



**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-21-2-SOI-5131**  
**Project to be initiated in 2021**

***Applicants must be a member in one of the Cooperative Ecosystem Studies Units (CESU):***  
**Colorado Plateau**  
**Rocky Mountains**

**Project Title: Natural Resources Support, Edwards Air Force Base, California.**

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 Air Force Base (EAFB) in order to facilitate successful implementation of the 16 USC 670c-1 Sikes Act. Approximately **\$851,000** is expected to be available to support this project during the **base period**. Additional funding may be available for additional tasks and/or follow on work in subsequent fiscal years to the successful Recipient/Awardee, subject to the availability of funds.

**Background:**

Edwards AFB encompasses approximately 308,180 acres in the Antelope Valley in southern California. The installation lies in the western Mojave Desert in portions of Kern, Los Angeles, and San Bernardino counties. The base is approximately 100 miles northeast of Los Angeles, about 90 miles northwest of San Bernardino, and about 80 miles southeast of Bakersfield. Approximately 13,400 military and civilian personnel work on Edwards AFB, many of whom live either on the base or in nearby communities, such as California City, Lancaster, Palmdale, and Rosamond.

The objectives of the work to be performed under this task order are to conduct natural resource tasks on the federal lands belonging to Edwards Air Force Base (AFB), and to prepare reports detailing the results of this work for submission to the USACE Omaha Project Manager (PM), AFCEC Edwards Installation Support Section (ISS) POC, and Edwards Natural Resource POC.

The EAFB environmental programs ensures military mission activities are conducted in compliance with all applicable environmental laws, regulations and policies with cooperation and assistance from the Air Force Civil Engineer Center's (AFCEC) Installation Support Section (ISS). 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:**

The NFE shall establish procedures and provide services and equipment to implement the following:

**Task 1:** Collect and monitor the western pond turtle (*Actinemys marmorata*) in potential habitat within Edwards AFB. This project builds on previous western pond turtle research at Edwards AFB and helps to fulfill a known data gap in the Edwards AFB INRMP.

The NFE shall establish procedures, and provide services, and equipment to implement the following on Edwards AFB at the Piute Ponds Complex: 1) Conduct a minimum of two 10 day live trapping sessions in May and again in June of 2022 to collect western pond turtles in and adjacent to Shuttle Pond. 2) Install monitoring devices on each collected western pond turtle. 3) Conduct continuous data collection of western pond turtle movement thru end of base period PoP and then thru May 2024 in the Option Period, to achieve 24 months of monitoring. 4) Remove monitoring devices from western pond turtles at conclusion of monitoring. Note: Monitoring devices must be able to transmit location data continuously throughout the Base Period and Option Period until removal at conclusion of monitoring.

(One potential option period)

**Task 2:** Continue recurring routine maintenance activities at the Piute Ponds Complex and Branch Memorial Park Pond. This project is identified in the Edwards AFB Integrated Natural Resources Management Plan (INRMP).

The NFE shall establish procedures and provide services and equipment to implement the following at the Piute Ponds Complex: 1) Perform up to 10 cultural resource site evaluations. 2) Construct Piute Ponds –Little Piute Ponds South Water Delivery System per US-CA-623-1 Construction Set and Technical Specifications dated 3/23/2021. 3) Purchase up to four track out grates same as existing track out grates. 4) Install up to four track out grates at one location. 5) Repair up to 1.5 miles of 20-foot wide levee road surface subject to water saturation/breach using compacted rock/fill and geotextile fabric. 6) Perform maintenance by dredging up to 500 linear feet of existing water channels. Dredged vegetation will be disposed of in the spoils area. Dredged mud will be disposed of in the spoils area or other nearby location as determined by NRM.

The NFE shall establish procedures and provide services and equipment to implement the following at the Branch Memorial Park Pond: 1) Remove tules/cattails at 12-foot radius and six feet below water surface at eight to 10 locations around pond perimeter. Dredged vegetation and mud will be disposed of on site as determined by NRM.

(No option periods identified)

**Task 3:** Inventory, survey, monitor, or otherwise manage habitats that support endangered, threatened, rare, sensitive, or keystone flora or fauna species. This project builds on previous research at Edwards AFB and helps to fulfill a known data gap in the Edwards AFB INRMP.

The NFE shall establish procedures and provide services and equipment to implement the following: 1) Perform a monitoring survey at approximately 40 relevés to assess the health and integrity of the mesquite bosque woodland habitat. 2) Analyze natural drainage systems providing water to the mesquite bosque habitat to determine specific impediments to historic water flow to and through the mesquite bosque habitat. Provide specific cost-effective recommendations and design drawings on where and how to restore natural water flow. 3) Develop a Branch Memorial Park Management Plan to serve as a framework to guide the management, protection, and restoration of natural habitat and the pond while integrating and supporting recreation.

