

NOTICE OF INTENT TO AWARD

This Funding Announcement is not a request for applications. This announcement is to provide public notice of Reclamation's intention to fund the following project activities without full and open competition.

ABSTRACT	
Funding Announcement	R10AS20090
Project Title	Study of the Influences of Water Quality and Aquatic Weeds on Largemouth Bass in the Delta
Recipient	University of California, Davis
Principle Investigator	Andrew Sih
Total Anticipated Award Amount	\$250,322.00
Cost Share	None
New Award or Continuation?	New Award
Anticipated Length of Agreement	18 months
Anticipated Period of Performance	Date of execution through December 31, 2011
Award Instrument	Cooperative Agreement - CESU
Statutory Authority	Public Law 102-575, Central Valley Project Improvement Act, , Title 34, Section 3406 (b)(1)
CFDA Number	15.512
Single Source Justification Criteria Cited	(3) - Continuation and (4) - Unique Qualifications
Reclamation Point of Contact	Maria E. Castaneda, mcastaneda@usbr.gov

OVERVIEW

Reclamation operates the Federal Central Valley Project (CVP) in coordination with the State Water Project (SWP), which is operated by the California Department of Water Resources (DWR). The diversion of water by the CVP and the SWP from their pumping facilities in the southern portion of the Sacramento-San Joaquin Delta (Delta) have been implicated as one of the possible causes of an apparent step-decline in the indices of abundance of a number of pelagic fish populations including the delta smelt (*Hypomesus transpacificus*), an endemic species listed as 'threatened' under the Federal Endangered Species Act (ESA). This agreement is directed at investigating the causes of this apparent decline and providing scientific information necessary to formulate ways to reverse it. The work will be conducted under the auspices of the Interagency Ecological Program (IEP), a consortium of nine Federal and three State agencies responsible for monitoring and special studies in the San Francisco Bay-Delta estuary.

RECIPIENT INVOLVEMENT

Working closely with her Department of the Interior (DOI) co-principal investigator (co-PI), the University of California-Davis (UCD) co-PI will supervise her staff in accomplishing the data collection activities of the investigations, including all logistics associated with this work; laboratory analyses; data

management, data storage, and retrieval; and the analysis and subsequent reporting of the results of the field and laboratory work.

Scope of Work

The title of the project is "Influences of water quality and submerged aquatic vegetation on largemouth bass distribution, abundance, diet composition and predation on Delta smelt in the Sacramento-San Joaquin Delta." A full project description, including background, conceptual model, and field, lab, and analytical methods, is presented in the attached proposal. The project will consist of three tasks under the direction of a UCD co-PI and DOI co-PI. The co-PIs will work together to formulate the study design and coordinate the data collection, analysis, and interpretation for each component of the project. Specifically, the project shall include the following tasks.

Task 1. Influence of abiotic and biotic factors on abundance and distribution of largemouth bass and entire nearshore fish assemblage

A. The purpose of this task is to complete data collection for a two-year dataset that links the littoral fish assemblage with water quality parameters and submerged aquatic vegetation (SAV) species composition and biomass. This effort is a continuation of work begun under an IEP grant administered through DWR. The resulting data set will improve understanding of how biotic and abiotic environmental factors influence largemouth bass (LMB) distribution and abundance in the Delta.

B. This task seeks to answer the question: how do abiotic (e.g., flow variability, turbidity, water temperature, etc.) and biotic (e.g., submerged aquatic vegetation) factors influence largemouth bass distribution and abundance in the Delta and, ultimately, their impacts on delta smelt and other pelagic fishes currently in decline.

C. The work required to answer this question comprises 3 sub-tasks described in detail in the attached proposal: (a) conduct bimonthly surveys of the fish assemblage and estimates of SAV biomass and species composition at 33 sites distributed throughout the Delta (see Figure 1 in attached proposal); (b) collect concurrent water samples at the same 33 locations for measurement of temperature, specific conductance, pH, turbidity, and dissolved oxygen; (c) analyze resulting data and prepare progress reports, a presentation, and a journal article.

Deliverables for Task 1:

1. Presentation of results at a meeting of the Estuarine Ecology Team or other IEP forum.
2. Manuscript submitted to peer-reviewed science journal.

Task 2. Abundance and diet composition of largemouth bass and other predators co-occurring with delta smelt

A. The work carried out in this task is designed to determine the abundance and diet composition of LMB and other piscivores in areas where the presence of delta smelt has been established.

B. This task seeks to answer two questions: (i) what is the density of LMB and other piscivores in areas occupied by delta smelt; and (ii) what are these predators eating.

C. The work required to answer these questions comprises the following sub-tasks (described in detail in the attached proposal): (a) conduct monthly electroshocking surveys at five sites chosen in conjunction with the IEP Spring Kodiak trawl, Larval Survey, and 20 mm Survey conducted by the California Department of Fish and Game; (b) measure the length of all fish captured, extract stomach contents using the gastric lavage method, and preserve contents in 10% buffered formalin solution; (c) record Secchi depth, water temperature, turbidity, conductivity, pH, and dissolved oxygen at each sampling location; (d) identify preserved stomach contents and categorize into taxonomic groups (order of insects, family of crustaceans, and all fish contents to the species level, or the lowest practical level of identification); and (e) analyze resulting data and prepare newsletter article and presentation.

