

ORIGINAL
Attachment H

COVER SHEET (PAGE 1 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Proposal Title: Opening Up Butte Creek Canyon To Salmon and Steelhead Fish Passage
Applicant Name: Institute For Fisheries Resources
Mailing Address: P.O. Box 29196 San Francisco, CA 94129-0196
Telephone: 415-561-5080
Fax: 415-561-5464

Amount of funding requested: \$ 156,780 for 1 1/2 years

Indicate the Topic for which you are applying (check only one box). Note that this is an important decision: see page of the Proposal Solicitation Package for more information.

- Fish Passage Assessment
- Floodplain and Habitat Restoration
- Fish Harvest
- Watershed Planning/Implementation
- Fish Screen Evaluations - Alternatives and Biological Priorities
- Fish Passage Improvements
- Gravel Restoration
- Species Life History Studies
- Education

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

- Sacramento River Mainstem
- Delta
- Suisun Marsh and Bay
- San Joaquin River Mainstem
- Landscape (entire Bay-Delta watershed)
- Sacramento Tributary: _____
- East Side Delta Tributary: _____
- San Joaquin Tributary: _____
- Other: _____
- North Bay: _____

Indicate the primary species which the proposal addresses (check no more than two boxes):

- San Joaquin and East-side Delta tributaries fall-run chinook salmon
- Winter-run chinook salmon
- Late-fall run chinook salmon
- Delta smelt
- Splittail
- Green sturgeon
- Migratory birds
- Spring-run chinook salmon
- Fall-run chinook salmon
- Longfin smelt
- Steelhead trout
- Striped bass

COVER SHEET (PAGE 2 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

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

- | | |
|--|--|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input checked="" type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input type="checkbox"/> Private party |
| <input type="checkbox"/> University | <input type="checkbox"/> Other: _____ |

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> Planning | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Monitoring | <input type="checkbox"/> Education |
| <input type="checkbox"/> Research | |

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 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 II.K) 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.

William F. Grady
(Signature of Applicant)

II. Executive Summary

a. Project title: Opening Up Butte Creek Canyon To Salmon and Steelhead Fish Passage
Applicant name: Institute for Fisheries Resources

b. Project description and primary biological/ecological objectives.

The goal of the project is to prepare a fish passage plan for reaches of Butte Creek now blocked by both natural barriers and hydroelectric dams so that salmon and steelhead, particularly spring-run chinook salmon, may use the stream for migration, holding, spawning and rearing. This proposal seeks funding to match 56% of the total cost of an ongoing project for which funds have already been committed from other non-State sources (44%).

c. Approach/tasks/schedule

The project will be carried out in three general phases, as follows:

- Organize a Project Advisory Committee (PAC) of Upper Butte Creek watershed community representatives and representatives of local, State and federal agencies having expertise and jurisdiction. Involve the PAC in the final development and adoption of the project work-plan and Upper Butte Creek policy. Complete this task within a month of initiation
- In collaboration with the PAC, develop a policy for Upper Butte Creek regarding introduction of spring-run salmon based on the evaluation of the salmon and steelhead habitat restoration potential, ecological considerations, land/property owners' concerns, the ESA and "safe harbor" protections. To assist in the formulation of the policy and future planning, organize the information in a map-based information system (GIS). Based on the policy, integrate the information into an Upper Butte Creek Salmon and Steelhead Fish Passage Plan. Complete all information gathering within eleven months of project initiation, complete draft GIS within twelve months, complete draft Plan within 13 months of project initiation.
- Obtain community and peer review of the draft policy and Plan. Prepare appropriate environmental documentation. Circulate draft and environmental document for review by public and agencies. Prepare responsiveness summary. Complete, deliver final Plan. Plan review will be completed within 15 months of project initiation, environmental documents with 16 and a half, the final Plan will be completed within 18 months of project initiation.