(No option periods identified)

**Optional Task 4:** Control nuisance animals on Edwards AFB by reducing food/cover subsidies, identifying and removing trash from illegal dumpsites, and removing nuisance animals. This project is identified in the Edwards AFB INRMP.

The NFE in accordance with applicable state and federal laws shall establish procedures, and solicit services and equipment to implement the following: 1) Identify illegal trash dumps on Edwards AFB and establish a protocol for documenting and initiating illegal trash dump clean-up and initiating a trash removal work order. 2) Clean-up and remove from Edwards AFB debris from illegal trash dumps on base that attract nuisance wildlife. 3) Remove from Edwards

AFB existing and ongoing stray animals including but not limited to dogs, cats, goats, cattle, horses, snakes, and exotic birds. 4) Remove from or relocate on Edwards AFB nuisance wildlife including but not limited to coyotes, bobcats, bears, mountain lions, raccoons, and snakes. 5) Provide veterinary services to treat and/or euthanize injured nuisance animals and wildlife including but not limited to coyotes, bobcats, desert tortoises, owls, and raptors.

(Four potential optional periods)

**Optional Task 5:** Utilize existing Edwards AFB hyperspectral imagery and LIDAR data from 2009 and 2015 as well as results from FY18 hyperspectral imagery analysis project to conduct additional GIS-based analyses. Analyses include (1) prepare a single vegetation map of the Piute Ponds management area, delineating the spatial extent of major plant species, including invasive species; (2) prepare a single map of major habitat types for all of Edwards AFB; (3) Prepare predictive maps of potential habitat for T&E, candidate, and sensitive species, including species such as desert tortoise, Mohave ground squirrel, burrowing owl, desert cymopterus, alkali Mariposa lily, Lancaster milkvetch, sagebrush loeflingia, Mojave spineflower, Barstow woolly sunflower, Rosamond eriastrum, spreading pygmyleaf, and yellow spinescape. Conduct ground-truthing of analyses/prepared maps to determine accuracy.

Personnel qualifications include demonstrated expertise in GIS, remote sensing, LIDAR, and hyperspectral imagery. Personnel must be capable of utilizing combined LIDAR-derived data and hyperspectral imagery to conduct analyses required to delineate habitat types and plant species. Personnel must be capable of performing ground-truthing and analyzing the results.

(No optional periods identified)

**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.

**Period of Performance:** The base period of performance is anticipated to be 18 months from date of award.

- Task 1 has one 18-month option period.
- Task 2 has no option periods identified.
- Task 3 has no option periods identified.
- Option Task 4 has four potential 18-month option periods.
- Option Task 5 has no option periods identified.

**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:**

Sandra Justman  
Grants Specialist  
USACE Ft. Worth District  
**Sandra.Justman@usace.army.mil**  
Office: (817) 886-1073

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 **27 AUGUST 2021**.

[End of RSOI]  
[See SOO below]

**STATEMENT OF OBJECTIVES  
for  
NATURAL RESOURCES SUPPORT ACTIVITIES  
at  
EDWARDS AIR FORCE BASE, CALIFORNIA**

Cooperative Ecosystems Studies Unit (CESU) Cooperative Agreement

**1. PURPOSE**

The Edwards AFB (EAFB) environmental program ensures military mission activities are conducted in compliance with all applicable environmental laws, regulations and policies with cooperation and assistance from the Air Force Civil Engineer Center's (AFCEC) Installation Support Section (ISS). 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.

The objectives of the work to be performed under this agreement are to conduct natural resource tasks on the federal lands belonging to Edwards Air Force Base (AFB), and to prepare reports detailing the results of this work for submission to the USACE Omaha Project Manager (PM), AFCEC Edwards Installation Support Section (ISS) POC, and Edwards Natural Resource POC.

**Background**

Edwards AFB encompasses approximately 308,180 acres in the Antelope Valley in southern California. The installation lies in the western Mojave Desert in portions of Kern, Los Angeles, and San Bernardino counties. The base is approximately 100 miles northeast of Los Angeles, about 90 miles northwest of San Bernardino, and about 80 miles southeast of Bakersfield. Approximately 13,400 military and civilian personnel work on Edwards AFB, many of whom live either on the base or in nearby communities, such as California City, Lancaster, Palmdale, and Rosamond.

**2. AUTHORITY**

**Authority to enter into a Cooperative Agreements for the work: Section 670c-1, Title 16 United States Code, Sikes Act.**

- 2.1.** In agreement with the above stated objectives, 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*.

2.2. 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.), all CESU projects must carry out a public purpose of support or stimulation, instead of acquiring goods or services for the exclusive direct benefit 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

2.3. 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 Agreements as accepted in the Master MOU for the establishment and continuation of the CESU program Agreements Article II 1-4 and Article VI 1-7.

