARTIES AGREE TO

1. Actively pursue opportunities for mutually beneficial work projects or activities that fit under the Delta Tributary Watershed Program.
2. Enter into supplemental agreements or other legal instruments with each other to implement any grant funding received under the auspices of this program.

## IV. GENERAL TERMS AND CONDITIONS

1. This agreement is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to this instrument will be handled in accordance with applicable laws, regulations, and procedures including those for Government procurement. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the parties and shall be independently authorized by appropriate statutory authority. This instrument does not give that authority.
2. Modifications within the scope of this instrument shall be made by the issuance of a bilaterally executed modification prior to any changes being performed.
3. This instrument in no way restricts any signatory party from participating in similar activities with other public or private agencies, organizations and individuals.
4. Any signatory party, in writing, may request termination of their participation at any time before the date of expiration.

This instrument is executed as of the last date shown below and will expire on September 30, 2001, at which time it will be subject to review, renewal, or expiration.

Kerry Arnett 12/18/97  
 Kerry Arnett, President  
 Nevada County Resource Conservation District

Rene Antonson 1/6/98  
 Rene Antonson, Chairman, Sam Dardick  
 Nevada County Board of Supervisors

John H. Skinner 12/19/97  
 John Skinner, Forest Supervisor  
 US Forest Service, Tahoe National Forest

Ron Zinke 12-22-97  
 Ron Zinke, District Conservationist  
 USDA Natural Resources Conservation Service

Jim Marchio 12-18-97  
Jim Marchio, Unit Chief  
California Department of Forestry and Fire Protection

J. Ray Patton  
J. Ray Patton, Park Superintendent  
California State Parks

Rodney A. Hill 12/17/97  
Rodney A. Hill, Air Pollution Control Officer -  
Northern Sierra Air Quality Management District

Charlotte Killigrew 12/16/97  
Charlotte Killigrew, Chairperson, Board of Directors  
North San Juan Fire Protection District

Bob Erickson 12/17/97  
Bob Erickson, President, Yuba Watershed Institute

Roger Hicks 12/24/97  
Roger Hicks, President, Board of Directors  
South Yuba River Citizens League

Harry Stewart 12/17/97  
Harry Stewart, Mayor, City of Nevada City

Deane Swickard 12/21/97  
Deane Swickard, Field Manager  
Bureau of Land Management

Terence McAteer 12/18/97  
Terence McAteer, Superintendent of Schools, Nevada County

Mary Anne Kreshka 12/16/97  
Mary Anne Kreshka, Chairperson, Friends of Deer Creek

APPENDIX B

NEVADA COUNTY BOARD OF SUPERVISORS RESOLUTION 99168

Resolution Attached.





# RESOLUTION No. 99168

## OF THE BOARD OF SUPERVISORS OF THE COUNTY OF NEVADA

### A RESOLUTION SUPPORTING SUBMISSION OF A 1999 CALFED ECOSYSTEM RESTORATION GRANT PROPOSAL BY THE SOUTH YUBA RIVER CITIZENS LEAGUE (SYRCL) TO BEGIN A FACILITATED COLLABORATIVE EFFORT TO EVALUATE NON-DAM FLOOD CONTROL ALTERNATIVES FOR THE YUBA WATERSHED

WHEREAS, CALFED, through the 1999 Ecosystem Restoration Grant Program, provides an opportunity for counties whose watersheds influence the Bay-Delta, including Nevada County, to obtain grant funding to improve those watersheds; and

WHEREAS, this community recognizes the Yuba Watershed Council as a long-term collaborative effort designed to address the social, economic and environmental concerns within the Yuba Watershed, and

WHEREAS, the County is in support of the cooperative effort of all the agencies and community groups that participate in the relevant collaborative processes; and

WHEREAS, the South Yuba River Citizens League will serve as the lead organization and fiscal agent for the cooperative flood control assessment project described in the grant proposal.

WHEREAS, this proposal has been endorsed by the individual members of the Yuba Watershed Council.

NOW, THEREFORE, BE IT RESOLVED, that the Nevada County Board of Supervisors does hereby support the submission of a CALFED 1999 Ecosystem Restoration Grant proposal by SYRCL to begin a facilitated collaborative effort to evaluate non-dam flood control alternatives for the Yuba Watershed.

PASSED AND ADOPTED by the Board of Supervisors of the County of Nevada at a regular meeting of said Board, held on the 13th day of April, 1999, by the following vote of said Board:

- Ayes: Supervisors Peter Van Zant, Bruce Conklin, Elizabeth Martin, Sam Dardick.
- Noes: Karen Knecht.
- Absent: None.
- Abstain: None.

ATTEST:

CATHY R. THOMPSON

Clerk of the Board of Supervisors

By Cathy R. Thompson

Peter Van Zant  
Chairman

THE FOREGOING INSTRUMENT IS A  
CORRECT COPY OF THE ORIGINAL Res 99. 168  
ON FILE IN THIS OFFICE

ATTEST: APR 15 1999

CATHY R. THOMPSON  
Clerk of the Board of Supervisors  
COUNTY OF NEVADA

By G. Martinson Deputy

DATE	COPIES SENT TO
4-14-99	RCD

APPENDIX C

CAMPTONVILLE PROP. 204 COMMITTEE  
(ALSO KNOWN AS YUBA WATERSHED PROTECTION AND FIRE SAFE COUNCIL)

YUBA TOOLS WAS PRESENTED TO THE CAMPTONVILLE PROPOSITION 204 COMMITTEE IN MARCH, 1999.  
THE COMMITTEE IS NOT ORGANIZED TO ENDORSE SPECIFIC PROPOSALS.

COOPERATING AGENCIES

California Department of Forestry and Fire Protection (CDF)  
United State Forest Service  
California Department of Fish and Game  
Dobbins/Oregon House Fire Protection Department  
Foothill Fire Department  
Camptonville Fire Department  
Smartsville Fire Department  
Loma Rica/Browns Valley Fire Department  
USDA Natural Resources Conservation Service  
Private Industrial Timber Landowners  
Pacific Gas & Electric  
Yuba County  
UC Cooperative Extension  
High Sierra Resource Conservation & Development Area  
Yuba County Resource Conservation District  
Yuba County Water Agency  
USDA Farm Services Agency



APPENDIX D

YUBA RIVER FISHERIES TECHNICAL WORKING GROUP

COOPERATORS

Yuba Tools was developed with significant input by members of the Yuba River Fisheries Technical Work Group. On April 13, 1999 the Yuba Tools proposal was formally presented to the Yuba River Fisheries Technical Work Group. YRFTWG unanimously endorsed the following statement:

The Yuba River Fisheries Technical Work Group endorses collaborative stakeholder based investigations of flood control and watershed management activities in the Yuba Watershed.