Details of the project tasks may be found at Section IV.b. of this proposal.

d. Justification for project and funding by CALFED

The restoration of Upper Butte Creek salmon and steelhead habitat is called for in the CALFED ERPP, the California Department of Fish and Game's 1995 Restoring Central Valley Streams Plan, the Central Valley Project Improvement Act Anadromous Fish Restoration Program

(AFRP), and CALFED's June 5, 1997 "Summary of Technical Team Reports - Stressors and Example Restoration Actions". Spring-run chinook salmon populations have been severely diminished through hydro-modification of the species' homestream habitats and of their rearing and migration habitats through the San Francisco Bay-Delta watershed.

e. Budget costs and third party impacts

The cost of the proposed project is estimated to be \$278,500. The proposed CALFED portion of the cost is \$156,780. Details of the budget are presented in Section V, Table 1, page 13.

The third party impacts that can be identified at this time are:

- Likely decrease in Pacific Gas and Electric Company's (PG&E) DeSabra-Centerville Hydroelectric System output due to reallocation of streamflow to improve salmon and steelhead instream habitat conditions. These impacts will be the subject of a fair and reasonable agreement with the Company to be established as part of the overall project.
- Possible interference with present-day suction gold-dredging in the Upper Butte Creek canyon reaches. If these reaches can be restored as spring-run chinook summer holding habitat, the dredging activity will have to be moderated. In any case, if the spring-run are listed under State or federal endangered species acts, the gold-dredging will likely be banned.

f. Applicant qualifications

The Institute for Fisheries Resources has successfully completed six fishery conservation projects, including analyses of salmon restoration costs and benefits in the Columbia, Klamath and Sacramento river basins, in the past two years. Kier Associates has successfully completed large-scale anadromous fish habitat evaluation, restoration planning, and data management projects for the U.S. Fish and Wildlife Service (Klamath River), the U.S. Bureau of Reclamation (Trinity River), and for the Mendocino County Resource Conservation District (Garcia River). Mr. Reisner directed the NFWF-funded Butte Creek Fish Access project.

g. Monitoring and data evaluation

Project information will be organized in an easy-to-use geographic information system (GIS). See section IV for details of the system and plans for its coordination with others, such as CMARP.

h. Local support/coordination with other programs/compatibility with CALFED objectives

Support for the proposed project has been expressed by the Butte Creek Watershed Conservancy, the U.S. Fish and Wildlife Service (Anadromous Fish Restoration Program) and the California Department of Fish and Game. Support for the Butte Creek Fish Access project is currently being provided by PG&E and Sierra Pacific Industries.

III. **Title page**

a. Title of Project:

Opening Up Butte Creek Canyon To Salmon and Steelhead Fish Passage

b. Name of applicant/principal investigator

Institute for Fisheries Resources - applicant (project contract, fiscal agent)
William M. Kier - Principal Investigator

c. Type of organization

Tax-exempt 501(c)(3) non-profit public service research organization

d. Tax identification number

94-3176524

e. Participants

Institute for Fisheries Resources Butte Creek Watershed Conservancy
Butte Creek Watershed Project/CSUChico Lassen National Forest
Pacific Gas and Electric Company Sierra Pacific Industries, Inc.
California Department of Fish and Game U.S. Fish and Wildlife Service

IV. Project description

a. Project description and approach

The project will match funds awarded in 1998 which, in turn, follows on work launched in 1997 under Cooperative Agreement 1425-96-FG-81-07011 ("Butte Creek Fish Access") between the National Fish and Wildlife Foundation and the non-profit Institute for Fisheries Resources (IFR). The 1997 grant resulted in a field study of the prospects for opening up fish passages in Butte Creek between Pacific Gas and Electric Company's Centerville and Butte diversion dams, a river distance of approximately ten miles (see map, Figure 1), to anadromous fish migration and use. The 1997 work included establishing cooperation with PG&E and making an initial determination of whether the potential quantity and quality of habitat, particularly for spring run chinook salmon, warrants closer habitat evaluation and development of a fish passage and restoration plan.