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

- EAFB and AFCEC Edwards ISS are involved in development of study methodology, data gathering, analysis, and/or report writing
- EAFB and AFCEC Edwards ISS are active participates and collaborates in carrying out the project plan of work, reviews and approves activities, helps train or select project staff or trainees
- EAFB and AFCEC Edwards ISS incurs in-kind or direct expenditures in carrying out the activities specified in the project agreement. One example includes, but is not limited to, providing staff time to work on the project.

### 3. DESCRIPTION OF OBJECTIVES

Conduct tasks in accordance with this Description of Objectives, as prioritized by AFCEC Edwards ISS and the respective base Natural Resources Manager (NRM). Only work aligned with the original AF ACES programming and approved by the USACE Grants Officer Technical Representative (GOTR) should be completed as part of this agreement. This Cooperative Agreement supports the efforts as described in Subtasks 3.1 through 3.5 below.

Travel, Coordination, and Project Management for all tasks is as follows:

**Travel:** Provide transportation and fuel for all Non-Federal Entity (NFE) staff to get to and from all field sites. Retain current proof of insurance and current registration for all modes of transportation.

**Coordination:** Coordinate concurrently with the Base NRM, AFCEC Edwards ISS, and USACE PM. All work schedules shall be approved by the AFCEC and be consistent with the Project Schedule & Work Plan approved by the Base NRM. Schedule changes will be jointly made by the USACE PM, Base NRM and AFCEC Edwards ISS and align with the Sikes Act-compliant Integrated Natural Resources Management Plan (INRMP) and original ACES programming. Any changes in scope or cost must be approved by the USACE Grants Officer. All coordination with state and federal regulators will be by the Base NRM or AFCEC Edwards ISS only.

**Project Management:** Within 30 days of award of agreement, the NFE will schedule an initial project kick off meeting with all parties involved (Edwards AFB, AFCEC/Edwards ISS, USACE, etc.) to develop a project work schedule to implement the SOO. All deliverables/tasks will be submitted within the required timeframes as identified.

Tasks included within this SOO are identified in Table 1 below and further described in the following sections.

**Table 1:**

<b>Project</b>	<b>Title</b>	<b>Section</b>	<b>Options</b>
FSPMA53217119	Mgt Species T&E	3.1	One option year in FY2022
FSPMA5321915	Mgt, Wetlands / FloodPlains	3.2	One option year in FY2022
FSPMA53216119	Mgt, Habitat	3.3	None
FSPMA53216122	Mgt, Nuisance Wildlife	3.4	Unfunded option in FY21; four option years
FSPMA53216119	Mgt, Habitat (Hyperspectral Imagery Analysis)	3.5	Unfunded option in FY21; one option year



### **3.1. Task 1: FSPMA53217119 B Mgt Species T&E (Western Pond Turtle)**

The primary objective of this project is to collect and monitor the western pond turtle (*Actinemys marmorata*) in potential habitat within Edwards AFB, California. This project builds on previous western pond turtle (WPT) research at Edwards AFB and helps to fulfill a known data gap in the Edwards AFB INRMP. This project is identified in the Edwards AFB INRMP. It helps accomplish Project 10.1.5 Conduct surveys for Species of Interest receiving increased regulatory attention or for which little is known about on-base.

#### **BACKGROUND**

The U.S Fish and Wildlife Service (USFWS) was petitioned on July 11, 2012 to list the western pond turtle; and on April 10, 2015, the USFWS found that an action may be warranted (80 FR 19259, 2015) resulting in a Species Status Assessment.

The western pond turtle historically ranged from the vicinity of Puget Sound in the state of Washington to the Sierra San Pedro Martir in Baja California Norte, chiefly west of the Sierra-Cascade crest. Isolated, extant populations are found in the interior draining Mojave River of California at least as far into the Mojave Desert as Afton Canyon and in the Amargosa River in the vicinity of Lake Elizabeth in northern Los Angeles County. Amargosa Creek historically flowed to the Piute Ponds area prior to the diversion of Amargosa Creek waters and containment of its floodwater.

The Piute Ponds Complex provides suitable habitat to support a western pond turtle population. Surveys for western pond turtles at the Piute Ponds Complex collected 11 individuals in May/June of 2019, collected 1 individual in July of 2020, and observed 2 individuals basking on vegetation in July of 2020. July trapping was outside the recommended trapping timeframe due to COVID access restrictions. All western pond turtles were collected or observed in Shuttle Pond.

Little is known about western pond turtle movement within Shuttle Pond and use of the surrounding desert upland area. This new trapping and monitoring effort will inform that lack of movement knowledge in and adjacent to Shuttle Pond and potentially elsewhere within the Piute Ponds Complex.

