

Agenda Item: 6b
Meeting Date: October 12, 2006

**CONSIDERATION OF A RESOLUTION RECOMMENDING THAT
THE DEPARTMENT OF FISH AND GAME PROCEED WITH AWARDING
A CALFED ECOSYSTEM RESTORATION PROGRAM GRANT TO THE
SONOMA ECOLOGY CENTER FOR THE PROJECT:
ARUNDO DONAX ERADICATION AND COORDINATION PROGRAM:
DEVELOPMENT OF A MONITORING PROTOCOL**

Summary: This resolution recommends to the Department of Fish and Game that it proceed with an Ecosystem Restoration Program agreement to support the revised project *Arundo donax* Eradication and Coordination Program: Development of a Monitoring Protocol, described in Attachment 1 of Resolution 06-10-03. The agreement total is up to \$110,000.

Recommended Action: The California Bay-Delta Authority adopt the attached Resolution 06-10-03.

Background

Arundo donax Eradication and Coordination Program: Development of a Monitoring Protocol, submitted in response to the CALFED Bay-Delta Program Ecosystem Restoration Program (ERP) 2004 Monitoring and Evaluation Solicitation received a recommendation of "Reconsider if Revised." The 2004 Monitoring and Evaluation project proposals address ERP's intent to understand the effects of prior and ongoing ecosystem restoration actions. "Reconsider if Revised" is the status given to those proposals that are high priorities, and are being considered for funding if they are revised to address comments identified in reviews by the grant selection panel. In revising this proposal, the proponent worked closely with ERP staff to address the review comments and received further review by the ERP implementing agencies, who are engaged in the ongoing process of reconsidering revised CALFED ERP proposals. These proposed projects must meet the priorities referenced in the 2004 Monitoring and Evaluation Proposal and Submittal Package; CALFED planning documents, including the CALFED ROD, Draft Stage 1 Implementation Plan, or current Multi-Year Program Plan. This project was originally considered in Resolution 05-08-04.

The non-native invasive grass *Arundo donax* (*Arundo*, giant cane) threatens the ecological integrity of the rivers and streams throughout the CALFED solution area by altering ecosystem processes and negatively affecting native species. *Arundo*'s effectson native systems and its modes of reproduction are well documented. These

include degrading fish and wildlife habitat (often to a monoculture of Arundo), increasing fire risks, consuming large amounts of water, and creating erosion and flooding problems.

Collection of quality eradication monitoring data in a format useful for analysis and compatible with those of other CALFED projects is difficult for individual programs to accomplish. For a variety of reasons from technical challenges to time constraints, weed managers are not consistently collecting and reporting sufficient data to provide for analysis of eradication effectiveness across a range of sites within the CALFED solution area. Recent broad based adoption and improvements made to the Weed Information Management System (WIMS) are facilitating standardized data collection amongst Arundo eradication partners. However, the lack of a peer-reviewed, science-based monitoring protocol for invasive species with clear guidelines for application in a variety of vegetation communities remains an obstacle to the collection of high-quality vegetation monitoring data that can be combined and compared across programs. Due to the different objectives and challenges faced by eradication practitioners and researchers, and their different backgrounds in vegetation science, data collected by these two groups is typically vastly different in structure and content, and therefore impossible to combine and compare. The development and testing of a peer-reviewed monitoring protocol by this project will bridge Arundo eradication communities that use WIMS and enable more reliable analysis of the effectiveness of Arundo eradication actions and methods in Northern California.

Attachment 1 of Resolution 06-10-03 describes the *Arundo donax* Eradication and Coordination Program: Development of a Monitoring Protocol project and how it helps achieve ERP goals. The revised proposal is available at:

http://www.delta.dfg.ca.gov/erp/docs/2006grants/2004Arundo_revisedv3.pdf

The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002, Water Code Division 26.5, annotated (Proposition 50) specifies that the ERP implementing agencies may disburse funds through grants (79505.6 Water Code Division 26.5). This ERP 2004 Monitoring and Evaluation proposal is being recommended for funding based on the following selection criteria:

- The proposal is for an eligible project within the meaning of Proposition 50 because it implements the CALFED Bay-Delta Program's Ecosystem Restoration Program.
- The proposal meets the goals and objectives of the CALFED Program.
- The proposal meets the priorities referenced in the 2004 Monitoring and Evaluation Proposal and Submittal Package.