Spring run chinook salmon have been observed in Butte Creek above Centerville dam in 1998. This demonstrates that, in years with extraordinarily high flows, the fish will utilize the river and, with fish passage improvements, are likely to use the river in most years. The report of the 1997 field studies suggests that these remote Butte Creek canyon reaches will provide excellent holding habitat for spring run chinook salmon once the barrier issues are resolved. It is appropriate, therefore, that closer evaluation of habitat quality and quantity, and measures for dealing with the barriers to passage through the canyon be pursued. We propose, in addition to the habitat and barrier removal analysis in these canyon reaches, to evaluate the reaches above PG&E's Butte Diversion Dam as to their steelhead restoration potential. Finally, we propose to round out the assessment of Butte Creek salmon and steelhead habitat by evaluating holding, spawning and rearing conditions below the Centerville diversion dam and powerhouse. In this way, the plan will serve as a baseline from which individual restoration actions may be undertaken and their efficacy for the restoration of Butte Creek salmon and steelhead resources measured over time.

The project will proceed in the following manner:

- establish (and maintain coordination with) a project advisory committee (PAC) of interested technical and watershed community representatives
- in collaboration with the PAC, develop a policy for the introduction of salmon and steelhead in Upper Butte Creek taking into consideration, among other things, private property rights
- adopt, with the guidance of the PAC, the final project workplan
- gather and analyze data concerning salmon and steelhead habitat quality and quantity, building on IFR's 1997 field work
- evaluate migration barrier removal and fish screening needs
- identify, gather, and organize restoration plan information into a GIS program for guiding and tracking restoration progress over time

- integrate habitat, barrier, screening and GIS elements into a draft Upper Butte Creek Salmon and Steelhead Restoration Plan
- obtain peer and public review of the draft plan
- complete the plan for restoration actions, necessary environmental documentation, and GIS-based monitoring

b. Proposed Scope of Work

The work proposed here will extend over an 18-month period and will culminate in adoption of an integrated program of specific fish passage improvement actions for the Upper Butte Creek Salmon and Steelhead Plan.

Task 1. Establish and maintain community support and technical guidance for the project. A project advisory committee (PAC) to develop appropriate policies, guide the planning process, secure community-level support and to assure the technical soundness of the methods employed will be organized as a first order of business. Invitees will include the California Department of Fish & Game, Butte Creek Watershed Conservancy, PG&E, Sierra Pacific Industries, U.S. Fish & Wildlife Service, Lassen National Forest, Chico State University, National Marine Fisheries Service, and Central Valley Project Water Association. The PAC's first order of business will be to review and recommend a policy regarding salmon introduction to the Creek. The PAC will be convened periodically to review major issues identified in the planning process. The policies developed as part of this task will also be subject to the peer and community review process described in Task 8 below.

Task 2. Adopt final workplan. A final plan of work will be established after thorough consultation with the PAC. The workplan will reflect the results of the appropriate policies regarding introduction of salmon into Upper Butte Creek that will be developed in Task 1. Subject to modification of the workplan based on the policies, each of the following tasks illustrate the direction of the project.

Task 3. Collect and organize habitat evaluation and watershed assessment information. A major focus of data collection will be that concerning the number, location, volume and water quality of pools in the canyon reaches that appear suitable for holding spring salmon through the summer. IFR's 1997 project enabled a start on this inventory. A three-person crew has been working downstream, locating and gauging pools with the use of a hip chain and stadia rod. Global positioning system (GPS) equipment is not useful in the canyon due to its steep-sided nature.

Temperature data will be another key to successful planning. IFR deployed a half-dozen temperature recorders in the central canyon reaches in mid-summer 1997. The records obtained from this work will be extended, particularly to the upper reaches, in search of additional spawning and rearing habitat potential.

McNiel sampling method that entails removing a portion of the sample for later laboratory analysis. We will reach agreement with our advisory committee experts on a suitable and affordable method of establishing good baseline data on the quality of the stream's prospective salmon spawning gravels.

