



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

April 12, 2024

**REQUEST FOR STATEMENT OF INTEREST
W9126G-24-2-SOI-2403**

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

Project Title: Environmental Contaminants Exposure from Streams to Terrestrial Foodwebs and T&E Bat Vulnerability at Arnold Air Base, Tennessee. A cooperative agreement is being offered ONLY to members of the Cooperative Ecosystem Studies Units (CESU) Program Region(s) identified above. Award will be made upon mutual agreement and acceptance of the terms and conditions contained in the request for proposal and the of the recipient's CESU Master Agreement. Note the established CESU Program indirect rate is 17.5%.

Responses to this Request for Statements of Interest will be used to identify potential organizations for this project. Approximately **\$227,000** is expected to be available to support this project for the **base period**. No additional funding will be available for optional tasks and/or follow on work in subsequent years.

NOTE: This project will be awarded under the authority of 16 USC 670c-1, **Sikes Act:** For projects for the implementation and enforcement of integrated natural resources management plans, priority shall be given to award to Federal and State agencies having responsibility for the conservation or management of fish or wildlife.

Period of Performance. The base period of agreement will extend 24 months from date of award. There will be no follow-on periods.

Description of Anticipated Work: See attached Statement of Objectives

NOTE: At this time we are only requesting that you demonstrate available qualifications and capability for performing similar or same type of work by submitting a Statement of Interest. A full proposal and budget are NOT requested at this time.

Preparation of your Statement of Interest: Provide the following (Maximum length: 2 pages, single-spaced, 12 pt. font):

1. Name, Organization, Cage Code, Unique Entity ID, and Contact Information (Email)
2. Brief Statement of Qualifications (including):
 - a. Biographical sketch of the Principal Investigator, to include specific experience and capabilities in areas related to this project's requirements
 - 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. Brief description of other capabilities to successfully complete the project:
(e.g. equipment, laboratory facilities, greenhouse facilities, field facilities, etc.)

Submission of Your Statement of Interest

1. Statements of Interest are due by 5:00 P.M., Central Time, on **12 May, 2024**
2. Submit your Statement of Interest via e-mail attachments or direct questions to:
Maria Lopez
Grants Specialist
USACE, Fort Worth District
Email: **Maria.E.Lopez@usace.army.mil**
Office: 817-886-1881
Kelsee Crawley
Project Manager
USACE, Fort Worth District
Email: **Kelsee.F.Crawley@usace.army.mil**

Review of Statements Received: All statements of interest received from a member of the CESU Region(s) identified above 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: offer the most highly qualified Principal Investigator, have the most relevant experience and the highest capability to successfully meet the program objectives. Submitters whose statements are determined to best meet the program objectives will be invited to submit a full proposal.

Timeline for Review of Statements of Interest: RSOI's are required to be posted on www.Grants.gov for 30 days prior to the Government making a decision and requesting full proposals.

Thank you for your interest in our Cooperative Agreements Program.

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Grants Officer

Attachment: Statement of Objectives

STATEMENT OF OBJECTIVES

Environmental Contaminants Exposure from Streams to Terrestrial Foodwebs and T&E
Bat Vulnerability at Arnold Air Base, Tennessee
Article III, (D) of the Southern Appalachian Mtns / Great Rivers Cooperative Ecosystems
Studies Units (CESU)

1. PURPOSE

This Scope of Objectives (SOO) provides the details of technical support to be performed for Arnold Air Force Base (AAFB) through a cooperative agreement (CA). The objective of this CA is to identify potential bioaccumulation of emerging contaminants in aquatic food sources of federally protected bats at AAFB.

Background

Nine species of bats have been documented from Arnold AFB all of which are insectivores. Three of these species at Arnold AFB are listed as Endangered by the United States Fish and Wildlife Service (USFWS), the Indiana bat (*Myotis sodalis*), the gray bat (*M. grisescens*), and the Northern long-eared bat (*M. septentrionalis*), and – one species is proposed for listing the tricolored bat (*Perimyotis subflavus*) and one species is under review for listing the little brown bat (*Myotis lucifugus*). Additional insectivores species on Arnold AFB include the evening bat (*Nycticeius humeralis*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), and big brown bat (*Eptesicus fuscus*).