The Yuba River Fisheries Technical Work Group is comprised of the following:

Michael Morse, US Fish and Wildlife Service  
Gary Taylor, US Fish and Wildlife Service  
William Mitchell, Jones & Stokes  
Carl Mesick, US Fish and Wildlife Service/AFRP  
Craig Fleming, US Fish and Wildlife Service/AFRP  
Julie Brown, California Department of Fish and Game  
Craig Seltnerich, PG&E Aquatic Fisheries Biologist  
Shawn Garvey, SYRCL  
Michael Bryan, Surface Water Resources Inc.  
Jennifer Carville, Friends of the River



## Yuba River Technical Working Group Agenda

Date: April 13, 1999

Location: 3310 El Camino, Conference Room B  
Sacramento, Ca.

Time: 0900-1200

Action Item from February 3, 1999 meeting

Get individual agency management input on letters of support, MOU and the like.

1. Agenda and minutes review.
2. CALFED proposals
  - a) Mike B: Category III proposal for Enhancement/Implementation Plan
  - b) Shawn G: Upper Watershed Restoration Plan
  - c) Shawn G: All inclusive watershed group for Yuba River
  - d) ~~Shawn G: River Keeper~~
3. Updates
  - a) Bill M and Carl M: Steelhead Life History Study
  - b) Carl M and John N: Daguerre Point Dam Army Corps Study
  - c) John N: Screens at Daguerre Point Dam
  - d) Craig F: Yuba Goldfields Barrier Feasibility study
4. Letterhead/group support/MOU
5. Charge and Ground Rules
6. Next meeting?

APPENDIX E  
LETTERS OF SUPPORT AND ENDORSEMENT

20  
19



YUBA TOOLS

XI-20

I - 0 1 4 6 4 3

I-014643



United States  
Department of  
Agriculture

Forest  
Service

Tahoe  
National  
Forest

631 Coyote Street  
Nevada City, CA  
95959-2250  
530 265-4531  
530 478-6118 TDD  
530 478-6109 FAX

File Code: 2520

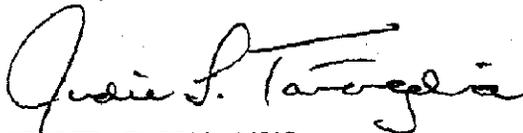
Date: APR 9 1999

Mr. Shawn Garvey, Executive Director  
South Yuba River Citizen's League  
P.O. Box 841  
Nevada City, CA 95959

Dear Shawn:

Regarding the discussion you and I had, I just wanted to reiterate that I support the idea of a variety of stakeholders getting together to discuss watershed issues to hopefully develop widely supported solutions where there now exist varying levels of disagreement on those issues. The Tahoe National Forest will certainly be happy to participate in this kind of approach when public interests on the National Forest are affected.

Sincerely,

  
for STEVEN T. EUBANKS  
Forest Supervisor



Caring for the Land and Serving People

Printed on Recycled Paper



I - 0 1 4 6 4 4

I-014644

... Collaborators and Partners

**Subject: RE: Yuba Tools: Collaborators and Partners**

**Date: Mon, 12 Apr 1999 16:40:32 -0700**

**From: Eric Larsen <ewlarsen@ucdavis.edu>**

**To: "Shawn Garvey" <syrcl@syrcl.org>**

Shawn,

If you want to add my name to the list of supporters of your CALFED grant,  
do.

Eric

**Subject: Re: Yuba Tools: Collaborators and Partners**

**Date: Tue, 6 Apr 1999 18:05:51 -0700**

**From: "Jerry Meral" <jmeral@pcl.org>**

**To: "Shawn Garvey" <syrc1@syrc1.org>**

Shawn

If it is of any value, please add PCL.

Jerry

-----Original Message-----

From: Shawn Garvey <syrc1@syrc1.org>

Cc: Beckwitt <sbihome@oro.net>

Date: Tuesday, April 06, 1999 1:02 PM

Subject: Yuba Tools: Collaborators and Partners

>Friends ---

>

>Attached is a grant labeled "Yuba Tools" that will be submitted to  
>CALFED on April 16. "Yuba Tools" proposes to establish a collaborative  
>effort between stakeholders in Yuba County, Nevada County and Sierra  
>County towards evaluation of non-dam flood control proposals common in  
>other Sierra Watersheds -- levee setbacks, floodplain easements,  
>watershed management, etc -- but to date have not been seriously (or at  
>all) discussed for implementation in the Yuba Watershed.

>

>The proposal has been presented to the Camptonville Proposition 204  
>Committee and the Lower Yuba Technical Working Group. It will be  
>presented to the Yuba Watershed Council for consideration of  
>endorsement. It will also be presented to the Nevada County Board of  
>Supervisors and approximately 20 other organizations for endorsement as  
>Partners.

>

>Please consider adding your name to the list of partners on this  
>important proposal. Please call with any questions or comments.

>

>Thank you,

>

>Shawn Garvey

>



# Sierra Nevada Group

MOTHER LODGE CHAPTER

SIERRA CLUB

5/12/99

Lester Snow, Executive Director  
CalFed 1416 9<sup>th</sup> St., Rm. 1155  
Sacramento, CA 95814

Dear Mr. Snow:

I fear that present efforts to resolve flooding issues on the Yuba have become fixated on dams. There are potentially other solutions which might be less expensive yet equally effective. I strongly support the Yuba Tools project as a means to examine these other possibilities.

Sincerely,

James Hurley  
Sierra Nevada Group of the Sierra Club

P.O. Box 1042 • Nevada City, California 95959

**Subject: Re: Yuba Tools: Collaborators and Partners**

**Date:** Mon, 12 Apr 1999 16:55:07 -0500

**From:** "Laurel Ames" <sierran@sierra.net>

**To:** "Shawn Garvey" <syrc1@syrc1.org>

Shawn - thank you for saying yes to a board position. And yes, the Alliance will be collaborators. Laurel

-----Original Message-----

**From:** Shawn Garvey <syrc1@syrc1.org>

**Cc:** Beckwitt <sbihome@oro.net>

**Date:** Tuesday, April 06, 1999 3:07 PM

**Subject:** Yuba Tools: Collaborators and Partners

Friends ---

Attached is a grant labeled "Yuba Tools" that will be submitted to CALFED on April 16. "Yuba Tools" proposes to establish a collaborative effort between stakeholders in Yuba County, Nevada County and Sierra County towards evaluation of non-dam flood control proposals common in other Sierra Watersheds -- levee setbacks, floodplain easements, watershed management, etc -- but to date have not been seriously (or at all) discussed for implementation in the Yuba Watershed.

