



CALFed Progress Questionnaire
California Sea Grant College Program

ConfirmationNumber
20080407162321

Printed: 4/25/2008

1:19:07 PM

ProjectYear_2A 1st Year ProjectNo_2C R/SF-17
TypeQuestionnaire_2B Interim Questionnaire

Preparer Information

PrepName_1A Christine Whitcraft
PrepEmail_1B cwhitcra@gmail.com
PrepPhone_1C 415-338-3704

Project Information

ProjectNo_2C R/SF-17 StartDate_3a March 1 2007 EndDate_3b March 1 2008
ProjectTitle_4 Role of exotics as ecosystem engineers affecting estuarine food webs in Suisun Marsh

CALFed Fellow contact information

FelTitle_5A Dr FelLast_5B Whitcraft FelFirst_5C Christine FelInit_5D R
FelInstitution_5E San Francisco State University
FelDepartment_5F San Francisco Bay National Estuarine Research Reserve
FelStreetAddr_5G 3152 Paradise Dr
FelCity_5H Tiburon FelState_5I CA FelZip_5J 94920
FelPhone_5K 415-338-3704 FelFax_5L 415-435-7120
FelEmail_5M cwhitcra@gmail.com
FelPositionTitle_5N post-doctoral fellow

Research Mentor (for additional please see #8)

RMTtitle_6A Dr RMLastName_6B Talley RMFirstName_6C Drew RMInit_6D M
RMInstitution_6E San Francisco State University
RMDepartment_6F SF Bay NERR
RMStreetAddr_6G 3152 Paradise Dr
RMCity_6H Tiburon RMState_6I CA RMZip_6J 94920
RMPhone_6K 415-338-3724 RMFax_6L 415-435-7120
RMEmail_6M dtalley@sfsu.edu
RMPositionTitle_6N research coordinator

Community Mentor (for additional please see #9)

CMTtitle_7A _____ CMLastName_7B Wallace CMFirstNamt_7C Ben CMInit_7D _____
CMInstitution_7E Solano Land Trust

Summary of progress in meeting each of these goals and objectives

ProgressSummary_11

Starting in March 2008, a significant amount of background research (published literature, gray literature, management documents, unpublished graduate student work) was conducted to understand the landscape and invasion history of Rush Ranch. In April 2007, a major eradication project was started in a seasonal wetland area of Rush Ranch. The objectives and timing of this portion of our work was dictated by the needs of my community mentor, Ben Wallace from the Solano Land Trust (SLT). SLT needed to conduct spraying in this seasonal wetland so we established an experimental design that would allow them to test the efficacy of two herbicides in eradicating Lepidium (perennial pepperweed). These plots were monitoring pre-treatment, 1 month post-treatment, and 6 months post-treatment. In addition, in May 2007, we established a mensurative experiment that allows us to compare Lepidium-invaded and non-invaded habitats within four different habitats (low, mid, and high marshes, seasonal wetlands). These have been monitored for insect community data in spring 2007 and for all benthic parameters in fall 2007.

PROJECT MODIFICATIONS: Please explain any substantial modifications in research plans, including new directions pursued. Describe major problems encountered, especially problems with experimental protocols and how they were resolved. Describe any ancillary research topics developed.

Modifications_12

No major modifications were made to the techniques used and the experiments proposed. Initially, we proposed to work on three invasive plants at Rush Ranch. However, once work started we found that Arundo (giant reed) was not really a large-scale problem at Rush Ranch so this plant has been dropped from planned research. We also proposed to look at the impacts of Phragmites (common reed) and have established transects that will used for another mensurative experiment in spring 2008.

We have changed some of the details of our stable isotope analysis protocols to deal with a system that relies less on microalgae and more on detrital matter. This just means difference emphasis in collection of source materials. In addition, we have expanded our insect collection techniques to include pitfall trapping for ground-dwelling insects and sticky trapping for very mobile canopy-dwelling insects.

BENEFITS AND APPLICATIONS: Suggest the relevance of these new findings to management. Describe any accomplishment, that is significant effects your project has had on resource management or user group behavior. CALFED is looking for "management cue" (see <http://science.calwater.ca.gov/pdf/soemgmtcues.pdf>).

BenefitsApplic_13

Our project has two different thrusts that will produce results relevant to management of the Sacramento-San Joaquin estuaries. First, our targeted eradication experiments in several habitats are evaluating the efficacy of two herbicides (year 1) and multiple herbicides and non-herbicide control methods (year 2). This will provide managers with specific information about which herbicide is most effective in controlling *Lepidium* in different habitats with minimal non-target effects. Second, our mensurative comparison of *Lepidium*-invaded areas with non-invaded areas in three habitats will provide valuable information about how *Lepidium* is impacting its surrounding environment as well as whether this impact varies with habitat. Understanding these questions can help prioritize eradication efforts by habitat with species of special concern in mind. Both of these outputs will contribute to the CALFED restoration of habitat goals by providing more adequate control of an invasive. As noted, such targeted and informed commitment to eradication is necessary for long-term restoration success in the Estuary.

A large rectangular area with horizontal dashed lines, intended for handwritten responses.

COOPERATING ORGANIZATIONS: List those agencies and/or persons who provided financial, technical or other assistance to your project since inception. Describe the nature of their collaboration.

CoopOrganiz_15

USDA - Exotic and Invasive Weeds Research (collaboration with Brenda Grewell on the eradication experiment conducted in the seasonal wetland). Dr. Grewell has donated her time and expertise to the field work portion of this project.

AWARDS: List any special awards or honors that you, or mentor or members of the research team, have received during the duration of this project.

Awards_16

n/a

KEYWORDS: List keywords that will be useful in indexing your project.

Keywords_17

Perennial pepperweed, Lepidium latifolium, invasive, weed management, benthic, stable isotope analysis, Rush Ranch