Previous studies at Arnold AFB that 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 Arnold AFB 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 Arnold AFB 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.

This study will continue to describe chemical environmental contaminants (e.g. mercury, DDE, lead, and algal toxins (as appropriate)) from streams to terrestrial foodwebs and the subsequent endangered bat vulnerability through the collection of aquatic and terrestrial insects, sediment cores, water sampling, and provided bat guano.

The contracted entity will be responsible for state permits required for insect collection.

General Objectives

The purpose of this work is to (1) identify mercury, DDE, lead, and algal toxins concentrations in streams on Arnold AFB, (2) assess relative biomagnification of mercury, DDE, lead, and algal toxins in stream food web components, and (3) identify potential mercury, DDE, lead, and algal toxins transport pathways to terrestrial consumers on Arnold AFB. Mercury, DDE, lead, and algal toxins biomagnification and

stream to terrestrial contaminant transport will focus on emergent aquatic insect groups that are consumed by federally endangered gray bats on Arnold AFB. Field work for this project will occur over the course two years' field seasons.

2. AUTHORITY

2.1 This cooperative agreement will be awarded using one of the following authorities (Check the appropriate box by double clicking the square):

- 16 U.S.C. § 670(c) (1) – (SIKES ACT)**, USACE Acquisition Instruction (UAI) Part 5101, revised 4 March 2024, re-delegation of Authority in 16 U.S.C. §670C-1.
- 10 U.S.C. § 2358** - Research and Development, UAI Part 5101.
- 10 U.S.C. § 2684a** - Agreements to limit encroachments and other constraints on military training, testing, and operations, UAI Part 5101.
- 10 U.S.C. § 2684** – Cultural Resources, Delegation of Authority under Title 10 United States Code, Section 2684 – Cooperative Agreements for Management of Cultural Resources.
- 10 U.S.C. § 2701d** - Responsibilities under the Defense Environmental Restoration Program (DERP), UAI Part 5101.

2.2 In accordance with 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 (INRMP), as directed in the Sikes Act.

2.3 In agreement with the above stated goals, the recipient/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*.

2.4 In accordance with section 6305 - *Using cooperative agreements of the Federal Grant and Cooperative Agreements Act of 1977* (31 U.S.C. § 6301 et seq.),. In general, cooperative agreements must carry out a public purpose of support or stimulation, however under the authority of the Sikes Act (16 USC 670c-1 (c) (2)), notwithstanding chapter 63 of Title 31 (31 U.S.C. § 6301 et seq), a cooperative agreement under this section may be used to acquire property or services for the

direct benefit or use of the United States Government. Examples of carrying out a public purpose may include, but are not limited to, the following:

- Project results are made available to a wide audience (including nonfederal entities)
- Project results/outputs add to the scientific literature/knowledge base, with applicability and utility beyond the scope of the project footprint/study area
- Academic and other nonfederal partner institutions (and their personnel) gain professional experience, increase knowledge, and develop skills and abilities
- Students benefit from direct interaction with federal scientists, program and technical staff, and field unit managers

2.5 In accordance with section 6305 – *Using cooperative agreements of the Federal Grant and Cooperative Agreements Act of 1977* (31 U.S.C. § 6301 et seq.), substantial involvement is expected between the Department of Defense and the recipient when carrying out the activity contemplated by the cooperative agreement. The DoD agrees to participate at a national level in support of the CESU program as accepted in the Master MOU for the establishment and continuation of the CESU program Article II 1-4 and Article VI 1-7.

2.6 The installation further (hence DoD) agrees to provide substantial involvement as directed under Article II (A) CESU Master Agreements to include, but are not limited to, the following:

- INSTALLATION is involved in development of study methodology, data gathering, analysis, and/or report writing.
- INSTALLATION actively participates and collaborates in carrying out the project plan of work, reviews and approves activities, helps train or select project staff or trainees.
- INSTALLATION incurs in-kind or direct expenditures in carrying out the activities specified in the project agreement.