The proposal has been presented to the Camptonville Proposition 204 Committee and the Lower Yuba Technical Working Group. It will be presented to the Yuba Watershed Council for consideration of endorsement. It will also be presented to the Nevada County Board of Supervisors and approximately 20 other organizations for endorsement as Partners.

Please consider adding your name to the list of partners on this important proposal. Please call with any questions or comments.

Thank you,

Shawn Garvey

**Subject: Re: Yuba Tools ... a charm....**  
**Date: Mon, 12 Apr 1999 08:01:52**  
**From: Nicholas George <ngeorge@jps.net>**  
**To: Shawn Garvey <syrc1@syrc1.org>**

I, Nick Jedenoff, in confirmation of my conversation with SYRCL Executive director Shawn Garvey on Sunday 4/11/99, hereby provide written confirmation that I endorse and support the proposal attached <"C:\INJCURR\DOWNLOA1\YubaTool.doc"> as of this date, Monday 4/12/99.

Nick Jedenoff  
P O Box 1784  
Cedar Ridge CA 95924-1784  
(530) 274-1181

(I have made note of minor typographical errors in the attachment which do not change its iintended meaning (see attachment for details.)

+++++

At 05:12 PM 4/9/99 -0700, you wrote:

>

>

>Nicholas George wrote:

>

>> Shawn, I will probably do as you suggest, after I receive the text. (The attachment was rejected)

>>

>> Reason: I have had "large message attachments disabled", and "do not store messages on server" enabled as an additional hedge against virus infection. So I will change the settings, and invite your re-transmission.

>>

>> Nick

>>

>>

+++++

>>

>> At 02:00 PM 4/9/99 -0700, you wrote:

>> >Nick --

>> >

>> >We would be honored if you would endorse the attached proposal for

>> >CALPED to provide flood control management for the entire Yuba

>> >Watershed. It was endorsed 15 - 0 at Wednesday's Yuba Watershed Council

>> >meeting.

>> >If this is okay, please fax a 1 paragraph letter of support by Tuesday

>> >to 530.265.6232 or email here....

>> >Thanks much.

>> >

>> >Shawn

>> >Content-Type: application/msword;

>> > name="Yuba Tools.doc"

>> >

>> >

>> >

>> >

>> >WARNING: The remainder of this message has not been transferred.

>> >The estimated size of this message is 115448 bytes.

>> >Click on the server retrieve icon above and check mail again to get the

>> >whole thing. If the server retrieve icon is not showing, then this message

>> >is no longer on the server.

>> >

>

>Attachment Converted: "C:\INJCURR\DOWNLOA1\YubaTool.doc"

>

Re: Yuba Tools

**Subject: Re: Yuba Tools**

**Date:** Mon, 12 Apr 1999 14:36:59 -0700

**From:** Don Jacobson <dj@oro.net>

**To:** Shawn Garvey <syrc1@syrc1.org>

Shawn,

The Forest Issues Group enthusiastically supports Sout Yuba Citizens's League Yuba Tools Proposal.

Don Jacobson  
Coordinator  
Forest Issues Group  
P.O. Box 2167  
Grass Valley, CA 95945  
530-272-1433  
dj@oro.net

At 01:57 PM 4/9/99 , you wrote:

>Don ---

>

>Can I get a simple 1 sentence letter of support from you re: Yuba Tools  
>by next Tuesday? If so, please fax to 530.265.6232.

>

>Thank you very much.

>

>Shawn

Re: Thank you

**Subject: Re: Thank you**  
**Date:** Fri, 9 Apr 1999 16:01:38 -0800  
**From:** darcy@rri.org (Darcy Rollins)  
**To:** Shawn Garvey <syrc1@syrc1.org>

shawn-

Darcy Rollins  
Resource Renewal Institute  
Fort Mason Center, Pier One  
San Francisco, CA 94123  
Ph: 415 928 3774  
Fax: 415 928 5629

Darcy Rollins  
Coordinator, Special Projects  
Resource Renewal Institute  
(415) 928.3774  
darcy@rri.org

APPENDIX F  
A CONCEPTUAL MODEL OF THE AQUATIC ECOSYSTEM OF THE YUBA RIVER



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YUBA TOOLS

XI-21

I - 0 1 4 6 5 2

I-014652

**Draft**

**A Conceptual Model of the Aquatic Ecosystem of the  
Yuba River**

by

**The Yuba River Technical Work Group:  
Yuba County Water Agency  
Pacific Gas & Electric  
Friends of the River  
South Yuba River Citizen's League  
Department of Fish and Game  
U.S. Fish and Wildlife Service**

2 February 1999

I - 0 1 4 6 5 4

I-014654

## INTRODUCTION

The Yuba River watershed drains an area of about 1,350 square miles, extending from its confluence with the Feather River at Marysville to its headwaters in the Sierra Nevada. At about 33 miles upstream from the Feather River confluence, the Yuba River branches into the south, middle, and north forks, which flow through deep and relatively parallel canyons.

Hydraulic mining for gold was extensive in the Yuba River Watershed in the latter half of the 1800s. The sediment debris from this mining was so extensive that it has been estimated that the deposition of the debris in downstream reaches caused the elevation of the riverbed and floodplain to rise by as much as about 70 feet. Miners currently operating in the Yuba River have estimated that most of this sediment has eroded away, with about a 15-foot deep layer of debris remaining. These miners also claim that there is a large volume of mercury deep in the river's substrate that originated during mining operations during the 1800s.

The California Debris Commission, an element of the U.S. Army Corps of Engineers, began constructing small dams on the Yuba River in 1904 to reduce the downstream movement of hydraulic mining debris. Although hydraulic mining ceased in the late 1800s, it was assumed that mining would resume, although it never did. In 1904 to 1905, Barrier No. 1 Debris Dam was constructed about 4.5 miles upstream from the present Daguerre Point Dam. This dam completely blocked upstream movement of anadromous fish until 1907, when it was destroyed by floods (Wooster and Wickwire 1970).

Daguerre Point Dam (Figure 1) was completed in 1906 and diversion of the river at the dam was completed in 1910. Although two fish ladders were constructed, they were ineffective except during very high flows and they were destroyed by floods in 1927-1928. The ladders were replaced in 1938 and they operated although ineffectively until 1950, when new more effective ladders were constructed.