Deliverables for Task 2:

1. Presentation of results at a meeting of the Estuarine Ecology Team or other IEP forum.
2. IEP Newsletter article.

Task 3. Influence of the SAV species and biomass on invertebrate community composition and biomass

A. The purpose of this task is to determine how increased biomass of SAV, particularly *Egeria densa*, may influence secondary productivity in the littoral zone, and in turn, provide a prey base for exotic juvenile fishes such as LMB.

B. This task addresses the following questions: (i) is there a relationship between biomass density of submerged vegetation and the biomass of associated invertebrates; (ii) does this relationship vary with the species of aquatic macrophyte present; and (iii) is there a relationship between invertebrate biomass and community composition and the diet and stomach fullness of juvenile largemouth bass captured at the same locations.

C. To address these questions, the following subtasks will be performed: (a) at 6 of the 33 survey stations, conduct SAV and invertebrate sampling in addition to fish assemblage and LMB diet sample collection; (b) extract invertebrates from SAV surfaces and sort to species and measure fresh weight; and (c) analyze data and prepare presentation and journal article manuscript.

Deliverables for Task 3:

1. Presentation of results at a meeting of the Estuarine Ecology Team or other IEP forum.
2. Manuscript submitted to peer-reviewed science journal.

RECLAMATION INVOLVEMENT

Reclamation will work closely with UCD co-PIs to ensure that study designs, sampling methods, statistical analyses, and other technical elements of the program are fully implemented and that the terms of the agreement are fully met.

SINGLE-SOURCE JUSTIFICATION

DEPARTMENT OF THE INTERIOR SINGLE SOURCE POLICY REQUIREMENTS
Department of the Interior Policy (505 DM 2) requires a written justification which explains why competition is not practicable for each single-source award. The justification must address one or more of the following criteria as well as discussion of the program legislative history, unique capabilities of the proposed recipient, and cost-sharing contribution offered by the proposed recipient, as applicable.
In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria: <ol style="list-style-type: none"> (1) Unsolicited Proposal – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives; (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of an activity presently being funded, and for which competition would have a significant adverse effect on the continuity or completion of the activity; (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress’ intent to restrict the award to a particular recipient of purpose;

- (4) **Unique Qualifications** – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, cost-sharing ability if applicable, technical expertise, or other such unique qualifications;
- (5) **Emergencies** – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.

Reclamation did not solicit full and open competition for this award based on the following criteria:

CONTINUATION/UNIQUE QUALIFICATIONS

This agreement provides funding for a UC Davis study initiated under a competitive grant awarded under the IEP Proposal Solicitation. Dr. Sih (UCD) and Mr. Feyrer (DOI) have assembled a team that is uniquely qualified to continue this research. The team includes a graduate student mid-way through their course of study and a post-doctoral researcher. The necessary field and laboratory methods have been perfected and all support personnel have been trained. The leaders of the team have pioneered both the field and laboratory elements of this study and published extensively on this subject in peer reviewed scientific journals. It would not be cost effective for the government to work with another university cooperator on these particular aspects of the program because it would require that most of the work conducted during previous phases of this effort be repeated. The UCD team is thus uniquely qualified to continue this effort to develop an acoustic telemetry system for delta smelt.

STATUTORY AUTHORITY

Central Valley Project Improvement Act, Public Law 102-575, Section 3406 (b)(1):

(b) FISH AND WILDLIFE RESTORATION ACTIVITIES- The Secretary, immediately upon the enactment of this title, shall operate the Central Valley Project to meet all obligations under State and Federal law, including but not limited to the Federal Endangered Species Act, 16 U.S.C. 1531, et seq., and all decisions of the California State Water Resources Control Board establishing conditions on applicable licenses and permits for the project. The Secretary, in consultation with other State and Federal agencies, Indian tribes, and affected interests, is further authorized and directed to:

(1) develop within three years of enactment and implement a program which makes all reasonable efforts to ensure that, by the year 2002, natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long-term basis, at levels not less than twice the average levels attained during the period of 1967-1991; Provided, That this goal shall not apply to the San Joaquin River between Friant Dam and the Mendota Pool, for which a separate program is authorized under subsection 3406(c) of this title; Provided further, That the programs and activities authorized by this section shall, when fully implemented, be deemed to meet the mitigation, protection, restoration, and enhancement purposes established by subsection 3406(a) of this title; And provided further, That in the course of developing and implementing this program the Secretary shall make all reasonable efforts consistent with the requirements of this section to address other identified adverse environmental impacts of the Central Valley Project not specifically enumerated in this section.

Section 3407(e):

(e) FUNDING TO NON-FEDERAL ENTITIES.--If the Secretary determines that the State of California or an agency or subdivision thereof, an Indian tribe, or a non-profit entity concerned with restoration, protection, or enhancement of fish, wildlife, habitat, or environmental values is able to assist in implementing any action authorized by this title in an efficient, timely, and cost effective manner, the Secretary is authorized to provide funding to such entity on such terms and conditions as he deems necessary to assist in implementing the identified action.