



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TX 76102-0300

REQUEST FOR STATEMENT OF INTEREST
Number W9126G-22-2-SOI-1683
Project to be initiated in 2022

Applicants must be a member in one of the Cooperative Ecosystem Studies Units (CESU):
Southern Appalachian Mountains/Great Rivers/Great Lakes****

Project Title: Bat Diet Characterization at Arnold Air Force Base, Tennessee

Responses to this Request for Statements of Interest will be used to identify potential investigators for a project to be funded by the US Air Force which provides professional and technical support for **Edwards Arnold** Air Force Base (AFB) in order to facilitate successful implementation of the 16 USC 670c-1 Sikes Act. Approximately **\$223,000** is expected to be available to support this project, depending on availability of funds.

Background:

Nine species of bats have been documented from Arnold AFB all of which are insectivores. Two bat species at Arnold AFB are listed as "Endangered" by the United States Fish and Wildlife Service (USFWS). The Indiana bat (*Myotis sodalis*) was listed on 11 March 1967 and the gray bat (*M. grisescens*) was listed on 28 April 1976. A third, the Northern long-eared bat (*M. septentrionalis*), was listed as "Threatened" on 4 May 2014. Additional species identified on the installation include the evening bat (*Nycticeius humeralis*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), big brown bat (*Eptesicus fuscus*), tricolored bat (*Perimyotis subflavus*), and little brown bat (*Myotis lucifugus*).

Previous studies at Arnold AFB have included examinations of aquatic and terrestrial arthropod communities and a broad scale examination of forest arthropods is currently ongoing. The bat community is well studied including inventory efforts across the installation and telemetry studies of roosting and foraging habits. Five sites on Arnold AFB are under continuous acoustic monitoring with mist netting at each site twice per year. Additionally, a gray and little brown bat roost site that is just off base at Beth Page Bridge is harp trapped annually. Finally, annual monitoring is conducted at a colony of gray bats that roosts in the Elk River Dam.

Article I B of the master agreement states the objectives of the CESU are to: provide research, technical assistance and education to federal land management, environmental and research agencies and their potential partners; develop a program of research, technical assistance and education that involves the biological, physical, social sciences needed to address resource issues and interdisciplinary problem-solving at multiple scales and in an ecosystem context at the local, regional, and national level; and place special emphasis on the working collaboration among federal agencies and universities and their related partner institutions.

In agreement with the above stated goals, the recipient/cooperator (hereafter Cooperator) agrees to provide the necessary personnel, equipment, and materials required to implement, in part, the Air Force responsibilities pursuant to the Endangered Species Act (16 USC 1531 et seq.), the Sikes Act Improvement Act, the Migratory Bird Treaty Act (16 USC 1361 et seq.), the National Environmental Policy Act (42 U.S.C. 4321 et seq.), and applicable implementing regulations, such as Air Force Instruction 32-7064, *Integrated Natural Resources Management*.

Type of Award:

This project will be awarded under the authority of the *Sikes Act* (Sec. 103A [16 USC 670c-1]) “the Secretary of a military department may enter into cooperative agreements with States, local governments, Indian Tribes, non-governmental organizations, and individuals,” This project is in support of the Integrated Natural Resources Management Plan, as directed in the *Sikes Act*, and as a result, it is anticipated that a cooperative agreement through the CESU program will be awarded. Such awards may be administered through a CESU only upon mutual agreement and official authorization by both parties of the acceptance of the application of the CESU Network IDC rate (17.5%).

Note: Must be a non-federal partner in one of the CESU Units, referenced above, to be qualified for considered.

Brief Description of Anticipated Work:

Field work for this project will occur over two years of field seasons (June through September 2022 and June through September 2023). Analysis will be conducted at the level of individual guano pellet for mist net/harp trap techniques. For guano collected at the dam, a combination of individual pellet and a pool of pellets will be used.

The NFE will be responsible for state and Federal permits required to enter the Woods Dam gray bat colony, mist netting, and any other proposed activities. Arnold AFB personnel will escort entries into the dam.