Old Bullards Bar Dam was constructed on the north fork in 1921 for the Pacific Gas and Electric Company. New Bullards Bar Dam was constructed by Yuba County Water Agency between 1965 and 1970. In cooperation with CDFG, the power intake and outlet to the dam was located and operated to provide water temperatures of the flow releases that would benefit downstream fish populations.

Englebright Dam was constructed by the Army Corps in 1941 for sediment and flood control and it completely blocked anadromous fish from the upper Yuba River. During the 1997 flood, Englebright provided 16,000 acre-feet of flood water storage. Englebright Dam is located on the mainstem river about 24 miles from the Feather River confluence.

Immediately downstream of Englebright Dam, the river flows through a canyon called the "Narrows". Downstream of the Narrows, there is a wide, barren floodplain in which the river channel migrates back and forth during extreme floods.

There are three tributaries below Englebright Dam which include Deer Creek just below the dam

(at the Narrows), Sanford Creek just upstream of the Highway 20 bridge, and Dry creek between the Daguerre Point Dam and the Highway 20 bridge. There are three reservoirs on Deer Creek, which include Lake Wildwood (3,840 AF), Deer Creek Reservoir (1,400 AF) and Scotts Flat Reservoir (49,000 AF).

{Map of the upper and lower Yuba River}

### Fisheries

There are at least 28 species of resident and anadromous fish in the Yuba River (CDFG 1991). The anadromous species, which occur only downstream of Englebright Dam, include chinook salmon, steelhead trout, American shad, striped bass, green and white sturgeon, and Pacific lamprey. These species, particularly spring-run chinook and steelhead, were probably severely impacted by the near-complete blockage of upstream migration at Daguerre Point Dam and low flows and high water temperatures from 1910 to 1949. There are no data on the size of these populations prior to 1953 although it was not until 1952 that CDFG first recommended minimum instream flows for normal and near-normal water years below Englebright Dam to maintain fish populations (it is unknown whether the recommendations were implemented). It was not until 1962 that Yuba County Water Agency agreed to the following minimum instream flows for normal water years below Daguerre Point Dam for preserving and enhancing the fisheries:

October through December	400 cfs
January through June	245 cfs
July through September	70 cfs

Critical water year recommendations were lower, with a critical year defined as a water year for which the April 1 forecast predicted that streamflows in the Yuba River at Smartville will be 50% or less of normal. Flows during critical years were reduced by 15% to 30% compared to normal water years. Releases were not to go below 70 cfs at any time.

In 1965, minimum pool requirements at New Bullards Bar Reservoir (230,000 AF) and flow fluctuation regulations (500 cfs/hr) below Englebright Dam were implemented.

In 1991, CDFG (1991) recommended a new IFIM-water temperature model based flow schedule to be measured at the Marysville gage for normal and wet water years:

October 15 - March 31	700 cfs
April 1-30	1,000 cfs
May 1-31	2,000 cfs
June 1-30	1,500 cfs
July 1 - October 14	450 cfs

During dry water years, CDFG recommended that reductions in fishery flows and offstream diversions would be made on an equal percentage basis. The 1991 CDFG recommendations

have not been implemented. However in recent years, the Yuba County Water Agency has voluntarily exceeded the 1962 minimum flow requirements.

In 1953, CDFG began estimating the number of adult fall-run chinook salmon in the Yuba River.

Although the other species and salmon runs have not been surveyed, sport fishery surveys indicate there was a significant (a peak of 100,000 angler-days in 1965) population of American shad downstream of Daguerre Point Dam. Daguerre Point Dam is a barrier to migration of shad except during extremely high spring flows, such as occurred in 1969.

### Fall-Run Chinook Salmon

Fall-run chinook salmon are the most abundant anadromous fish, averaging about 13,000 fish annually from 1953 to 1992 with a high of 39,000 fish in 1982.

Adult fall-run chinook salmon begin to enter the western Delta near Chipps Island in July and August and they migrate upstream slowly, typically entering the Sacramento River tributaries in September. Adult migration into the Yuba River typically begins in September when attraction flows are adequate (Department of Fish and Game 1991). Studies in the Mokelumne River where video and trapping data at Woodbridge Dam provide an accurate census of migrating adults, indicates that migrations occurred from late October through December in 1990 and 1991 which were dry years (BioSystems Analysis, Inc. 1992), but began in mid August during wet years (EBMUD 1998 unpublished data).

Juvenile fall-run chinook in the Yuba River begin to emerge from the spawning gravel as fry (30-40 mm) beginning in January (Mitchell 1994a) and in 1993, the presence of 40 mm fish suggests that emergence continued through mid-August (Mitchell 1993b) when flows ranged between about 4,200 cfs in March and 2,100 cfs in August. Most of the fry and mid-sized juveniles observed in 1993 were adjacent to submerged willows and woody debris in secondary channels. In 1993, juveniles between 60 and 80 mm were collected at the Hallwood-Cordua screens beginning in late April, peaking in mid May, and tapering off by early June (S.P. Cramer & Associates, Inc. 1994). These fish were probably fall-run smolts migrating to the ocean and perhaps some of the fry observed in June through August were late-fall run fish.

### Spring-Run and Late Fall-Run Chinook Salmon

Smaller populations of spring-run and late fall-run chinook salmon are present in the Yuba River immediately below Englebright Dam although routine surveys to estimate their abundance are not conducted. During SCUBA and snorkeling surveys in August 1992 (Mitchell 1992a) and an aerial survey in mid September 1992 (Mitchell 1992b), several adult salmon were observed in the vicinity of Daguerre Point Dam. These fish were probably spring-run chinook salmon.

### Steelhead

There is also a self-sustaining population of steelhead, although some were stocked in the Yuba River from 1970 to 1979. In January 1994, several spawning steelhead and fifteen small, fresh redds were observed near the outlet from the Yuba Goldfields Mitchell (1994a). Almost no data

are available as to the abundance of steelhead.

