

**SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT (SCCWRP)  
REQUEST FOR PROPOSAL**

***INVESTIGATION OF BIOACCUMULATIVE CONTAMINANT CONCENTRATIONS IN  
BIRD EGGS IN THE SAN DIEGO CREEK/NEWPORT BAY (SDC/NB) WATERSHEDS***

**I. INSTRUCTIONS TO BIDDERS**

Three copies Bidder's complete Proposal to provide the services detailed are to be enclosed in a sealed envelope marked "Bird Egg Study" and addressed to:

Bryan Nece  
Administrative Officer  
7171 Fenwick Lane  
Westminster, CA 92683-5218

All supplemental materials requested within this Proposal must be attached to the Proposal. Any unauthorized conditions, limitations, or provisions attached to this Proposal may be cause for rejection.

If a Bidder wishes to withdraw its Proposal, the Bidder may do so without prejudice by delivering a written notice of withdrawal to the Administrative Officer at any time before the time fixed for the opening of bids.

SCCWRP is accelerating the bidding process for this project due to the need to sample during the 2004 nesting season for target species of birds in southern California. Sealed bids will be received at SCCWRP's offices, 7171 Fenwick Lane, Westminster, CA, up to the hour of **11:00 am on May 21, 2004**, at which time, the Administrative Officer will open the bids. Bids received by facsimile or E-mail will not be accepted.

All Bidders should inform SCCWRP in writing of their intention to submit a bid by May 14, 2004 via email ([bryann@sccwrp.org](mailto:bryann@sccwrp.org)), FAX (714.894.9699) or letter mail. Although this notification is not mandatory, it is necessary to ensure receipt of future updates to the bid notification. SCCWRP will not hold a Bidders meeting but will respond to all questions submitted by email by May 14, 2004. SCCWRP's responses to these questions will be sent to the Bidders by E-mail and posted on the SCCWRP web site ([www.sccwrp.org](http://www.sccwrp.org)).

This solicitation for proposals shall not be construed as obligating SCCWRP to award a contract or pay any compensation for the information solicited.

**II. BACKGROUND AND GOALS OF STUDY**

Elevated selenium (Se) concentrations have recently been found in the groundwater that supplies the lower San Diego Creek watershed in Orange County California. Selenium is a micronutrient for many animals and some plants but can be toxic in higher amounts. Some species of birds are

potentially at risk from Se poisoning and are known to feed in the San Diego Creek (SDC) and Upper Newport Bay (UNB). The goal of this study is to determine contaminant concentrations (in particular selenium) in birds that are at high risk of exposure to selenium-contaminated food items in the San Diego Creek/Newport Bay (SDC/NB) watershed and to provide data in support of the Toxics Total Maximum Daily Loads (TMDLs).

One potential area of concern is the 492-acre San Joaquin Marsh (SJM), which provides both water quality improvements to SDC flow as a constructed surface flow treatment wetland and coastal freshwater wetland habitat. More than 200 bird species have been identified at the SJM, which is located along the Pacific Flyway. Elevated concentrations of selenium are present in the water and organisms inhabiting San Diego Creek (SDC). Water for the marsh is pumped from SDC through a series of treatment ponds that remove 25-45% of the nitrate from the creek influent. Measurements of selenium concentrations in the influent and effluent flows from the SJM indicate that approximately 30% of the selenium in the water column is also removed by the marsh. However, selenium has not been detected in sediments collected from several locations in the marsh with a reported detection limit of 1.0 mg/kg and at this time the amount of selenium that may be lost due to volatilization is not known. It is likely that some of the selenium is accumulating in the birds and biota in the SJM. In addition, the 1,357-acre Upper Newport Bay Ecological Reserve (UNB) is the largest estuary in Orange County and represents an important resting and feeding area for birds traveling the Pacific Flyway. Portions of UNB are contaminated by polychlorinated biphenyls (PCBs), chlorinated pesticides, selenium, and heavy metals. San Diego Creek is the largest freshwater input to UNB. In June 2002, the US Environmental Protection Agency promulgated technical TMDLs for toxic constituents in the SDC/NB watershed. Development of a TMDL requires an understanding of the sources, fates, and effects of these contaminants in the watershed. The many species of birds that nest or feed in the SJM, SDC, and UNB are an important receptor for contaminants. One of the key steps in estimating the risk of contaminant exposure to birds is to determine the concentrations of the contaminants of interest in the various components of their diet and in their eggs, as Se toxicity often results in reproductive impairment and embryo deformation.