#### **OBJECTIVES**

##### **Base Period:**

The NFE shall establish procedures, and provide services, and equipment to implement the following on Edwards AFB at the Piute Ponds Complex: 1) Conduct a minimum of two 10 day live trapping sessions in May and again in June of 2022 to collect western pond turtles in and adjacent to Shuttle Pond. 2) Install monitoring devices on each collected western pond turtle. 3) Conduct continuous data collection of western pond turtle movement thru end of base period PoP and then thru May 2024 in the Option Period, to achieve 24 months of monitoring. 4) Remove monitoring devices from western pond turtles at conclusion of monitoring. Note: Monitoring devices must be able to transmit location data continuously throughout the Base Period and Option Period until removal at conclusion of monitoring.

The NFE shall determine the type of monitoring devices that are appropriate to achieve the objectives of this project and shall obtain all necessary state and federal permits required for trapping and tracking any surveyed animals.

All species of turtles collected or seen during the exercise of this project will be documented in the final technical report and recorded per requirements in the most recent version of the *Edwards Air Force Base Standards for Geographic Information System Deliveries* document available from 412 CEG/CEVA.

### **Option Period:**

Provide a cost proposal to follow the work plan methodology to:

1. Resume continuous data collection of previously tagged western pond turtles from the end of the Base Year PoP thru April of 2023.
2. Conduct a minimum of two 10-day live trapping sessions in May and again in June of 2023 to collect western pond turtles in and adjacent to Shuttle Pond to increase population count of monitored tortoises.
3. Install monitoring devices on each collected western pond turtle.
4. Conduct continuous data collection of western pond turtle movement thru April of 2023.
5. Remove monitoring devices from western pond turtles at conclusion of monitoring.
6. Conduct data analysis and prepare a technical report that describes the work performed, conclusions, and management recommendations.

### **TASK 1-SPECIFIC DELIVERABLES**

Required deliverables include:

- Work Plan, to include trapping and monitoring protocols
- Technical Report
- GIS Data
- Weekly Status Report
- Monthly Status Report
- Brochure
- Poster
- Video Script
- Press Releases

Progress Reports - One typed letter report describing progress on the project. The report shall be due as of the last day of the third month (quarterly) and shall be transmitted via electronic mail, facsimile, or regular mail no later than the 10th calendar day following the end of the reporting period. 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 which are due.

Weekly Status Report – The NFE shall provide to the Edwards AFB NRM weekly status reports via email when performing on-base project activities. The reports shall include activities accomplished, activities planned for the upcoming week, issues, and updated timelines for completion of work.

Monthly Status Report – The NFE shall provide a brief monthly project status report to the Edwards AFB NRM that describes the amount of work completed to date, work completed in the past month, upcoming work schedules, potential problems, and unresolved issues.

Work Plan – The NFE shall submit a separate draft and final work plan describing in narrative format the plan of action for the accomplishment of the project tasks. The plan shall follow the Edwards AFB Work Plan Template. The NFE shall provide a proposed comprehensive timeline for completion of the required work element activities and submittals. Updated project schedules will be provided by the NFE when the schedule changes, regardless of whom is responsible for causing the change in schedule. Updated schedules shall be submitted within seven calendar days of any documented change in project schedule.

Technical Report – The NFE shall submit a separate draft and final technical report describing in narrative format the accomplishments of the project tasks, including pertinent maps, figures, tables, and photographs. The report format shall follow that of a scientific publication and include the following section heading: Introduction, Methods, Results, Discussion and Literature Cited, as well as original data sheets and/or copies thereof, laboratory reports, and other appendices, as appropriate.

GIS Data – The NFE shall comply with all requirements in the most recent version of the *Edwards Air Force Base Standards for Geographic Environmental Support Section 412 CEG/CEVA*. This document provides all details required for a successful GIS delivery. A preliminary technical consultation with 412 CEG/CEVA GIS staff shall be accomplished after the Post Award Kick-Off Meeting and prior to the start of all data collection for this project.

Brochure – The NFE shall prepare an interpretive tri-fold brochure (8.5” x 11”) that can be used to inform the general public about the findings of this project and the importance of the Western Pond Turtle Monitoring effort. Write narrative to the 9<sup>th</sup> grade level, using captioned photographs, maps, and some text boxes to convey the key messages. Provide an editable electronic copy. Brochure shall be formatted for reproduction by the 412 TW/PA.

Poster – The NFE shall prepare an interpretive poster that can be used to inform the general public about the findings of this project and the importance of Western Pond Turtle Monitoring. Write narrative to the 9<sup>th</sup> grade level, using captioned photographs, maps, and some text boxes to convey the key messages. Provide an editable electronic copy, formatted for reproduction by the 412 TW/PA, and two flexible matte laminated posters (Large Poster 24”h x 36”w).