3. DESCRIPTION OF OBJECTIVES

The NFE shall perform the following work elements for the project:

1. Study Plan Preparation:

- a. Prepare a draft study plan that presents the detailed study approach, sample collection and analyses, and proposed data analysis plan. After approval of draft by Arnold AFB, produce a final study plan.

2. Field Sampling, Foodweb, and Toxins Analysis:

Streams and the reservoir coves where each stream enters their respective reservoirs will be sampled to include, Mercury, DDE, lead, and algal toxins.

- a) *Identify Mercury, DDE, Lead, and algal toxins concentrations in streams on Arnold AFB.* Stream/reservoir sediment and water will be collected at each site. Sediment will be collected using 15 cm deep cores from five

locations at each site. Sediment samples will be combined and homogenized to produce one composition sample per site. Water will be collected from a representative location at each site.

- b) *Assess relative biomagnification of Mercury, DDE, Lead, and algal toxins in the stream food web.* Dominant stream food web components will be collected including sediment organic matter, biofilms, dominant macroinvertebrate groups, and fishes at each site. Macroinvertebrate collection will focus on aquatic emergent insect groups that are known to be consumed by endangered bats.
- c) *Identify potential Mercury, DDE, Lead, and algal toxins transport pathways to terrestrial consumers.* Terrestrial consumers and emergent aquatic insects will be collected at each site and analyzed for isotopes and Mercury, DDE, Lead, and algal toxins with the same procedures as the aquatic organisms. Adult emergent insects will be collected using light traps deployed at each site. Riparian tetragnathid spiders will be used as terrestrial consumers, and act as surrogates for bats as they both consume similar aquatic insect prey. Spiders will be hand collected from each site. These organisms will be added to the stream food web trophic model to link sediment/water contaminants, emergent insect contaminants, and terrestrial consumer contaminants content. Evaluate/compare contamination from provided bat guano. Provide sampling equipment to Arnold AFB for collection of guano from at annual mist net locations.

(Note: Algal toxin collection/sampling will be dependent upon site conditions and potential presence.)

A. Reporting:

Prepare a scientifically formatted report presenting the findings of the project.

1. The NFE will provide monthly email/phone updates as to the progress of the project.
2. The NFE shall provide draft reports (electronic copy) including all data collected. A summary and interpretation of data also will be provided.
3. Upon review (and subsequent return) of the draft reports, comments will be addressed, and the final reports will be submitted to Arnold AFB.
4. All geographic data will be provided for entry into the Arnold AFB GIS database. Format will be in SDSFIE 4.0 or determined in consultation with GIS specialist.

4. QUALIFICATIONS

The NFE should meet the minimum qualifications necessary to perform tasks described in the project work statement. 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, specifically a Scientific Collection Permit from Tennessee Wildlife Resources Agency. The NFE shall furnish all labor, materials, equipment, supplies, technical expertise, and supervision needed to perform all field efforts.

5. GOVERNMENT FURNISHED MATERIALS OR PROPERTY

- 5.1 Physical Data: Arnold AFB shall provide access to any necessary data, existing reports, recent studies, and any other information necessary to complete the objectives of this scope.
- 5.2 Equipment: Government-furnished materials or property is governed by 2 C.F.R. Part 200.312 which states that a) Title to federally-owned property remains vested in the Federal government. The non-Federal entity must submit annually an inventory listing of federally-owned property in its custody to the Federal awarding agency. Upon completion of the Federal award or when the property is no longer needed, the non-Federal entity must return the property to the Federal awarding agency for further Federal agency utilization.

6.0 BASE PERIOD and OPTIONS

Project will be 24-months and no option periods or optional tasks.

7.0 PERIOD OF PERFORMANCE

Period of Performance will begin with Notice to Proceed (NTP) and expire at 24-months of NTP.

