

REQUEST FOR STATEMENTS OF INTEREST PROJECT TO BE INITIATED IN 2014

Project Title: GENETIC CHARACTERIZATION OF SAN DIEGO FAIRY SHRIMP POPULATIONS IN MARINE CORPS AIR STATION MIRAMAR BASINS, SAN DIEGO, CALIFORNIA

Responses to this Request for Statements of Interest will be used to identify potential investigators for a project to be funded by the Department of the Navy (DoN) to characterize genetics of populations of federally listed endangered San Diego Fairy Shrimp (SDFS), *Branchinecta sandiegonensis*, on Marine Corps Air Station (MCAS) Miramar. The authority for this Cooperative Agreement is Sikes Act 16 USC §670c-1(a). Approximately \$190,025.00 is expected to be available to support this project.

Background:

Unavoidable impacts to endangered San Diego Fairy Shrimp (SDFS) habitat for mission related purposes, as well as occasional accidental impacts to habitat both usually involve creation of new basins or restoration and enhancement of existing basins to uphold the U.S. Fish and Wildlife Service (USFWS) and Army Corps of Engineers no net loss wetland and fairy shrimp habitat requirements. Creation, restoration, and enhancement of basins usually involves inoculation of these basins with salvaged vernal pool material (for impacted basins) and limited collection of inoculum from natural basins to ensure establishment of vernal pool plants and animals. Geographical separation of impact and inoculum collection sites compared to mitigation sites leads to questions about establishment of inappropriately adapted populations from a genetic and fitness perspective. Genetic “contamination” of existing distinctive populations on specific sites is also a concern, which has led the USFWS to increasingly focus on restricting translocation of genetic material. Current Service concerns and possible future restrictions may limit management options for mitigation and mission support activities of the Marine Corp Air Station (MCAS) Miramar natural resource managers. The study proposed here is designed to characterize genetic composition within and among pools, pool groups, and disturbance category pools of the Miramar basins supporting fairy shrimp. Results are anticipated to help answer questions about inoculum salvage and collection locations appropriate for establishing newly created mitigation pools and mitigation banking pools on Miramar.

Brief Description of the Anticipated Work:

The primary objective is to collect and characterize the genetic diversity of SDFS within individual basins, and to determine whether there are statistically significant differences between basins within the same pool groupings and among different pool groupings (based on geographical isolating features and presumed pre-development connectivity). In particular, the following null hypotheses will be examined by the study:

1. Within individual basins, there are no significant differences in the genetic compositions of individuals from different ponding events in the same year
2. Within individual basins, there are no significant differences in the genetic compositions of individuals from ponding events in different years.

3. There are no significant differences between the genetic compositions of individuals in different basins within the same pool groups.
4. There are no significant differences between the genetic compositions of individuals in disturbed basins versus basins with obvious disturbance such as ruts, impoundment barriers, and other indications that these pools have been impacted by human activity.
5. There are no significant differences between the genetic compositions of individuals in different macro-groupings [by mesa top and probable geographic connectivity/divisions].
6. There are no significant differences between the genetic compositions of individuals in different groups characterized by major and widespread disturbance(s) versus relatively restricted and minor disturbances.

The Statement of Interest must explain the statistical analysis proposed and means for determining an adequate sample size to test the hypotheses.

The Statement of Interest must present options for utilizing cysts versus hatched shrimp in light of the possibility of drought and low or no hatching during years of the study.

The maximum funding for the project is \$190,025.00.

Permits and specimen collection assistance:

Since the work will be conducted on a federally listed endangered species, an appropriate Endangered Species Act section 10(a)(1)(A) permit will be required for collection of hatched specimens and collection and processing of dry samples for cyst recovery and culturing, if necessary. The environmental staff wildlife biologist at MCAS Miramar has the appropriate permit and special conditions for these activities, and will be available for collection of specimens. The extent of assistance to be provided will be subject to negotiation during the development of specific proposals.

Period of Performance:

The period of performance for this Cooperative Agreement is expected to be approximately 36 months from date of award (anticipated to be awarded approximately March 2014), though the exact period of work performance will be determined upon award, and will be subject to the Anti-Deficiency Act (31 U.S.C. § 1341).

Materials Requested for Statement of Interest/Qualifications:

Please provide the following via e-mail attachment to reagan.s.pablo@navy.mil (Maximum length: 4 pages, single-spaced 12 pt. font, single sided).

1. Name, Cooperative Ecosystem Studies Units affiliation and contact information.
2. Statement of credentials/qualifications of key personnel.
3. Project statement of interest to include timelines, roles and responsibilities of personnel, specific tasks to be conducted, and deliverables. Please be as specific as possible.
4. Propose price to include labor, materials and travel for 36 month period of performance.

Review of Statements Received: Based on a review of the Statements of Interest received, an investigator or investigators will be invited to prepare a full study proposal. Statements will be

evaluated based on the three factors listed below and include the credentials of key personnel, scientific approach, the reasonableness of cost, and safety plan. Evaluation factors are co-equal to each other.

Factor 1 - Credentials of Key Personnel

Project Manager. This individual must have:

- a PhD in Evolutionary Biology, Ecology or related science disciplines within the field of Biology
- a publication record demonstrating expert knowledge of population genetic laboratory techniques and data analysis in natural populations, and appropriate expertise for the scientific approach described below
- field and laboratory experience with fairy shrimp in California vernal pools
- a minimum of 5 years of experience as principle investigator/project manager providing oversight of genetic studies of this magnitude

Technical Staff. This individual(s) must have:

- a Bachelor's degree in Evolutionary Biology, Ecology or related science disciplines within the field of Biology. Master's degree preferable
- experience with genetic laboratory techniques including deoxyribonucleic acid extraction and Polymerase Chain Reaction amplification

Factor 2 – Scientific Approach – The Offeror shall develop an outline addressing the approach to addressing the null hypotheses mentioned above regarding fairy shrimp hybridization and the degree to which genetic variation for presumably neutral markers is partitioned within and among individuals, basins, and geographically/ecologically distinct pool complexes at MCAS Miramar. The Offeror shall be evaluated as to the soundness of the overall scientific approach to accomplish the objectives of the proposed project. The use of innovative techniques to accomplish the research goals is encouraged.

Factor 3 – Reasonableness of Cost – After technical evaluation of the proposal, the Offers shall be analyzed to determine whether they are materially/mathematically balanced with respect to prices or separately priced items, and for fair and reasonable pricing. A clear cost breakdown of work elements to be accomplished detailing quantities for the various work items, unit, unit prices and extended prices will be required and will be evaluated. Evaluation will include an analysis to determine the Offeror's comprehension of the requirements of the proposed agreement as well as to assess the validity of the Offeror's approach.

Relative Importance of Evaluation Factors - Factor 1, Credentials of the Key Personnel, Factor 2, Scientific Approach and Factor 3, Reasonableness of Cost are approximately equal.

Timeline for Review of Statements of Interest:

We request that Statements of Interest be submitted by Tuesday February 25, 2014 1400 PST. This Request for Statements of Interest will remain open until an investigator team is selected.

Please send electronic responses and questions to:

Mr. Reagan Pablo, Contract Specialist Environmental Acquisition Core
Reagan.s.pablo@navy.mil

Point of Contact Information:

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