Streamflow and habitat relationships will be determined through modified instream flow incremental methods. IFIM methods have been quite rigorous where the results have been applied to regulatory proceedings like power project relicensing or water rights hearings. The streamflow reallocation approach contemplated here will be a negotiated process requiring, we believe, a less rigorous approach to the determination of streamflow and habitat relationships. Flow in the canyon section in early July, 1997 was approximately 40 cubic feet per second. It is our professional judgment that the canyon's habitat elements were well served at that flow. PG&E's Butte Creek head dam was out of service during early summer, 1997 due to January storm damage to the diversion canal. That had the effect of restoring five miles of stream habitat briefly down to the Forks of Butte diversion. The Forks of Butte diversion has a modern fish bypass requirement. That leaves the Centerville diversion-to-Centerville powerhouse reach as the principal unknown concerning flow and habitat relationships.

Measurement of the flow and habitat relationships will be the subject of consultation with the advisory committee.

Information concerning fish passage and habitat-impacting land uses will be gathered with the assistance of the Butte Creek Watershed Conservancy and the Chico State Butte Creek Watershed Project.

Task 4. Evaluate salmon migration barrier resolution needs. IFR's 1997 Butte Creek project provided an initial assessment of natural and manmade structures that appeared to be barriers to fish migration. The proposed project will provide more precise measurements of the barriers, the water velocities they create at times critical to fish movement and will determine in each case the most suitable method of resolving the barrier (e.g., blasting or laddering). This work will be assisted by a qualified engineering subcontractor to the project who will be selected with the assistance of the advisory committee.

Task 5. Evaluate fish screen needs. Fish screens at the canyons' three water diversion intakes will be evaluated to determine their sufficiency for protecting new downstream salmon and steelhead migrants. The engineering subcontractor will assist in the evaluation of screening requirements, options, and methods.

Task 6. Organize information in a geographic information system. It is proposed to organize the key watershed, stream habitat, barrier and screen information into the geographic information system, or GIS, described below in the discussion concerning project monitoring and data evaluation.

Task 7. Integrate Task 3-6 elements into a draft fish passage and restoration plan. The information gathered in tasks 3 through 6, plus preliminary recommendations for restoration actions will be gathered into a draft restoration plan.

Task 8. Obtain public and peer review of the draft plan. The project advisory committee will be accorded the first draft plan review opportunity, following which the draft will be distributed for wider review by agencies having expertise and jurisdiction. Public briefings on the draft plan will be conducted.

Task 9. Prepare appropriate environmental documentation for the program. The appropriate level of environmental review will depend in part on which agency or agencies is determined to be the lead agency for purposes of adopting the plan. Because the plan will select, but not itself undertake the necessary restoration actions, the level of review will likely be that of a National Environmental Policy Act Environmental Assessment or its State equivalent.

Task 10. Complete, deliver final Butte Creek Salmon and Steelhead Restoration Plan. Following community and peer review, environmental review and preparation of a responsiveness summary, a final Butte Creek Salmon and Steelhead Restoration Plan will be printed and delivered to CALFED and its constituent agencies for implementation of the program of restoration actions.

A schedule of project milestones is presented at Table 3 (Section IV). IFR proposes to present the contract administrators with monthly reports of progress on the workplan, project budget condition reports, and progress payment invoices.

c. Location and/or Geographic Boundaries of the Project.

Butte Creek, Butte County, from its headwaters on the Lassen National Forest to below Pacific Gas and Electric Company's Centerville powerhouse east of Paradise (Figure 1).

d. Expected benefits

The "stressors" in this case are a number of barriers to upstream migration by salmon and steelhead, both natural and manmade (i.e., very old power-dams). Inasmuch as their modification or removal would require significant investment, including possible compensation for hydroelectric production foregone, it is necessary to obtain a thorough evaluation of the habitat restoration potential and measures and preliminary costs of reopening these Butte Creek reaches.

The species involved are (1) spring run chinook salmon and (2) steelhead - in that order of priority. Spring run restoration would be served by opening Butte Creek's canyon reaches no further than PG&E's Butte head dam. Steelhead restoration would likely require providing spawner access past the head dam to the reaches up to and including the Lassen National Forest. The 1997 habitat evaluation suggests that Butte Creek's present spring run population, estimated between 2,000 and 8,000 adults in recent years, could be significantly increased by creating access to the canyon reaches. The number of steelhead that might be accommodated in the system will be estimated in the proposed habitat evaluation.