Video Script – The NFE shall prepare an editable video script five to 10 minutes in length that can be used to inform the general public about the findings and importance of this project and the importance of Western Pond Turtle Monitoring. Write narrative to the 9<sup>th</sup> grade level and provide photo suggestions for script narrative. Provide an editable electronic copy.

Press Release – The NFE shall prepare an editable press release for the general public. The

press release shall identify the project as a 412 CEG/CEVA Natural Resource project, what the project's objective is, where the project is located on base, when the project will be implemented, and how it will be implemented. The press release shall be no longer than approximately 200 words. Write the narrative to the 9<sup>th</sup> grade level. Provide an editable electronic copy of: 1) Beginning of project press release. 2) End of project results press release.

**Deliverables Schedule:** Submit deliverables as listed below, or as otherwise specified in the NFE's proposal. Deliverable schedule must be within the PoP of the agreement. The NFE may propose an alternate schedule but should not reduce the opportunities for and duration of Government review periods.

<b>Description</b>	<b>When Due</b>	<b>Format</b>
Work Plan Draft to include survey protocols	Notice to Proceed (NTP)+ 60 days	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Work Plan Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and work plan revision with track changes (e-mail attachment, or file transfer)
Work Plan Final to include survey protocols	21 days after Government approval of NFE's response to all Government comments	PDF: Electronic only (e-mail attachment or file transfer)
Weekly Status Report	Friday prior to upcoming field work week	Email
Monthly Status Reports	Within 14 days after end of each month	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Draft Technical Report	To be determined by NFE	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
GIS Draft Technical Report Deliverables	Submit with Draft Technical Report	Per EAFB GIS Standards: Electronic (e-mail attachment, or file transfer)
Technical Report Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and technical report revision with track changes (e-mail attachment, or file transfer)
Final Technical Report	21 days after Government approval of NFE's response to all Government	PDF: Electronic (e-mail attachment or file transfer); 2 hard copies spiral or comb-bound, each with a CD containing the full document and all references.

Description	When Due	Format
	comments	
GIS Final Technical Report Deliverables	Submit with Final Technical Report	Per EAFB GIS Standards Electronic (e-mail attachment, or file transfer) and CD
Specimen mounts	Submit with Final Technical Report	Specimen cases with catalog that cross-references with the Technical Report and GIS deliverables
Brochure Draft	Submit with Draft Technical Report	Microsoft Word editable: (e-mail, compact disk, or file transfer)
Brochure Final	Submit with Final Technical Report	Microsoft Word editable and PDF file: (e-mail, compact disk, or file transfer)
Poster Draft	Submit with Draft Technical Report	Microsoft Word editable: (e-mail, compact disk, or file transfer)
Poster Final	Submit with Final Technical Report	Microsoft Word editable and PDF file: (e-mail, compact disk, or file transfer) and two flexible printed posters
Video Script Draft	Submit with Draft Technical Report	Microsoft Word editable: (e-mail, compact disk, or file transfer)
Video Script Final	Submit with Final Technical Report	Microsoft Word editable and PDF file: (e-mail, compact disk, or file transfer)
Press Release Initial	Submit with Work Plan Draft	Microsoft Word editable: Electronic only (e-mail attachment)
Press Release Results	Submit with Final Technical Report	Microsoft Word editable: Electronic only (e-mail attachment)

## PERIOD OF PERFORMANCE FOR TASK 1

**Base Period:** 18 months from the notice to proceed

**Option Period:** The option would be exercised during FY22 at the Government's discretion based on the availability of funds and would extend the Base Period PoP by 18 months.

## QUALIFICATIONS

The NFE shall meet the minimum qualifications necessary to perform tasks described in the project work statement. The principal investigator shall 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.

## QUALITY ASSURANCE

The NFE shall ensure that project activities, project reports, and project data are professionally executed with minimal errors.

### 3.2. Task 2: FSPMA5321915 Mgt, Wetlands Floodplains, Recurring Routine

## **Maintenance, Piute Ponds Complex and Branch Memorial Park Pond**

The primary objective of this project is to continue recurring routine maintenance activities at the Piute Ponds Complex and Branch Memorial Park Pond. This project is identified in the Edwards AFB INRMP. It helps accomplish Project 7.4.1 Maintain Waterfowl Hunting opportunities at Piute Ponds Complex; Project 13.2. Implement management activities described in the Piute Ponds Complex Management Plan; Project 14.2.1 Perform yearly routine vegetation management to Branch pond area; and Project 23.1. Conduct field cultural site evaluations at the Piute Ponds Complex.