Fiscal Information

Funding Source: Proposition 50 CALFED Ecosystem Restoration Program Funds

Term: Two years from executing the agreement

Total Amount: \$110,000

List of Attachments

Resolution 06-10-03

Contact

Bellory Fong
Ecosystem Restoration Program
Department of Fish and Game

Phone: (916) 445-0076



650 Capitol Mall, 5th Floor
Sacramento, CA 95814
916.445.5511 FAX 916.445.7297
<http://calwater.ca.gov>

Agenda Item: 6b
Meeting Date: October 12, 2006

**CALIFORNIA BAY-DELTA AUTHORITY
RESOLUTION 06-10-03**

**RECOMMENDING THAT
THE DEPARTMENT OF FISH AND GAME PROCEED WITH AWARDING
A CALFED ECOSYSTEM RESTORATION PROGRAM GRANT TO THE SONOMA
ECOLOGY CENTER FOR THE PROJECT:
ARUNDO DONAX ERADICATION AND COORDINATION PROGRAM:
DEVELOPMENT OF A MONITORING PROTOCOL**

WHEREAS, the Ecosystem Restoration Program presents a comprehensive vision for improving and increasing aquatic and terrestrial habitats and improving ecological functions in the Bay-Delta ecosystem; and

WHEREAS, those State and Federal agencies with CALFED Program restoration funds have coordinated their efforts to solicit for, and select, the best projects to implement the Ecosystem Restoration Program, with assistance of the staff from the California Bay-Delta Authority; and

WHEREAS, the Department of Fish and Game has received an appropriation of Proposition 50 Bay-Delta Ecosystem Restoration Account funds in its Fiscal Year 2004-05 Budget which has been reappropriated in Fiscal Year 2005-06; and

WHEREAS, the Department of Fish and Game may distribute funds through grants; and

WHEREAS, the non-native invasive grass *Arundo donax* (Arundo, giant cane) threatens the ecological integrity of the rivers and streams throughout the CALFED solution area by altering ecosystem processes and negatively affecting native species; and

WHEREAS, the proposal listed in Attachment 1 intends to develop and test a peer-reviewed monitoring protocol that will bridge Arundo eradication communities using Weed Information Management System and enable more reliable analysis of the effectiveness of Arundo eradication actions and methods in Northern California; and

WHEREAS, the proposal listed in Attachment 1 constitutes an eligible project for purposes of receiving Proposition 50 Bay-Delta Ecosystem Restoration Account funds; and

WHEREAS, the proposal listed in Attachment 1 currently meets the objectives of the CALFED Program; and

WHEREAS, approval of this proposal shall be conditioned upon the recipient complying with all applicable laws and regulations; and

NOW, THEREFORE, BE IT RESOLVED that the California Bay-Delta Authority recommends to the Department of Fish and Game that it fund the project *Arundo donax* Eradication and Coordination Program: Development of a Monitoring Protocol, a CALFED Ecosystem Restoration Program agreement in the amount of up to \$110,000.

CERTIFICATION

The undersigned Assistant to the California Bay-Delta Authority does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Authority held on October 12, 2006.

Dated: _____

Julia E. Alvis
Assistant to the California Bay-Delta Authority

Ecosystem Restoration Project Description

Proposal Number: ERP-04-S14

Applicant Organization: Sonoma Ecology Center

Proposal Title: *Arundo donax* Eradication and Coordination Program: Development of a Monitoring Protocol

Recommended funding: \$110,000

Description: This proposal will develop an improved monitoring protocol for use with the Weed Information Management System at partner eradication sites. The improved protocol will identify specific plant species, both native and non-native, and measure both understory and canopy vegetation cover. Partners will also have the capacity to collect additional site information and data pertaining to their specific management parameters. A set of guidelines for the implementing the monitoring protocol will be developed. Use of reference sites, frequency of sampling and other performance measures will be incorporated into the monitoring protocol.