Because of its deeply incised nature, the Butte Creek canyon is only moderately impacted by roads and trails. Its many inaccessible pools would appear to be prime spring salmon holding habitat. Temperature records from the 1997 IFR project will document the extent and quality of this habitat.

e. Background and biological/technical justification

The need to seize upon opportunities to increase the natural production of spring-run chinook salmon has been well documented in plans recently prepared by CALFED (ERPP, Figure 2), the California Department of Fish Game, the Central Valley Project Improvement Act Anadromous Fish Restoration Program (AFRP) and CALFED. In addition, CALFED's June 5, 1997 "Summary of Technical Team Reports - Stressors and Example Restoration Actions" emphasize the need to improve access to potential spring run salmon habitat in upper Butte Creek.

Both the State Anadromous Fish Program Act (SB-2261) and the CVPIA stress the need to increase salmon and steelhead numbers through natural, rather than artificial means.

The 1996 restructuring of the private electricity sector and the availability of significant habitat restoration funds from the proceeds of Proposition 204 and elsewhere, the stage is set for a negotiated, rather than regulated, restoration of the stream. These circumstances provided justification for IFR to continue its project to improve fish passage on Butte Creek.

IFR's work to date has been undertaken in close coordination with the Department of Fish and Game, PG&E, U.S. Fish and Wildlife Service, Sierra Pacific Industries, Chico State's Butte Creek Watershed Project, and the Butte Creek Watershed Conservancy.

Implementation of the proposed Upper Butte Creek Salmon and Steelhead Restoration Plan will provide improved fish passage and high quality habitat for as many as 15,000 spring run chinook salmon spawners and an as-yet-undetermined number of steelhead.

f. Monitoring and data evaluation

We propose to organize project information in an easy-to-use GIS program comparable to the GIS prepared by this project's Principle Investigator (Kier) for the salmon and steelhead restoration efforts of the U.S. Fish & Wildlife Service and U.S. Bureau of Reclamation on the Klamath and Trinity rivers - the Klamath Resource Information System, or KRIS. KRIS enables watershed community-based participation in information development, management and use. The Department of Fish and Game is using KRIS to capture similar information concerning its salmon restoration program on Battle Creek. We will use the GIS layers being developed by Chico State under a Category III agreement. Opportunities to integrate Butte Creek Plan information with the Department of Water Resource's Sacramento River GIS and the CVPIA's Comprehensive Assessment and Monitoring Program (CAMP) will be pursued vigorously.

g. Implementability

The project's main compliance requirement will be the satisfaction of federal and State environmental policy/quality statutes. The principal landowners, PG&E and Sierra Pacific Industries, have thus far supported the evaluation of watershed conditions and restoration options. The principal watershed-community organization, the Butte Creek Watershed Conservancy, has indicated strong interest in, and support for the project.