### **BACKGROUND**

The upland and wetland area (excluding Rosamond Dry Lake) of the Piute Ponds Complex encompasses approximately 7,840 acres. Of the 7,840 acres, approximately 1,365 acres of ponds, wetlands, wet meadows, and clay pans are in an area where the water flow/levels can be managed to some degree (See Figure: Recurring Routine Maintenance – Piute Ponds Complex in the attached document). The primary source of water is effluent from the Los Angeles County District 14 Wastewater Treatment Plant (D14). Other seasonally flooded wetlands exist outside of this Water Management Area fed exclusively from natural surface water as it flows to the lakebed.

Management actions such as vegetation control, dredging, maintenance and repair of water control structures, maintenance and repair of roads/dikes, and other activities constitute undertakings with potential to affect cultural resources. The Piute Ponds Complex has been surveyed for cultural resources, with many sites, features, and isolated artifacts being recorded but with incomplete eligibility recommendations. This project will build on previous work, visiting previously-recorded locations to perform condition assessments and elucidate further information as necessary to enable making recommendations of eligibility (individually or as part of a district) and assessment of adverse effects from the proposed undertakings.

Each site or district evaluation should include site records searches and archival research, creation of an appropriate research design, a minimum number of test excavations to determine subsurface site characteristics and to retrieve artifacts and sample materials, site mapping and photography, collection of appropriate GIS data, and updated site record forms. Artifact collection is not anticipated, except for highly unusual, rare, or important diagnostic artifacts. Any collected items would be prepared for long-term curation at the Edwards AFB repository.

Branch Memorial Park Pond encompasses approximately 6 acres and is located along Lancaster Boulevard just north of South Gate. Branch Pond is the only fishing pond on Edwards AFB. It is stocked for fishing. Over 50 bird species have been documented. Tri-colored blackbirds nest in the pond's vegetation. Mesquite bosques are located adjacent to Branch Memorial Park.

Both the Piute Ponds Complex and Branch Memorial Park are used by a variety of recreationists including hunters, fisherman, and birders. School groups and researchers also visit the areas. Existing interpretive and guidance signage needs to be replaced. A cohesive signage plan does not exist.

## **OBJECTIVES**

The NFE shall establish procedures and provide services and equipment to implement the following at the Piute Ponds Complex: 1) Perform up to 10 cultural resource site evaluations. 2) Construct Piute Ponds –Little Piute Ponds South Water Delivery System per US-CA-623-1 Construction Set and Technical Specifications dated 3/23/2021. 3) Purchase up to four track out grates same as existing track out grates. 4) Install up to four track out grates at one location. 5) Repair up to 1.5 miles of 20-foot wide levee road surface subject to water saturation/breach using compacted rock/fill and geotextile fabric. 6) Perform maintenance by dredging up to 500 linear feet of existing water channels. Dredged vegetation will be disposed of in the spoils area. Dredged mud will be disposed of in the spoils area or other nearby location as determined by NRM.

The NFE shall establish procedures and provide services and equipment to implement the following at the Branch Memorial Park Pond: 1) Remove tules/cattails at 12-foot radius and six feet below water surface at eight to 10 locations around pond perimeter. Dredged vegetation and mud will be disposed of on site as determined by NRM.

## **TASK 2-SPECIFIC DELIVERABLES**

Required deliverables include:

- Work Plan: Draft and Final
- Technical Report: Draft and Final
- GIS Data: Draft and Final
- Weekly Status Reports
- Monthly Status Reports
- Press Releases: Initial and Results

Progress Reports - One typed letter report describing progress on the project. The report shall be due as of the last day of the third month (quarterly) and shall be transmitted via electronic mail, facsimile, or regular mail no later than the 10th calendar day following the end of the reporting period. 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 which are due.

Weekly Status Report – The NFE shall provide to the Edwards AFB NRM weekly status reports via email when performing on-base project activities. The reports shall include activities accomplished, activities planned for the upcoming week, issues, and updated timelines for completion of work.

Monthly Status Report – The NFE shall provide a brief monthly project status report to the Edwards AFB NRM that describes the amount of work completed to date, work completed in the past month, upcoming work schedules, potential problems, and unresolved issues.

Work Plan – The NFE shall submit a separate draft and final work plan describing in narrative format the plan of action for the accomplishment of the project tasks. The plan shall follow the Edwards AFB Work Plan Template. The NFE shall provide a proposed comprehensive timeline for completion of the required work element activities and

submittals. Updated project schedules will be provided by the NFE when the schedule changes, regardless of whom is responsible for causing the change in schedule. Updated schedules shall be submitted within seven calendar days of any documented change in project schedule.

**Technical Report** – The NFE shall submit a separate draft and final technical report describing in narrative format the accomplishments of the project tasks, including pertinent maps, figures, tables, and photographs. The report format shall follow that of a scientific publication and include the following section heading: Introduction, Methods, Results, Discussion and Literature Cited, as well as original data sheets and/or copies thereof, laboratory reports, and other appendices, as appropriate.