The Southern California Coastal Water Research Project is collaborating with the Santa Ana Regional Water Quality Control Board to determine the concentration of selenium in viable eggs from shorebirds such as American avocet or black-necked stilt, and waterfowl such as mallard or gadwall. There is little recent data that describe the selenium concentrations present in bird eggs in the SDC/NB watershed. Obtaining information on the contaminant concentrations present in bird eggs and the corresponding food web components will help facilitate the estimation of the risk to wildlife from selenium that inhabit the watershed.

### **III. CONTRACTOR SCOPE OF WORK**

SCCWRP is requesting proposals from potential consultants to provide technical assistance to carry out the goals of this study. Shorebird, waterfowl, or other selected bird species eggs will be collected from the San Joaquin Marsh Wildlife Sanctuary (including adjacent wetlands and riparian areas), San Diego Creek (2 or 3 locations, if nesting birds are present); and possibly the very upper estuarine part of the Upper Newport Bay Ecological Reserve, and measured for selenium (Se) concentrations. Samples will be split and some archived for possible analyses of

other chemicals as funding becomes available. Sediment and food items will also be collected from the nesting and feeding locations of these birds and archived for future analysis as funds become available.

Selection of the species will be made based on the abundance of the species at the sampling locations and discussions with the UNB Reserve Manager - California Department of Fish and Game (DFG), US Fish and Wildlife Service (USFWS) staff, Southern California Coastal Water Research Project (SCCWRP) staff, Irvine Ranch Water District (IRWD) staff, and University of California, Irvine (UCI) staff, with final approval by the State Water Resources Control Board's (SWRCB) Project Representative. Different portions of the SJM are managed by IRWD and UCI. Eggs will first be examined for embryonic developmental abnormalities (teratogenesis) typically caused by Se and measured for eggshell thickness for chlorinated pesticide effects. These eggs will then be shipped for Se analysis. Viable eggs of these species will be collected throughout the 2004 nesting season. If an adequate number of eggs cannot be collected during the 2004 nesting season, eggs will be collected in the 2005 nesting season as needed.

In addition to the collection of bird eggs, a synoptic series of sediment and food-chain biota samples will be included in this study and archived for future analysis, if needed.

The contractor, under permit with DFG, will conduct nest surveys, egg collection, and other sample collection. Samples will be analyzed for total Se. Unused egg contents will be archived for future contaminant analyses. The results from this study will be used to design a more detailed and comprehensive study of possible contaminant impacts to birds in-the SDC/NB watershed and will be incorporated into the implementation plans for the Toxic TMDLs.

Elements of the Contractor tasks include the following:

1. Field sampling. Contractor will develop a study plan and coordinate and conduct all tasks necessary to complete sampling of bird eggs, related food organisms, and sediments including, but not limited to the following tasks: Provide appropriate sampling equipment and containers, vessel, safety equipment, and necessary personnel; ensure that all participating personnel are properly trained in safety and in chain-of-custody procedures and Quality Assurance/ Quality Control (QA/QC) for the collection and handling of samples; and obtain all permits and clearances necessary to complete task. **Because field sampling is scheduled to begin immediately upon award of the contract, the contractor must already be in possession of the required state and federal collection permits.** Note that food organisms and sediments will be preserved and archived for possible future analysis should additional funding become available.
2. Physical analysis of bird eggs- All bird eggs collected will be physically inspected for signs of abnormal embryo formation (embryo teratogenesis) and eggshell thinning prior to being submitted to the laboratory for chemical analysis.
3. Chemical Analysis -- Bird egg tissues will be analyzed for total selenium. Split samples and all other samples will be archived for possible later analysis in the event that additional funds are allocated to the project.
4. Data Analysis and Reporting

Proposals should include a schedule of time required complete the work. Contractor deliverables will include:

1. Detailed sampling and analysis plan, including costs and time line, based on the final contractor scope of work.
2. Quarterly written updates of the progress of the study to the SCCWRP
3. Draft report shall contain detailed sections on the approved study approach, methods, results, discussion, and conclusions.
4. Final report that addresses the feedback and comments from SCCWRP on the draft report.