8. COORDINATION

Kelsee Crawley
Project Manager
U.S. Army Corps of Engineers, Fort Worth District
819 Taylor St.
Fort Worth, TX 76102
Email: kelsee.f.crawley@usace.army.mil

Dr. Amy Turner
NEPA, Natural & Cultural Resources Planner, CWB®
AEDC/TSDCI
100 Kindel Drive
Arnold Air Force Base, TN 37389-2322
Office: 931-454-5466
DSN: 340-5466
Fax: 931-454-7270
E-mail: Amy.turner.5@us.af.mil

8. DELIVERABLES

Table 1. Project Schedule

The project shall be implemented according to the following schedule (assume award in June 2024).

Task	Date
Study Plan/Equipment Preparation	October – December, 2024
Field Surveys	March – July, 2026
Contaminant and organism sample processing	May 2025 – November, 2026
Report Preparation	March - December 2026
Draft Report Submittal	December 2026 (tentative)
Final Report Submittal	January 2027 (tentative)

Table 2. Deliverables Schedule

Deliverable	Schedule	Distribution
<p>Quarterly Progress Reports/Weekly Meetings: The NFE shall provide quarterly comprehensive progress reports. The NFE shall set up a monthly progress meeting/reporting with the AF PM and USACE PM to discuss progress, issues, and plans for the upcoming schedule.</p>	<p>Quarterly reports are to be delivered on the 10th day of each month via email.</p>	<p>Submission by email to Installation POC and USACE PM</p>
<p>Draft / Final Study Plan: Prepare and submit draft plan for government review and comment. Address government comments, and upon approval of comment responses, prepare and submit final report.</p>	<p>Draft Study Plan is due within 60 after award of agreement. Government shall be provided 30 days for review and comment. Comment responses and final report to be due within 21 days after government response.</p>	<p>Submit electronic copy to the Arnold AFB PM and USACE PM.</p>
<p>Draft Report: Prepare and submit draft report with all data collected. This shall include a summary and interpretation of data and spreadsheets listing all prey species detected from each bat species and the location(s) from which they were collected.</p>	<p>Draft report is due 60 days prior to the end of the period of performance.</p>	<p>Submit electronic copy to the Arnold AFB PM and USACE PM.</p>
<p>Final Report: Prepare and submit final report addressing government comments.</p>	<p>Submit draft final report for two-week inspection and feedback period by government. Final report due at 23 months after award of agreement.</p>	<p>Submit final report in electronic and hard copy to Arnold AFB and electronic copy only to USACE PM.</p>
<p>GIS Final Deliverables: Delivery of GIS data to be coordinated with the Arnold AFB GIS staff.</p>	<p>Submit with final report, or as determined through coordination with Arnold AFB.</p>	<p>Data to be submitted in SDSFIE 4.0 format (or latest version).</p>

8.1 Study Plan (Draft and Final): The draft and final study plan shall include the following sections: Introduction; Methods, including lab techniques, sample analysis protocols, and data analysis; and schedule for project implementation.

8.2 Progress Reports:

MONTHLY: The NFE shall prepare monthly progress reports to include a summary of progress and results in all phases of the project, including any anticipated schedule alterations and a summary of resources consumed in a format agreed upon with AAFB.

QUARTERLY: The NFE shall submit quarterly progress reports to incorporate the monthly reports. Invoices for partial payment shall be submitted to coincide with receipt of the quarterly progress reports. No partial payment will be approved unless the government has received all progress reports.

8.3 Draft and Final Reports: The final report shall be prepared electronically, including but not limited to the following:

- Introduction describing the basis for the project and overall study approach
- Methods section including maps and descriptions of the study areas, lab techniques, analysis protocols, and data analysis
- Results section providing details of the study including data analysis
- Discussion section interpreting the study findings
- Recommendations for Future Study section detailing potential projects

8.4 Electronic data delivered in SDSFIE 4.0 format (or latest version) coordinated early in the project with AAFB GIS staff to ensure integration into AAFB's GIS. At 21 months after Receipt of Award, submit draft final report for two-week inspection and feedback period by government. Final report due at 23 months after Receipt of Award. Duration of project is expected to be Twenty-four months.