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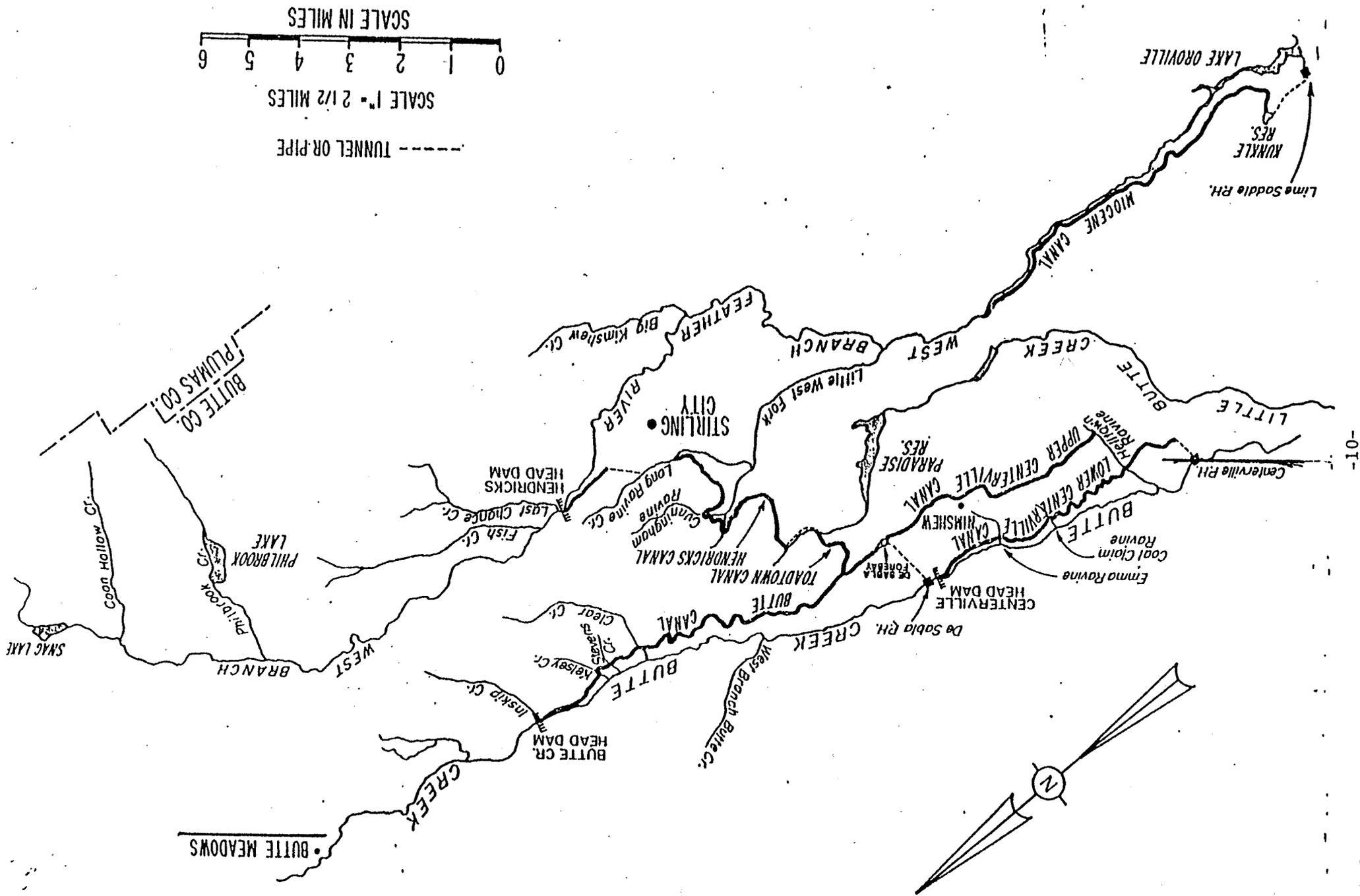