## **II. SPECIAL REQUIREMENTS AND INSTRUCTIONS**

The contractor will be required to comply with the following special requirements and instructions during the performance of services rendered under this project.

### **General**

The Contractor is required to comply with all general terms and conditions, certifications, assurances, provisions, laws, and regulations of State Water Resources Control Board Contracts.

### **Insurance**

The Contractor shall, at their sole expense, maintain in effect the following insurance coverage and include SCCWRP as an additional insured on their policy:

Workers' Compensation insurance shall be held and maintained by the Bidders as required by applicable laws of the State of California with a minimum amount and limit of One Million Dollars (\$1,000,000) for each accident.

General Liability insurance shall be held and maintained by the Bidders covering all operations by or on behalf of the Bidders providing insurance for bodily injury liability and property damage liability. The combined single limits of liability for bodily injury or property damage shall be One Million Dollars (\$1,000,000) for each occurrence, and One Million Dollars (\$1,000,000) aggregate.

Automobile Liability (Bodily Injury and Property Damage Liability) insurance shall be held by the Bidders, including coverage for all owned, hired, and non-owned automobiles. The combined single limit of liability shall be Two Hundred Fifty Thousand Dollars (\$250,000) for any one accident or loss.

### **Determination of Satisfactory Progress**

Satisfactory progress will be determined through quarterly reports. These reports may be in written form, or at the request of SCCWRP, in the form of a presentation.

### **Billing and Retention**

The Contractor shall provide invoices for work completed on a monthly basis. SCCWRP shall have the right to retain from the Contractor's earnings for each period for which payment is

made an amount equal to ten percent (10%) of such earnings, pending satisfactory completion of the agreement.

### **Ownership**

All interim, draft, and final documents, studies, graphics, maps, photographs, computer models, data sets, and reports prepared by the Contractor will be developed using public funds and are intended for public use. Public documents/products lose their status as privileged and proprietary and may not be used for proprietary development or profit.

### **Length of Contract**

The term under this contract will be approximately two years. The project must be completed by no later than February 28, 2006.

### **Scientific Collection Permits**

The Contractor shall be in possession of current state and federal permits required for the collection of bird eggs, organism and sediment samples in the study area at the time of submission of the proposal.

## **V. PROPOSAL SUBMISSION**

### **Length and Content of Proposal**

Proposals are limited to 10 single spaced pages (Times New Roman, 12-point font), exclusive of team qualifications, resumes and budgets. Bidders must submit three copies of the entire proposal package.

Content should address the following:

- 1) **Technical approach** for the study, including how the proposed approach meets the goals of the described in “Contractor Scope of Work.”
- 2) **Qualifications and experience** of the personnel that will be working on the proposed project. Minimum qualifications 1) possession of appropriate state and federal scientific permits for bird egg collection, 2) include publication of articles in peer-reviewed journals presenting results of a) analysis of embryo teratogenesis and other reproductive affects (e.g eggshell thinning) and b) analysis of bioaccumulation in birds and their foodchains resulting from selenium and other environmental contaminants.

### **Additional Information to Accompany Proposal Form**

#### **Budget**

SCCWRP has a total of \$43,500 for this study. Bidders should still submit costs for each task as well as a total cost for their proposal. These costs will be considered firm fixed fee proposals. The proposed budget should be included as a separate page(s) from the technical proposal. Detailed budgets for each study element outlining the proposed expenditures may be requested by SCCWRP from the winning Bidders.

### **Qualifications and Team Organization**

Include resumes for principal personnel who will participate in study approach.

## **VI. BID EVALUATION PROCESS AND CRITERIA**

Following the opening of bids, a review panel will evaluate the bids using the following criteria and scoring system. A maximum score of 100 points is possible.

1. Study approach. Each study approach will be rated based on the likelihood that it will meet the requirements of the study described in **Contractor Scope of Work**. (30 pts.)
2. Qualifications and experience. Proposals will be rated based upon each bidder's qualifications and experience. (60 pts). Experience working in semi-arid or arid environments is preferred.
3. Schedule. Each bidder will be rated on how realistic its proposed schedule is for the completion of the study. Note that collection of bird eggs must occur in the 2004 nesting season (10 pts).