#### American Shad

Adult American shad migrate into the lower Yuba River to spawn beginning in mid-May until late June when suitable water temperatures for spawning range between 57 °F and 70 °F. Studies conducted by Jones and Stokes (JSA) in spring 1990 indicated that when Englebright releases were about 1,000 cfs, shad spawned in large run-glides and shallow pools between Hallwood Boulevard and Daguerre Point Dam (Mitchell and Dunn 1990). JSA observed that shad preferred to spawn where velocities ranged between 1.5 and 1.9 ft/sec and at depths between 3.0 and 3.9 feet. Presumably shad cannot migrate past Daguerre Point Dam, except during flood flows such as occurred in 1969 when about 1% of the run was observed above the dam and May flows averaged 7,432 cfs. JSA also speculated that the number of adult shad that entered the Yuba was high when streamflows in the Yuba River were high, particularly if flows in the Feather were low. Large runs of shad were observed in the Yuba in 1969 and 1983, which were very wet years. A large run was observed in the Yuba River in 1990, when spring flows were increased from 331 cfs to about 1,000 cfs in the Yuba River for a study, while flows in the Feather River declined from 3,200 to 850 cfs. JSA speculated that the abundance of adult American shad in the Yuba River was limited by the magnitude of attraction flows and possibly unsuitable water temperatures (JSA 1990).

{Add paragraphs describing what we do know in terms of abundance or life history for each species or run in the Yuba River}

#### Englebright Dam

Englebright Dam was constructed about 12.5 miles upstream from Daguerre Point Dam in 1941 to control hydraulic mining debris and silt that never resumed after the dam was built. The Yuba County Water Agency estimates that there are about 4 million cubic yards of sediment that has been captured by the reservoir, or about one-third of the reservoir's capacity. The reservoir was designed to impound about 70,000 acre-feet of water and when the reservoir is full, about nine miles of the river is inundated. The Army Corps of Engineers operates the dam and the recreational facilities at the reservoir, which includes 100 campsites, picnic areas, and boating access facilities. There are two power generation facilities at the dam that produce 250 million kWh of electricity with a combined capacity of 62 MW. The Pacific Gas and Electric Company (PG&E) operates Narrows I Powerhouse on the left bank of the Yuba, just below the dam. PG&E also has water rights to 45,000 acre-feet of storage plus riparian rights. The Yuba County Water Agency has operated Narrows II Powerhouse, on the right bank about 400 feet downstream of the dam, since 1970. All water released from the reservoir is through the two powerhouses and consequently there is no flowing water in the 0.2 mile reach between the dam and Narrows I Powerhouse, except when the reservoir is spilling.

When powerhouse failures occur, flow releases are drastically reduced below the dam. This occurred during two occasions in spring 1998. On April 9, 1998 flows from Englebright Dam dropped from 4828 cfs to 669 cfs in about one hour and then quickly returned to 4743 cfs about

an hour later. On April 14, 1998 flows dropped from 6,000 cfs to 2,200 cfs in about one hour. The Grass Valley Union newspaper reported on 16 April 1998 that two eyewitnesses noted dead fish along the riverbank. The Yuba County Water Agency has a plan to reoperate their powerhouse such that failures can be repaired remotely and quickly to avoid lengthy flow reductions. The Yuba County Water Agency has requested that the criteria for flow fluctuations in the Yuba River should be reviewed.

The Narrows II Powerhouse operations and the elevation of Englebright Lake can affect the temperature of release flows. Although New Bullards Bar Dam has the ability to release water from varying depths from its cold water pool, this has limited effects on water temperatures downstream from Englebright Reservoir (Yuba County Water Agency 1998). Instead, the depth at which water is released from Englebright Reservoir, as it relates to the water temperature profile in the reservoir, is the primary factor controlling the release temperature from Englebright Dam. The current intake system is a tower that draws water from the surface down to an elevation of 439 feet above mean sea level, about 80 feet below the normal water surface elevation. The Yuba County Water Agency has proposed to extend the intake by about 90 feet deeper to about 10 to 15 feet above the reservoir's bottom (Yuba County Water Agency 1998). The new intake will be adjustable to draw water from a wide range of depths. By providing the ability to draw from the coldwater pool regardless of the reservoir level, it is expected that release temperatures will be reduced by 1.5°F to 6°F compared to existing conditions. The proposed construction schedule is from August through October or November 1999, which coincides with the maintenance of the turbines. Both activities would require shutdown of the powerhouse and construction would require the reservoir to be drawn down to 450 feet msl for about two weeks and then refilled to 490 ft msl for another two to four weeks.

The 206 (208, 260, or 280?) foot-high dam has no fish ladder and is the upstream limit for anadromous fish. Restoration of passage at Englebright Dam might provide additional habitat up to New Bullards Bar dam on the North Yuba River, Our House Dam on the Middle Fork Yuba River, and to a small natural falls near the town of Washington on the South Fork, a maximum of about 56 miles of additional habitat which is a three-fold increase (Yoshiyama et al. 1996). There are many small old, abandoned dams that might block passage and a survey of existing conditions is needed. Upstream habitat would also require increased flow releases and possibly flow stabilization from New Bullards Bar and Our House dams.

#### Daguerre Point Dam

Daguerre Point Dam was built in 1903-1906 by the California Debris Commission to contain hydraulic mining debris (Falxa 1994). The dam filled with about 880,000 cubic yards of sediment within 20 to 30 years of completion and currently has only a shallow pool, generally less than 15 feet, extending about 200 to 300 feet upstream of the dam. The dam is 24 feet high from the crest of its spillway to the apron on the downstream side of the dam. Fish Ladders are currently located on the north and south banks. The north ladder has a pool or resting area located near the downstream entrance but the south ladder does not. The existing fish ladders are relatively small compared to existing specifications for ladder design. When flows exceed about 16,000 cfs, a water surface elevation of 130 feet in the reservoir pool upstream of the dam, the

ladders are closed until the water surface elevation recedes to 127 feet. There are no data to evaluate whether adult salmon and steelhead can migrate over the dam via the water passing over the dam when the ladders are closed. The ladders are closed for a period of time about 50 percent of the years. In 1995, the ladders were closed from 9 January to 10 February. There is about 12 miles of habitat above Daguerre Point Dam to Englebright Dam.

An average of 28 to 33 percent of the river's flow is diverted at Daguerre Point Dam and Brown's Valley intake during May and June. During below normal water years, these diversions could take between 75 and 90% of the river's flow. Instream flow requirements are based on measurements at the Marysville gauge, which is downstream of Daguerre Point Dam, to partially compensate for these diversions.