9.0 POST AWARD REQUIREMENTS and DOCUMENTATION

9.1 Invoicing and Progress Reports - Submit Payment Request and additional required documents to: swf-cesu-invoice@usace.army.mil. Carbon Copy the assigned USACE Project Manager as well as your organization's POCs for the additional required documents as well as the delinquent accounts POC.

For successful set up of Electronic Transfer of Funds (EFT) the recipient must assure that the SF270 Recipient Organization reflects the exact name and physical address that appears in the System for Award Management (SAM) Website at www.sam.gov.

9.1.1 Frequency: Quarterly plus 30-day grace period. If the coverage dates are not quarterly or preapproved by the PM (or the first/last submittal), the payment request will be **rejected**.

Quarters	Invoice pkgs due No Later Than (NLT):
Q1: Oct-Dec	Q1: 31 Jan
Q2: Jan-Mar	Q2: 30 Apr
Q3: Apr-Jun	Q3: 30 Jul
Q4: Jul-Sep	Q4: 31 Oct

9.1.2 Payment Requests must be submitted on form SF270 with the accompanying SF-PPR progress report. SF270s will be **rejected** if the SF-PPR progress report has not been received.

Please ensure to include the following on the SF-PPR progress report:

- Separate details by CLIN
- Achievements
- Percent Completion
- Project Status
- Problems encountered and impact of activities and personnel on schedule
- Anticipated work in next reporting period

If the SF-PPR is incomplete, it will be rejected causing the SF270 to also be rejected. SF-PPR Forms with above fields may be requested at: swf-cesu-invoice@usace.army.mil

The SF270 may have multiple pages. May request Excel version @ swf-cesu-invoice@usace.army.mil **Must be submitted in PDF or it will be rejected.**

SF270 Block 11 (a), (b), (c) are for the description of funds. Preferred description is: CLIN/POP Type, POP start and end dates, amount awarded. At minimum include the CLIN.

Example:

CLIN 0001/ Base
22SEP23 – 21SEP24
\$100,000.00

Funding must be separated as specified on the Award document. For Sub-CLINs that specify “*for funding only*”, may be rolled into the primary CLIN unless otherwise instructed. All others require PM approval. If the description is missing; payment request will be **rejected**.

9.1.3 The **FINAL** invoice package must include the following documents. The entire Final invoice package is due no later than 90 days from the period of performance (POP) end date:

- Final SF270
- SF-PPR

- Final SF425
- DD882
- SF428 plus attachment B (C&S if applicable)
- SF298
- Final Report

Missing any of the above required documents, the Payment Request will be **rejected**.

Forms may be requested from the district office or found at: www.grants.gov

10. ADMINISTRATION

10.1 This cooperative agreement 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%).

10.2 Any resulting cooperative agreement will be subject to and recipient/cooperator shall comply with 2 CFR 200.313 “Equipment”, 200.314 “Supplies”, and 200.315 “Intangible Property” which includes use of research data.

10.3 “For successful set up of Electronic Transfer of Funds (EFT) the recipient must assure that the SF270 Recipient Organization your documents reflects the exact name and physical address that appears in the System for Award Management (SAM) Website at www.sam.gov.”

11. REFERENCES

Becker, D.J., M.M. Chumchal, H.G. Broders, J.M. Korstian, E.L. Clare, T.R. Rainwater, S.G. Plattm, N.B. Simmons, M.B. Fenton. 2018. Mercury bioaccumulation in bats reflects dietary connectivity to aquatic food webs. *Environmental Pollution* 233: 1076–1085.

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Feldhamer, G.A., T.C. Carter, and J.O. Whitaker Jr. 2009. Prey consumed by eight species of insectivorous bats from southern Illinois. *American Midland Naturalist* 162: 43–51.

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Kempuraj, D., S. Asadi, B. Zhang, A. Manola, J. Hogan, E. Peterson, T.C.Theoharides. 2010. Mercury induces inflammatory mediator release from human mast cells. *Journal of Neuroinflammation* 7 <https://doi.org/10.1186/1742-2094-7-20>.

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