



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
CONSTRUCTION ENGINEERING RESEARCH LABORATORY
P.O. BOX 9005
CHAMPAIGN, ILLINOIS 61826-9005

REQUEST FOR STATEMENTS OF INTEREST (SOI)
NUMBER W9132T-21-SOI-0026
PROJECT TO BE INITIATED in FY 2021

Project Title: Advanced Monitoring and Management of the Texas Horned Lizard on Tinker Air Force Base, Oklahoma

Responses to this Request for Statements of Interest will be used to identify potential investigators for a project to be funded by the Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), which seeks to conduct research on the ecology and develop conservation measures for a state sensitive reptile the Texas horned lizard, *Phrynosoma cornutum*. Approximately \$97,000 is expected to be available to support this project for a period of twelve (12) months after the initial award. Additional funding at approximately \$38,000 for FY 22 and \$44,000 for FY 23 is expected to support effort continuation for up to 2 years after initial performance period.

Note that the CESU F&A rate will be applied to any awards that result from this Request for SOIs.

Background:

The Department of Defense which is a participant of the CESU Network manages nearly 25 million acres of land, and the natural and cultural resources found there. DoD's primary mission is national defense. DoD's conservation program supports this mission by ensuring realistic training areas and managing its resources in ways that maximize available land, air, and water training opportunities. DoD land management issues and objectives have many similarities to other federal, state, and private land management programs.

The effect of land-use practices on sensitive species, such as endangered, threatened or "candidate" species, is of considerable conservation and political interest. However, little information is available to evaluate ecological effects of land uses such as burning, herbicidal treatment, grazing, or residential development on herpetofauna in general and the Texas horned lizard in particular. The Texas horned lizard is a species of special concern in the conservation community. It has experienced apparent declines throughout its range, but particularly in Texas (Price 1990) and Oklahoma (Carpenter et al. 1993). Factors suggested as causative of this decline include direct and indirect (insecticide use) effects of the red imported fire ant (*Solenopsis invicta*), habitat alteration for other land uses (e.g., agriculture, development), highway mortality, and commercial exploitation (Price 1990, Donaldson et al. 1994).

Tinker AFB has conducted research and provided considerable information on behavior, demographics, habitat requirements/modeling and translocation data for Texas horned lizards in an urban environment. This research fosters better management of the species on the Base and in Oklahoma. Improved management, in turn, promotes more robust populations and lessens the likelihood of federal or state listing of the Texas horned lizard as a threatened or endangered species. Preventing the listing of the species would then reduce potential restrictions on a variety of land uses, including military activities at Tinker Air Force Base and other military installations in the geographic range of the Texas horned lizard.

Brief Description of Anticipated Work:

The government seeks to continue this research on a population of approximately 56 Texas horned lizards, research areas would include Tinker AFB and satellite areas around the Base with key objectives of developing tracking and translocation methodologies, monitoring of survival rates, determining skin and gut microbiome diversity in individuals, diet and movements of lizards, as well as re-assessing population sizes and impacts due to prairie restoration and land use changes. An initial focus of the project will be to setup and test new Cellular Tracking Technology (CTT) including construction of receiving antennae and nodes (c). Upon completion new Solar Life Tags will be tested for their applicability of tracking lizards. Other objectives will continue annually through the duration of the project. Objectives include:

- a) Continue long-term monitoring of the Tinker Air Force Base (TAFB) Texas horned lizard population size and density on Wildlife Reserve 3 (WR3) and satellite areas.
- b) Continue to evaluate hatchling, juvenile, and adult survival rates of Texas horned lizards on WR3.
- c) Implement cellular tracking technology (CTT) LifeTags for increased data collection across WR3.
- d) Assess the status of the primary food source (harvester ants, genus *Pogonomyrmex*) for Texas horned lizards on WR3 and the prevalence of the invasive ant species recognized as a critical conservation threat (red fire ant, *Solenopsis invicta*).
- e) Track headstarted individuals after their release onto WR3, using CTT tags, and evaluate survival rates of headstarted Texas horned lizards on WR3.
- f) Develop a baseline understanding of host skin and gut microbiome diversity and structure in wild and headstarted lizards.
- g) Based on findings of this study, make recommendations for management of Texas horned lizard populations on Tinker AFB.

- h) Communicate results of this study through publications and presentations at meetings.

Substantial Government involvement is anticipated for this project. The Government's participation efforts include:

The Government will significantly contribute to the execution of the project. Government participation will consist of providing overall method protocols for research execution, coordinating DoD site access, clarifying project objectives, assisting with interpreting and evaluating findings, and reviewing results for adequacy.

Materials Requested for Statement of Interest/Qualifications:

Please provide the following via e-mail attachment (Maximum length: 2 pages, single-spaced 12 pt. font).

1. Name, Organization and Contact Information
2. Brief Statement of Qualifications (including):
 - a. Biographical Sketch,
 - b. Relevant past projects and clients with brief descriptions of these projects,
 - c. Staff, faculty or students available to work on this project and their areas of expertise,
 - d. Any brief description of capabilities to successfully complete the project you may wish to add (e.g. equipment, laboratory facilities, greenhouse facilities, field facilities, etc.).

Note: A proposed budget is NOT requested at this time.

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 investigator's specific experience and capabilities in areas related to the study requirements.

Please send responses or direct questions to:

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Timeline for Review of Statements of Interest: Review of Statements of Interest will begin **thirty days** after posting of SOI.