Figure 1 Upper Butte Creek, Butte Meadows downstream to Centerville Powerhouse

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• BUTTE MEADOWS

E-031256

Figure 2: Relationship Of The Project To The Ecosystem Restoration Program Plan

KEY: V = Volume (I, II, or III) p = page number

OBJECTIVE OR TARGET TOPIC	IMPLEMENTATION OBJECTIVES & TARGETTED ACTIONS
Ecosystem Element Stressors	Water Diversions Vision V.I, p 14
Ecosystem Element Stressors	Dams, Reservoirs, Weirs, and Other Structures, V.I, p 14
Ecological Zones & Implementation Objectives	Butte Basin listed specifically for Central Valley Streamflows, Natural Sediment Supply, Stream Meander, and Natural Floodplains and Flood Processes, V.I., p20
Central Valley Streamflows	Key flows to Central Valley noted that would benefit from Butte Creek project, V.I., p 27
Natural Sediment Supply	Replenishment of sediment would benefit from Butte Creek project, V.I., p 33
Natural Floodplains and Flood Processes	Modify channel and basin provisions would benefit from Butte Creek project, V.I., p 45
Central Valley Stream Temperatures	Would Benefit from the Butte Creek project, VI,p53
Habitat Visions	Many of the Ecosystem Habitat Elements & Objectives would benefit from the Butte Creek project which is also specifically mentioned, V.I., p79
Riparian & Riverine Aquatic Habitats	Implementation Objectives, V.I., pp 110-112
Species & Species Group Visions	Chinook Salmon and Steelhead Trout specifically mentioned for Butte Basin, V.I., p. 130
Longfin Smelt	Benefit from Butte Basin flows at key times in Delta??, V.I., p141
Chinook Salmon	Maintain adequate flows, restore habitats, eliminate stressors, V.I., p. 154
Steelhead Trout	Restore habitat, improve riparian corridors, sufficient flows, implement actions in each of the 14 ecological zones, one of which is Butte Basin, V.I., p. 160
Bay-Delta Aquatic Foodweb Organisms	Increase late winter and spring Delta outflow, V.I., p181
Reducing or Eliminating Stressors	Water Diversions and Dams, Weirs, Reservoirs, and Other Structures are specifically listed for the Butte Basin, V.I., p. 273
Dams, Reservoirs, Weirs, and Other Structures	Improve fish passage is central, V.I., p. 280
Battle Creek Ecological Unit	Central Valley Streamflow, Natural Sediment Supply, Stream Meander, Natural Floodplain and Flood Processes, Riparian and Riverine Aquatic, Eliminating Stressors, Water Diversions, Dams, Reservoirs, Weirs, and Other Structures, Spring-run & Fall Run Chinook Salmon, Late-Fall-run Chinook Salmon, Steelhead, V.II., pp 177-180
Ecological Processes	Increase streamflow in Battle Creek, V.II., pp 181-182
Habitats, Riparian and Shaded Riverine Aquatic Habitats	Programmatic Action 1C: maintain and restore riparian communities on Battle Creek, V. II., p. 184
Land Use	Target 1: Protect, restore, and maintain ecological functions and processes in the Battle Creek watershed, V. II., p. 186
Spring-run Chinook salmon	Programmatic Action 1A: Actions to restore spring-run chinook and its habitat, V. II., p. 189

Late-Fall-run Chinook Salmon	Programmatic Action 1A: Actions to restore late-fall-run chinook and its habitat, V. II., p. 190
Steelhead	Programmatic Action 1A: Actions to restore steelhead and its habitat, V. II., p. 190
Butte Sink Ecological Unit	Streamflows, Natural Sediment Supply, Stream Meander, Seasonal Wetland Habitat, Riparian and Riverine Aquatic Habitats, Water Diversions, Dams, Reservoirs, and Other Structures, Chinook Salmon, Steelhead, Target 5 (p. 238), Implementation Actions 5A & 6A (p. 238), Target 3, Implementation Action 3A (p.239), Target 4, Programmatic Action 4A (p. 241), Stressors Target 1, Programmatic Actions 1A, 1B, 1C, 1D, 1E (p. 242), Land Use Programmatic Action 1A (p. 243), Dams, etc., Target 4, Programmatic Action 4A, 4B, 4C (p. 244), Chinook Salmon, Programmatic Actions 1A (p.245) & 1A (p. 246), Steelhead Programmatic Action 1A (p. 247), V. II., pp 231-248
Land Use	Target 1, Programmatic Actions 1A & 1B (pp. 273-274)

V. Costs and schedule to implement proposed project

TABLE 1: Cost Breakdown Table

Project Task	Direct Labor Hours	Direct Salary and Benefits	Overhead Labor	Service Contracts	Material and Acquisition Contracts	Misc. and other Direct Costs	Total Cost	CALFED Cost
Task 1	45	1,883	-0-	13,080	-0-	2,307	17,270	9,722
Task 2	45	1,883	-0-	5,340	-0-	1,077	8,300	4,672
Task 3	45	1,885	-0-	14,160	1,755	1,000	18,800	10,583
Task 4	45	1,883	-0-	29,360	8,257	2,000	41,500	23,362
Task 5	45	1,883	-0-	27,040	3,027	2,000	33,950	19,112
Task 6	45	1,883	-0-	14,240	2,047	900	19,070	10,735
Task 7	53	2,200	-0-	23,100	650	3,650	29,600	16,663
Task 8	90	3,791	-0-	32,080	910	4,999	41,780	23,520
Task 9	51	2,146	-0-	17,280	-0-	4,354	23,780	13,387
Task 10	84	3,528	-0-	34,020	-0-	6,902	44,450	25,023
TOTAL	548	22,965	-0-	209,700	16,646	29,189	278,500	156,780