Factors that may impede or prevent the upstream migration of adult fall-run chinook include suboptimal ladder design and sheet flow across the dam spillway that may obscure ladder entrances. The US Army Corps policy is to leave the gates controlling flow into the ladders wide open up to flows of about 8,000 cfs, which can create high velocities in the ladder. The ladder entrances are also located where the overflow from the spillway makes it difficult for adults to find the entrances. Both ladders, particularly the south one, tends to clog with woody debris that can block passage or substantially reduce attraction flows. The north ladder exit is also close to the spillway, which potentially causes fish to be carried back over the dam. Evidence for passage problems is suggested by the relationship between winter flows at Marysville and the distribution of adult fall-run chinook salmon observed above and below the dam. The ratio of the number of adults above the dam to those observed below the dam was highest (ranging between 2 to 3) at flows of about 500 cfs in 1981, 1985, and 1987. As flows increased above 500 cfs, the ratio of fish above to below the dam gradually declined and at flows greater than 2,000 cfs, more fish were observed below the dam than above. Although this suggests that flows above 500 cfs prevents adults from migrating past the dam, it is also possible that high flows improved water temperatures below the dam for spawning. The US Army Corps of Engineers has been funded by the Anadromous Fish Restoration Program to begin investigating alternatives to improve fish passage at the dam.

*Hypothesis: The dam delays the upstream migration of adult fall-run chinook salmon.*

During high spring flows between 8,000 and 16,000 cfs, when adult spring-run chinook and steelhead are migrating, the upper gate to the ladders are closed to a height of six inches. It is likely that high water velocities and the small opening at the ladder's gate are an impediment to upstream migrating adult salmonids. There are no data regarding the ability of adult salmonids to pass over the dam at flows greater than 8,000 cfs.

*Hypothesis: The dam delays the upstream migration of spring-run chinook and steelhead, particularly at flows between 8,000 and 16,000 cfs.*

It is generally known that predation rates of juvenile salmonids passing over dams is unnaturally high. Predator populations are usually high in the ponds upstream and downstream of the dams and the turbulence of the spilling water tends to disorient juvenile fish. Sacramento squawfish and striped bass have been observed in the downstream pond. However, most juveniles migrate

at night when predation is low.

*Hypothesis: The pools immediately above and below the dam concentrate predators of juvenile salmonids and increase predation rates.*

Poaching of adult salmon at the ladders and at the base of the dam has been well documented by CDFG and is a chronic problem (Falxa 1994). Poachers have tampered with fish ladders to block passage and enhance poaching success.

*Hypothesis: Poaching of adult salmonids occurs at high rates at the fish ladders.*

American shad require ladders with a lower gradient and water velocity than do salmonids (Falxa 1994) and ladders designed for salmonids may explain why few shad migrate past Daguerre Point Dam.

*Hypothesis: The dam and ladders blocks the upstream migration of American shad in most years.*

#### Diversions at Daguerre Point Dam

There are three water diversion facilities at or near Daguerre Point Dam managed by the Yuba County Water Agency.

- 1) Halwood-Cordua canal divers water at the upstream surface of the dam, on the north bank. A maximum of about 650 cfs is diverted during the irrigation season, from April through October. CDFG operates a fish screen for four to eight weeks when the number of migrating fall-run chinook salmon is at a peak (more than 100 fish per day). From 1991 through 1994, the earliest the trap was installed was April 7 and the latest it was removed was June 28 (S.P. Cramer & Associates, Inc. 1994). The fish screen is located in the canal about 1,500 feet downstream from the dam. The screen is a fixed V-shaped type, of perforated sheet metal. Predator concentrations occur throughout the 1,500 foot channel, but particularly near the face of the screens (Hall 1979). In 1978, losses of marked hatchery juveniles (released during the day in lots of 1,300 fish) at the screen were about 30%, presumably as a combined result of predation by Sacramento squawfish {replace with correct name} along the face of the screen and by entrainment (Hall 1979). Debris on the trashrack of the screen during the tests produced turbulence that appeared to increase predation rates. Of the control group of fish released downstream of the screen, 25% were not recovered. An evaluation of the cause of these downstream losses was not made.

*Hypothesis: A substantial number of juvenile salmon and steelhead are entrained or eaten by predators in the Hallwood-Cordura Canal.*

- 2) South Yuba-Brophy system diverts water through an excavated channel from the Yuba's

suggested at losses of juvenile salmonids at the South Yuba-Brophy diversion were between 40 and 60%.

*Hypothesis: There is a substantial predation rate on juvenile salmon that enter South Yuba-Brophy in the pond upstream of the diversion dike.*

- 3) Brown's Valley canal diverts water from the north bank of the river, about 4,200 feet upstream of Daguerre Point Dam, at flows up to about 100 cfs. Water enters an excavated side channel, from where it is pumped. This diversion has not had a functional fish screen, but one is proposed for installation in 1999.

A dewatering channel was dug to lower the water level in the Yuba Goldfield area south and west of Daguerre Point Dam. This ditch collects subsurface and surface flows, and empties them into the Yuba River at a point about 7,500 feet downstream of Daguerre Point Dam. Flows entering the Yuba River through the dewatering channel occur year-round and range from about 45 to 150 cfs when Yuba River flows at Marysville are less than 1,000 cfs and range from 100 to 400 cfs when flows at Marysville exceed 2,000 cfs (Smith 1990). These flows attract adult fall-run chinook salmon during their upstream migration. In December 1998, this channel attracted at least several hundred adults (Smith 1990). A screen installed to prevent adult salmon from entering the outfall has failed to prevent adults from entering the channel more than once (Falxa 1993).

*Hypothesis: Adult salmonids that enter the Yuba Goldfields fail to produce offspring that outmigrate.*

*Hypothesis: Outflow from the Yuba Goldfields is contaminated with mercury, oils from the dredging operations, fine sediments, and other substances and these contaminants cause mortality of salmonid eggs and juveniles and aquatic invertebrates.*

### Yuba Goldfields

The Yuba Goldfields are located near Daguerre Point Dam on the Yuba River. The Goldfields area is the result of intensive gold dredging in the late 1800s and early 1900s when up to 27 gold dredges worked the area at one time (Smith 1990). One large gold dredge continues to work the area.

{Map of the Goldfields}

The area is dominated by large mounds of dredge spoils interspaced with dredging ponds. The ponds are connected either above the ground via stream channels or below ground as percolation through the substrate. Percolation also occurs from the Yuba River into the ponds. In 1988, a new channel was constructed to return much of this flow to the Yuba River at about 1.5 miles downstream of Daguerre Point Dam. Surface water flows from a large gravel pile through several ponds, interconnecting streams, and culverts over a course of about 2.5 miles before exiting the Goldfields through the return channel.

American River fish that Myrick tested tolerated much higher temperatures than those from British Columbia. The American River fish grew the fastest at 66°F (the highest temperature tested) and mortality, as judged by the loss of equilibrium, did not occur until 86°F. However, these tests were conducted while providing large food rations (100% and 87% *ad libitum*) and it is likely that temperature tolerances would be reduced at lower food rations.