Active revegetation activities will be logged and described along with other treatments to the site, such as eradication of *Arundo* and other weeds that may be originally present at the site or subsequently spread into the area where *Arundo* has been removed. The resulting expanded dataset will support analysis for evaluation of eradication methods, revegetation, water quality and hydrologic response to eradication. Restoration of habitat will be defined in terms of observable trends toward native riparian plant communities. Indicators of these trends are: higher percentages of native plant cover, lower percentages of invasive plant cover, and higher numbers of native species compared to invasive species, or diversity as indicated by diversity index.

To facilitate restoration monitoring, the proposed project will address several problems identified as barriers to complete and timely data collection and delivery. First, the project will fill the need for a comprehensive plant community monitoring protocol that can be reliably and consistently implemented by weed eradication partners concurrent with eradication efforts. This new protocol and support system will eliminate the need for a separate data collection team and the additional coordination work associated with gaining access to the eradication sites, many of which are located on private land. The monitoring protocol will be based on accepted quantitative monitoring protocols for riparian plant community characteristics known to affect habitat quality and instream conditions, such as the California Department of Fish and Game California Coastal Salmonid Restoration Monitoring and Evaluation Program's Interim Restoration Effectiveness and Validation Monitoring Protocols (2003), and the vegetation monitoring being implemented as part of the Plan for Monitoring the Effects of Releasing the Saltcedar Leafbeetle, *Diorhabda elongata*, for Biological Control of Saltcedar: *D. elongata*, Vegetation, and Wildlife Research Phase, Stage B, as prepared by the Insect, Vegetation and Wildlife Subcommittees of the Saltcedar Consortium (Eberts, et.al., 2000).

Protocol documentation will be developed to instruct the partners in techniques for repeatable quantitative evaluation of the plant community and comparable data collection across partners. The project will provide intensive support of the partners in the use of WIMS to monitor erradications, and manage and report data. A project Data Coordinator will combine, quality check, and analyze the data, and evaluate and share the results after each monitoring season to allow for adaptive management changes to practices, the protocol, and the WIMS data management system.

The following tasks will be completed:

Advisory Panels

Advisory panels composed of plant community ecologists from Team Arundo del Norte (TAdN) and qualified scientific staff from academic institutions will be assembled to provide expert consultation and peer review on protocol development.

Review Literature

Methods of data collection and analysis used by invasive species control projects in applicable plant community settings will be identified and reviewed. The grantee will review vegetation description, photo documentation, monitoring and analysis literature applicable to the species and habitat types encountered in TAdN eradication operations.

Develop Erradication Monitoring Protocol

The grantee will identify the range of plant community types in which the protocol is designed to be used. For each plant community type, the protocol will identify measures of plant community change and other biological indicators of eradication success that are consistent with the invasive species objectives of TAdN, its affiliates and the CALFED Ecosystem Restoration Program.

Measurement methodologies for each measurement/plant community pair will be described.

The Advisory Panels convened for this project will review and make recommendations for a Draft Eradication Monitoring Protocol.

A Draft Eradication Monitoring Protocol will be submitted to the grant manager for review by the CALFED ERP. A CALFED ERP approved Protocol will be used to produce a working draft of the protocol and training materials for TAdN and affiliated field teams.

The grantee will test the new protocol in the field at selected sites using the WIMS data capture system developed for the protocol. The test monitoring will document missing or inadequate data capture elements and measurement methodology refinements as needed.

An analysis of test data will be conducted to determine how well the protocol addresses project hypotheses.

The protocol, training materials and data collection system will be reviewed by the advisory panels and revised as needed. A Final Eradication Monitoring Protocol will be submitted to the ERP.

The Final Eradication Monitoring Protocol and all revised training and support materials will be posted on the Team Arundo del Norte website. The grantee will submit a paper or poster to the Cal-IPC Symposium, and a paper to the CALFED on-line journal or other appropriate peer-reviewed forum.

Training Materials

The grantee will produce monitoring protocol training materials for use with the WIMS data collection system. The training materials will be based upon the Final Eradication Monitoring Protocol. Revisions from the testing of the Draft protocol and advisory panel recommendations will be incorporated into the materials as applicable.

User Training

The grantee will provide monitoring protocol training and support to TAdN partners and affiliates on an as requested basis. Training will include follow-up support by phone, e-mail, and during scheduled field visits. For the term of this agreement the grantee will collate all monitoring data received and conduct data quality checks for accuracy and completeness with respect to the protocol.