**GIS Data** – The NFE shall comply with all requirements in the most recent version of the *Edwards Air Force Base Standards for Geographic Environmental Support Section 412 CEG/CEVA*. This document provides all details required for a successful GIS delivery. A preliminary technical consultation with 412 CEG/CEVA GIS staff shall be accomplished after the Post Award Kick-Off Meeting and prior to the start of all data collection for this project.

**Press Release** – The NFE shall prepare an editable press release for the general public. The press release shall identify the project as a 412 CEG/CEVA Natural Resource project, what the project’s objective is, where the project is located on base, when the project will be implemented, and how it will be implemented. The press release shall be no longer than approximately 200 words. Write the narrative to the 9<sup>th</sup> grade level. Provide an editable electronic copy of: 1) Beginning of project press release. 2) End of project results press release.

#### **Deliverables Schedule:**

Submit deliverables as listed below, or as otherwise specified in the NFE’s proposal. Deliverable schedule must be within the period of performance of the agreement. The NFE may propose an alternate schedule but should not reduce the opportunities for and duration of Government review periods.

<b>Description</b>	<b>When Due</b>	<b>Format</b>
Work Plan Draft	Notice to Proceed (NTP)+ 60 days	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Work Plan Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and work plan revision with track changes (e-mail attachment, or file transfer)
Work Plan Final	21 days after Government approval of NFE’s response to all Government comments	PDF: Electronic only (e-mail attachment or file transfer)
Weekly Status	Friday prior to	Email



<b>Description</b>	<b>When Due</b>	<b>Format</b>
Report	upcoming field work week	
Monthly Status Report	Within 14 days after end of each month	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Draft Technical Report	To be determined by NFE	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
GIS Draft Technical Report Deliverables	Submit with Draft Technical Report	Per EAFB GIS Standards: Electronic (e-mail attachment, or file transfer)
Technical Report Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and technical report revision with track changes (e-mail attachment, or file transfer)
Final Technical Report	21 days after Government approval of NFE's response to all Government comments	PDF: Electronic (e-mail attachment or file transfer); 2 hard copies spiral or comb-bound, each with a CD containing the full document and all references.
GIS Final Technical Report Deliverables	Submit with Final Technical Report	Per EAFB GIS Standards Electronic (e-mail attachment, or file transfer) and CD
Press Release Initial	Submit with Work Plan Draft	Microsoft Word editable: Electronic only (e-mail attachment)
Press Release Results	Submit with Final Technical Report	Microsoft Word editable: Electronic only (e-mail attachment)

## **PERIOD OF PERFORMANCE FOR TASK 2**

**Base only:** 18 months from notice to proceed

**INSERT** Figure: *Recurring Routine Maintenance – Piute Ponds Complex; Construction Set - US-CA-623-1 Piute Ponds – Little Piute Pond Water Delivery, 3/23/2021; Technical Specifications - Piute Ponds US-CA-623-1, 3/23/2021*

### **3.3. Task 3: FSPMA53216119 Mgt, Habitat INRMP Mesquite Bosque Monitoring and Restoration, Branch Memorial Park Management Plan Development**

The primary objective of this project is to inventory, survey, monitor, or otherwise manage habitats that support endangered, threatened, rare, sensitive, or keystone flora or fauna species. This project builds on previous research at Edwards AFB and helps to fulfill a known data gap in the Edwards AFB Integrated Natural Resources Management Plan (INRMP). This project is identified in the Edwards AFB INRMP. It helps accomplish GOAL 15. Sustain ecological integrity of the mesquite bosque habitat; Project 15.1.3. Perform periodic surveys at some 40

relieves to assess and monitor the health and integrity of mesquite bosque woodland habitat; Project 15.2.1 Install culverts on roads bisecting mesquite bosque habitat; GOAL 14. Conserve and maintain Branch Memorial Park Pond to accommodate Edwards AFB's operational mission requirements; Project 14.1.1. Develop a comprehensive Branch Memorial Park Pond Management Plan.

## **BACKGROUND**

Edwards AFB encompasses approximately 308,180 acres in the Antelope Valley in southern California. The installation lies in the western Mojave Desert. Western honey mesquite (*Prosopis glandulosa*) bosques visually dominate some of the largest drainages along Big and Little Rock Creeks as they approach Rogers Dry Lake. This mesquite bosque habitat was initially disturbed by settlers who came to the Antelope Valley in the 1800s to establish small ranches where they could raise cattle and sheep and grow crops for their livelihoods and later by military infrastructure development. This activity combined with reductions in natural water runoff due to water diversion projects upstream has impacted the mesquite bosque habitat. Ephemeral washes in a mesquite bosque are normally dry but may become inundated after adequate rainfall.