{Graphs of water temperature plotted over the year (real not Julian dates please) to show extremes and typical conditions at Daguerre Point Dam and Marysville. Then discuss the response of the fish, perhaps in terms of returning adults, to those temperature regimes.}

### Gravel Recruitment

Englebright Reservoir blocks the supply of spawning-sized gravel to the lower reaches but Englebright and the upper reservoirs do not sufficient enough capacity to completely control the high flows and floods that mobilize gravel and cause channel meander. Frequent flood flows in the lower reaches have prevented the encroachment of riparian vegetation onto the floodplain and so floodplain gravel is available for recruitment to the channel. Other sources of gravel are Deer Creek, Sanborn Creek and Dry Creek, all of which occur between Englebright Dam and Daguerre Point Dam. Another factor that helps maintain gravel in the lower Yuba River is that its functional floodplains ensure that gravel is not being excessively flushed from the streambed during floods. The areas where gravel may be limiting would be the reach between Englebright Dam and the confluence with Deer Creek, which is about 1.2 miles long, and the areas downstream of Daguerre Point Dam.

### Stranding

{Bill Mitchell should add a discussion of stranding here with hypotheses if appropriate}

### Exotic Fish Species

{Brief discussion of exotic species, particularly predators of salmon and steelhead}

Yuba County Water Agency, August 20, 1993.

- Mitchell, W.T. 1994a. Chinook salmon redd and fry stranding survey. Memorandum to Donn Wilson, Yuba County Water Agency, February 10, 1994.
- Mitchell, W.T. and P.L. Dunn. 1990. Field investigations of Yuba River American shad. Report prepared by Jones & Stokes Associates, Inc for the Yuba County Water Agency.
- Myrick, C.A. 1998. Temperature, genetic, and ration effects on juvenile rainbow trout (*Oncorhynchus mykiss*) bioenergetics. Dissertation, University of California, Davis
- Rich, A.A. 1987. Establishing temperatures which optimize growth and survival of the anadromous fishery resources of the lower American River. Prepared for McDonough, Holland and Allen, Sacramento, California, 25 pp.
- Shapovalov, L. and A.C. Taft. 1954. The life histories of the steelhead rainbow trout (*Salmo gairdneri*) and silver salmon (*Oncorhynchus kisutch*) with special reference to Waddell Creek, California, and recommendations regarding their management. California Department of Fish and Game, Fish Bull. No. 98. 373 pp.
- Smith, J.G. 1990. Fishery Investigations in the Yuba Goldfields area near Daguerre Point Dam on the Yuba River in 1989. USFWS Report No. AFF1-FAO-90-9. U.S. Fish and Wildlife Service, Fisheries Assistance Office, Red Bluff, California.
- S.P. Cramer & Associates, Inc. 1994. Evaluation of juvenile chinook entrainment at the South Yuba-Brophy Diversion Headworks. Final report prepared for South Yuba-Brophy and Yuba County Water Agency.
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APPENDIX G  
SUMMARY OF MAJOR FLOODS IN THE YUBA AND FEATHER RIVER WATERSHEDS



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YUBA TOOLS

XI-22

APPENDIX H

CIRRICULUM VITAE

RACHEL Z. KAMMAN, P.E.  
PRINCIPAL ENGINEERING HYDROLOGIST



**Rachel Z. Kamman, P.E.**  
**Principal Engineering Hydrologist**

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**Rachel Kamman**

<b>EDUCATION</b>	1994	M. Eng., Civil (Coastal and Hydraulic) Engineering University of California, Berkeley
	1988	B.A. Civil Engineering (Hydraulics and Water Resources) Lafayette College, Easton, PA
<b>REGISTRATION</b>	No. C 056655	Civil Engineer, California
<b>PROFESSIONAL HISTORY</b>	1999 - Present	Principal Engineering Hydrologist Kamman Hydrology, El Cerrito, CA
	1994 - 1998	Senior Associate/Associate Hydrologist Philip Williams & Associates, Ltd., San Francisco, CA
	1993 - 1994	Graduate Student Researcher: Coastal Waves & Sediment Graduate Student Instructor: Hydrology Department of Hydraulic and Coastal Engineering University of California, Berkeley, CA
	1992	Staff Engineer Geomatrix Consultants, Inc., San Francisco, CA
	1988 - 1991	Engineer/Staff Engineer ENVIRON International Corporation, Princeton, NJ

**EXPERIENCE AND INTERESTS**

Ms. Kamman is a registered civil engineer with broad experience in surface and sub-surface hydrology. She specializes in applying hydrologic, hydraulic and hydrodynamic analysis to the protection, restoration and enhancement of coastal, estuarine and river systems. Over the past ten years, Ms. Kamman directed and participated in numerous interdisciplinary studies integrating hydrology, geomorphology, biology and land-use issues.

In performing this work, Ms. Kamman is interested in developing and applying innovative approaches, including advanced numerical models, to the assessment of flood and sediment transport processes in rivers, and circulation, sedimentation and contaminant transport processes in large bays and estuaries. Most recently, she has focused on the development and integration of field monitoring programs, numerical models and long-term management planning for the protection and enhancement of river and coastal resources. The objective of this work is to develop scientifically based decision support tools and facilitate their integration in resource management decision making, and in river and wetland restoration design.

**PROFESSIONAL  
SOCIETIES &  
AFFILIATIONS**

Member, American Geophysical Union  
 Member, American Society of Civil Engineers  
 Member, Estuarine Research Federation  
 Member, International Association for Hydraulic Research  
 Member, Society for Ecological Restoration  
 Technical Advisor, Audubon Canyon Ranch, Stinson Beach, CA

**RESEARCH  
GRANTS AND  
AWARDS**

1997 EPA Grant for the Study of Surface and Groundwater Interaction in the Tijuana Estuary

1995 NOAA Grant for the Study of Freshwater Influences on the Salinity Structure of the Tijuana Estuary

1992 Tucker Fellowship, University of California, Berkeley

**PUBLICATIONS, REPORTS & PRESENTATIONS****Publications**

- Goodwin, P. and R. Z. Kamman. In Press. Mixing and Circulation in Tidal Wetlands. American Society of Civil Engineers Monograph: Physical Processes in Tidal Wetland Restoration.
- Kamman, R.Z. 1994. Image Processing Techniques in the Study of Wave Induced Sediment and Bed Motion. Masters Thesis: University of California, Berkeley. Department of Civil Engineering: Hydraulic and Coastal Engineering Division.
- Ruggles, R. and R. Zimmon (Kamman). 1988. Movement of Chloride Ions in Saturated Soil Samples during Freezing. Proceedings: 15<sup>th</sup> Annual Water Resources Conference, ASCE Norfolk, VA. June.