In order to collect guano needed for dietary analysis, the Cooperator will:

- Provide sampling equipment to Arnold AFB for collection of guano at annual mist net locations
- Attend annual harp trapping at Beth Page Bridge to collect guano
- Collect guano from the Elk River Dam by positioning clean plastic sheet(s) under the roost
- Collect guano from independent mist net locations at a duration of at least 10 nights at a minimum of 5 sites per year on the installation. Specific points to be used for mist netting will be selected in consultation with Arnold AFB Natural Resources personnel.

Captured bats of all species will be banded with either 2.9 mm uniquely numbered aluminum lipped bands (Porzana Ltd, Icklesham, East Sussex, UK) provided by Arnold AFB or, in the case of tri-colored bats, with Tennessee Wildlife Resources Agency (TWRA) 2.4 mm bands.

Genetic analysis will identify prey species to the lowest taxonomic classification possible using the barcode of life data system (BOLD), GenBank, and/or other genetic database(s). Species accumulation curves will be used to indicate the completeness of dietary sampling.

Comparisons will be made between bat species and years utilizing the lowest operational taxonomic units (OTU) possible (e.g., family, genus, species). Comparisons should include differences in composition, richness, and evenness of prey OTUs. Significant dietary OTUs, if they exist, should be identified for each species of bat for which samples are collected. Within-species variation in diet will be assessed for species where multiple individuals were sampled. Relate prey species composition to previous bat and arthropod studies in addition to foraging habitat quality (forest, lentic and lotic waters) using available reports and data provided by the Base. Specific statistical analyses will be identified in the study plan, but may include:

- Bipartite networks created to visualize dietary connections between each bat species and their dietary components (community interactions and associations), and between bat species and their insect prey at the level of taxonomic Family (species associations).
- An adjacency matrix to visualize possible modules within the Arnold AFB bat community.
- Non-metric multidimensional scaling or other distance-based techniques

Note: At this time we are only requesting that you demonstrate available qualifications and skills for performing similar or same type of work. You will be evaluated for request for a proposal based on skills, qualifications and certifications demonstrated in your SOI.

Preference will be given to statements of interest that demonstrate the minimum qualifications necessary to perform the tasks as described in the SOO. The principal investigator should have experience directing the efforts of the project team. NFE personnel shall have the technical experience, the field implementation experience, any required state and federal certifications, and any required state or federal handling or application permits likely to be used in this project. The NFE shall furnish all labor, materials, equipment, supplies, technical expertise, and supervision needed to perform all field efforts.

In accordance with the 10 USC 670c-1, Sikes Act, projects for the implementation and enforcement of integrated natural resources management plans, priority shall be given to Federal and State agencies having responsibility for the conservation or management of fish or wildlife.

Period of Performance.

(For Sikes Act Authority awards, the POP can be up to 18 months for severable services, and longer for non-severable. If the PoP will be greater than 18 months, explain what work is non-severable and **WHY** it is non-severable):

This agreement is non-severable as it requires a final report to be prepared and submitted once the surveys and the final data analysis have been completed.

The period of performance is anticipated to be 24 months from date of award.

Materials Requested for Statement of Interest/Qualifications:

(Maximum length: 2 pages, single-spaced 12 pt. font).

- 1.** Name, Organization, Cage Code, Duns number, and Contact Information (Email)
- 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 full study proposal and proposed budget are NOT requested at this time.

Review of Statements Received: All statements of interest received will be evaluated by a board comprised of one or more people at the receiving installation or activity, who will determine which statement(s) best meet the program objectives. 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:

Audria Gill
Grants Specialist
USACE Ft. Worth District
audria.j.gill@usace.army.mil
Office: (817) 886-1925

McCullough Wells
Project Manager
USACE Omaha District
margaret.m.wells@usace.army.mil
Office: (402) 995-2590

Timeline for Review of Statements of Interest: The RSOI is required to be posted for at least 30 days prior to the Government making a decision and requesting full proposals. Responses due by 5:00 P.M., Central Time, on **11 March 2022**.

[End of RSOI]