TABLE 2: Schedule of Butte Creek Project Milestones

Task	Completion date ^{1/}
1. Establish advisory committee	2/01/99
2. Adopt final workplan	3/01/99
3. Collect watershed, fish habitat information	3/01/00
4. Evaluate barrier removal needs	11/15/99
5. Evaluate fish screening needs	11/15/99
6. Organize information in a geographic information system	12/31/99
7. Integrate task 3-6 information in a draft restoration plan	2/01/00
8. Coordinate public and peer review	4/01/00
9. Prepare, circulate environmental documents for review	5/15/00
10. Deliver final Butte Cr salmon and steelhead restoration plan	6/30/00

^{1/} assumes a 1/01/99 project initiation

Applicant qualifications

The Institute for Fisheries Resources

- Technical participants concerning the impacts on salmon of the Ricelands Habitat Partnership, a Sacramento Valley alternative to the burning of rice stubble and weeds.
- Authors of reports on the costs and benefits of salmon restoration programs on the Columbia and Klamath Rivers (Sacramento River salmon restoration analysis is currently undergoing peer review.)
- Administrators of the current project to evaluate salmon passage opportunities in Upper Butte Creek under a grant from the National Fish and Wildlife Foundation.

William M. Kier Associates

- Currently serve as fisheries and planning consultants to the California Department of Fish and Game's Category III-funded Battle Creek Chinook Salmon Restoration Plan development
- Currently serve as fisheries consultants to the Institute for Fisheries Resources' NFWF-funded Butte Creek Fish Access project
- Served as the California Advisory Committee on Salmon and Steelhead's principal consultants
- Prepared the *Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program* for the U.S. Fish and Wildlife Service
- Conducted a review of water quality and habitat monitoring programs on private timberlands for the California Department of Fish and Game
- Prepared the Garcia Watershed Restoration Plan for the Mendocino County Resource Conservation District
- Developed the Klamath Resource Information System (KRIS) to support salmon restoration programs on the Klamath and Trinity rivers.

Marc Reisner

- Principal investigator for the Institute for Fisheries Resources' Butte Creek Fish Access project
- Senior consultant for ecosystem restoration planning, Levine Fricke Recon, Emeryville

- Consultant to the Nature Conservancy concerning the Sacramento Valley Ricelands Habitat Partnership, particularly regarding water availability, competing uses, fisheries impacts, and economic and legal issues.

Guy Phillips, Ph.D.

- Expert witness in FERC, CPUC, and SWRCB proceedings on the socio-economic and institutional aspects of hydropower, water resources, and fisheries
- Economic and institutional expert for the San Francisco Estuary Comprehensive Conservation Management Plan
- Economic and institutional expert for the Santa Monica Bay Restoration and Comprehensive Conservation Management Plan
- Former California Assistant Secretary for Resources responsible for the design and implementation of the Renewable Resource Investment Fund which included the California Salmon Restoration Program
- Author or co-author of more than 45 reports, technical articles, and publications on the economic and institutional aspects of power, hydropower, and fisheries

Paul Tappel, P.E.

- Developed fish passage facility designs for Struve Creek, Washington, for Seattle Public Utilities, Seattle, WA
- Designed fish passage facilities for three Puget Sound streams for the South Puget Sound Salmon Enhancement Group, Olympia, WA
- Developed a plan including fish passage facility designs for re-establishing salmon above Electron Dam on the Puyallup River for the Puyallup Indian Tribe, Puyallup, WA