**Selected Reports**

- Kamman, R.Z. and M. K. Orr (Philip Williams & Assoc.), with Woodward Clyde Consultants. 1998. Preliminary Design for Tidal Wetland Restoration at the Hamilton Army Airfield. Prepared for the California State Coastal Conservancy and the Bay Conservation and Development Commission.
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- Goodwin, P., R.Z. Kamman, (Philip Williams & Assoc.) with R.B. Krone (Univ. CA, Davis) and A.J. Mehta, (Univ. of Florida). 1996. The Potential for Remobilization of Sediment Following the Introduction of Tidal Flows to the Pilot Unit, Sonoma Baylands, CA. Prepared for the US Army Corps of Engineers, San Francisco District.
- Goodwin, P., N.K. Klatt, and R.Z. Kamman (Philip Williams & Assoc.) and Wetlands Research Associates. 1996. 1) Hydrologic Evaluation of Restoration Alternatives; and 2) Flood Protection Evaluation Report: Commercial Township, Salt Hay Farm Wetland Restoration Site: Cumberland County, New Jersey. Prepared for the Public Service Electric and Gas Company Estuary Enhancement Program and Roy F. Weston.
- Liang, H.B., P. Goodwin, and R. Kamman. (Philip Williams & Assoc.) 1996. North Fork Feather River: Sediment Pass-through Study of Rock Creek and Cresta Dams. Prepared for Pacific Gas and Electric Company.
- Kamman, R.Z., E. Zedler, P. Goodwin, (Philip Williams & Assoc.) and R. Sobey, (Univ. of CA, Berkeley). 1995. Preliminary Assessment of a Salinity Model for the Tijuana Estuary. Restoring Coastal Wetlands Annual Report. Prepared for the Pacific Estuarine Research Laboratory, San Diego State University.
- Kamman, R. Z. and R. Coats, (Philip Williams & Assoc.) 1995. San Rafael Canal Flood Damage Reduction Project: Hydraulic Design for Habitat Mitigation Measures at Pickleweed Park and Seastrand Marsh. Prepared for the US Army Corps of Engineers, San Francisco District.
- Kamman, R. Z. and P. Goodwin (Philip Williams & Assoc.) 1995. Tidal Circulation in Mugu Lagoon. Prepared for the Environmental Division, Naval Air Station, Point Mugu, California, and PRC Environmental Management.

#### **Presentations**

- Kamman, R.Z. 1998. Tidal Flow, Sedimentation and Circulation in Bolinas Lagoon. Advanced Docent Training Seminar. Audubon Canyon Ranch, Stinson Beach, California, March.
- Kamman, R.Z. 1997. Integrating Based Closure with Tidal Wetland Restoration. EPA Region IX Special Facilities Conference. San Francisco, CA., April.
- Kamman, R.Z. 1997. Modeling Tools and Approaches for Assessment and Resource Management in Upper Newport Bay. Presentation for the Newport Bay Board of Managers Technical Advisory Committee; US Army Corps of Engineers, LA District; Santa Ana Regional Water Quality Control Board; Orange County and The City of Newport Beach.
- Kamman, R.Z. and P. Williams. 1997. Restoration of Tidal Wetlands in San Francisco Bay. 27<sup>th</sup> Congress of the International Association of Hydraulic Research. Co-Sponsored by the American Society of Civil Engineers. San Francisco, CA., August.
- Kamman, R.Z. 1996. Adaptive Modeling in Tidal Wetland Restoration. Bay Delta Modeling Forum/ San Francisco Estuary Institute: Habitat Restoration Modeling Workshop. Sacramento, CA., September.
- Kamman, R.Z.. 1995. Short Course Lectures: I.) Lagoon Hydrodynamics: Conservation Equations, Closure Relationships, Salinity Distributions, Mixing Processes and Estuarine Circulation. II.) DIVAST Workshop: Lagoon Assessment using a 2-Dimensional Hydrodynamic Model. Physical Processes Influencing the Management of Mugu Lagoon. Sponsored by the Environmental Division, Naval Air Station, Point Mugu, California.

DISCRIMINATION COMPLIANCE STATEMENT

REV. 3-85) FMC

COMPANY NAME

SYRCL

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

SHAWN GARVEY

OFFICIAL'S NAME

DATE EXECUTED

4-12-99

EXECUTED IN THE COUNTY OF

NEVADA COUNTY CA

PROSPECTIVE CONTRACTOR'S SIGNATURE

PROSPECTIVE CONTRACTOR'S TITLE

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

**STANDARD CLAUSES --  
SMALL BUSINESS PREFERENCE AND CONTRACTOR IDENTIFICATION NUMBER**

**NOTICE TO ALL BIDDERS:**

Section 14835, et. seq. of the California Government Code requires that a five percent preference be given to bidders who qualify as a small business. The rules and regulations of this law, including the definition of a small business for the delivery of service, are contained in Title 2, California Code of Regulations, Section 1896, et. seq. A copy of the regulations is available upon request. Questions regarding the preference approval process should be directed to the Office of Small and Minority Business at (916) 322-5060. To claim the small business preference, you must submit a copy of your certification approval letter with your bid.

Are you claiming preference as a small business?

\_\_\_\_ Yes\*

  X   No

\*Attach a copy of your certification approval letter.



# SOUTH YUBA RIVER CITIZENS LEAGUE

240 Commercial Street, Suite E • Post Office Box 841 • Nevada City, California 95959  
530/265-5961 • Fax 530/265-6232 • www.syrcl.org

April 15, 1999

Delta Protection Commission  
14215 River Road  
P.O. Box 530  
Walnut Grove, 95690

To whom it may concern:

As required in the CALFED February '99 Proposal Solicitation Package, SYRCL is forwarding for your review a proposal to fund a "YUBA TOOLS: An investigation of watershed management for enhanced flood control."

SYRCL has worked actively towards restoration and protection of the Yuba Watershed since 1983. SYRCL has 2,350 dues paying members and a staff of 6.5 FTE. SYRCL has been successful in planning and implementing numerous watershed protection efforts. YUBA TOOLS extends the capacity of the organization to actively lead the 46 participants and collaborators on this project in successfully planning for mutually beneficial watershed enhancements and flood control planning.

Thank you for attention.

Sincerely,

  
Shawn Garvey  
Executive Director