Results of the most recent mesquite monitoring project undertaken in the spring of 2017 are reported in a final report by ManTech SRS (Howe and LaBonte 2018). A combination of relevé plots and point-centered quarters were used to evaluate habitat characteristics and mesquite tree demography. Metrics evaluated included cover of native and exotic plants; cover of shrubs, grasses, and forbs; and height, width, and density of mesquite trees. All metrics varied considerably across plots, but later helicopter overflights revealed a pattern of low mesquite vigor associated with hydrologic impediments such as the rocket racetrack and several roads. Approved monitoring protocols are described in the Evaluation of Mesquite Habitat-Survey Methods by ManTech SRS (ManTech 2017).

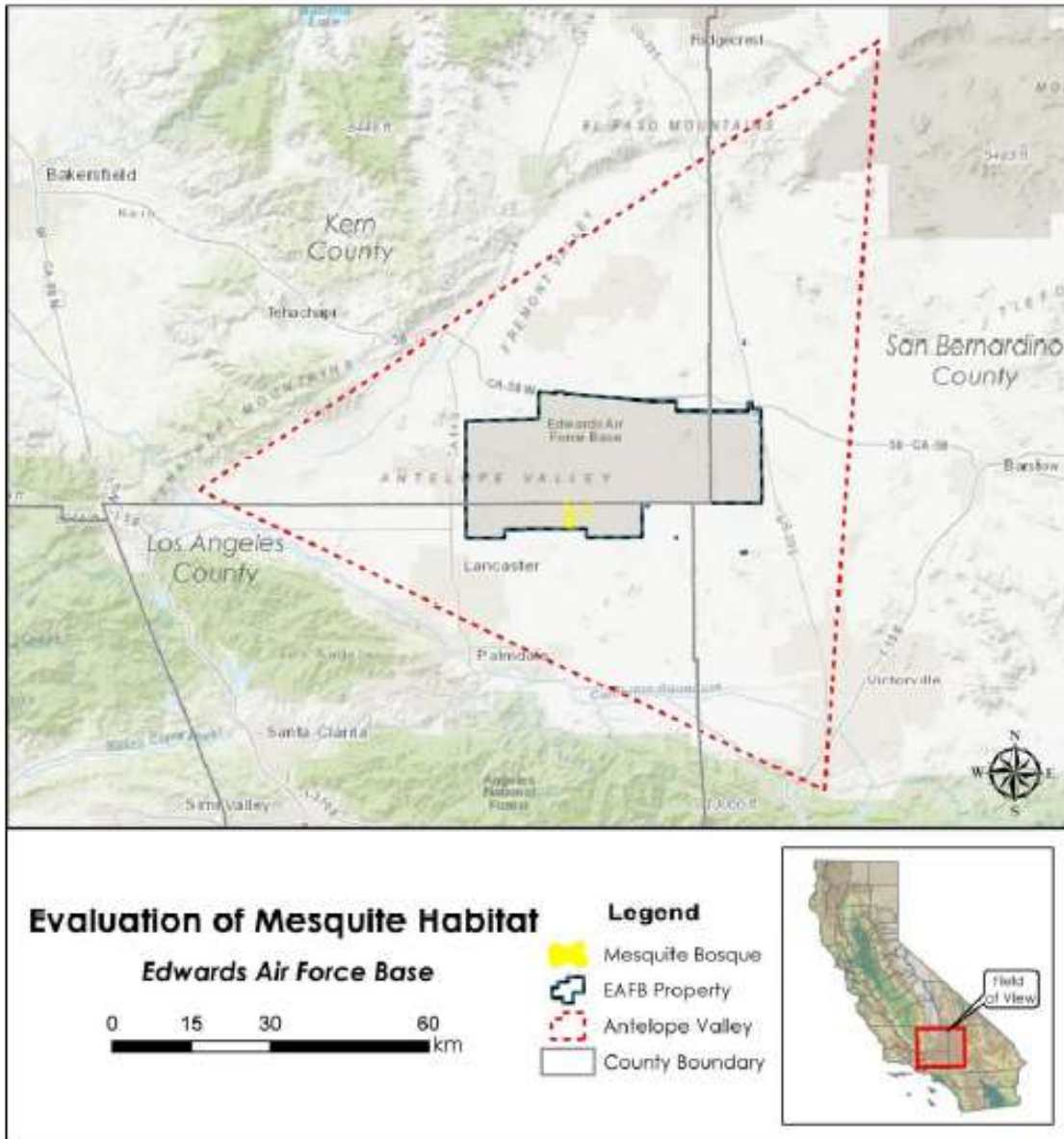
A recent floodplain/surface flow study is complete that shows/discusses the water flow to and through the honey mesquite bosques on Edwards AFB (CEMML 2021). Installation of low water crossings are likely more cost-effective than culverts which require constant maintenance due to the minimal relief in the mesquite bosque area.

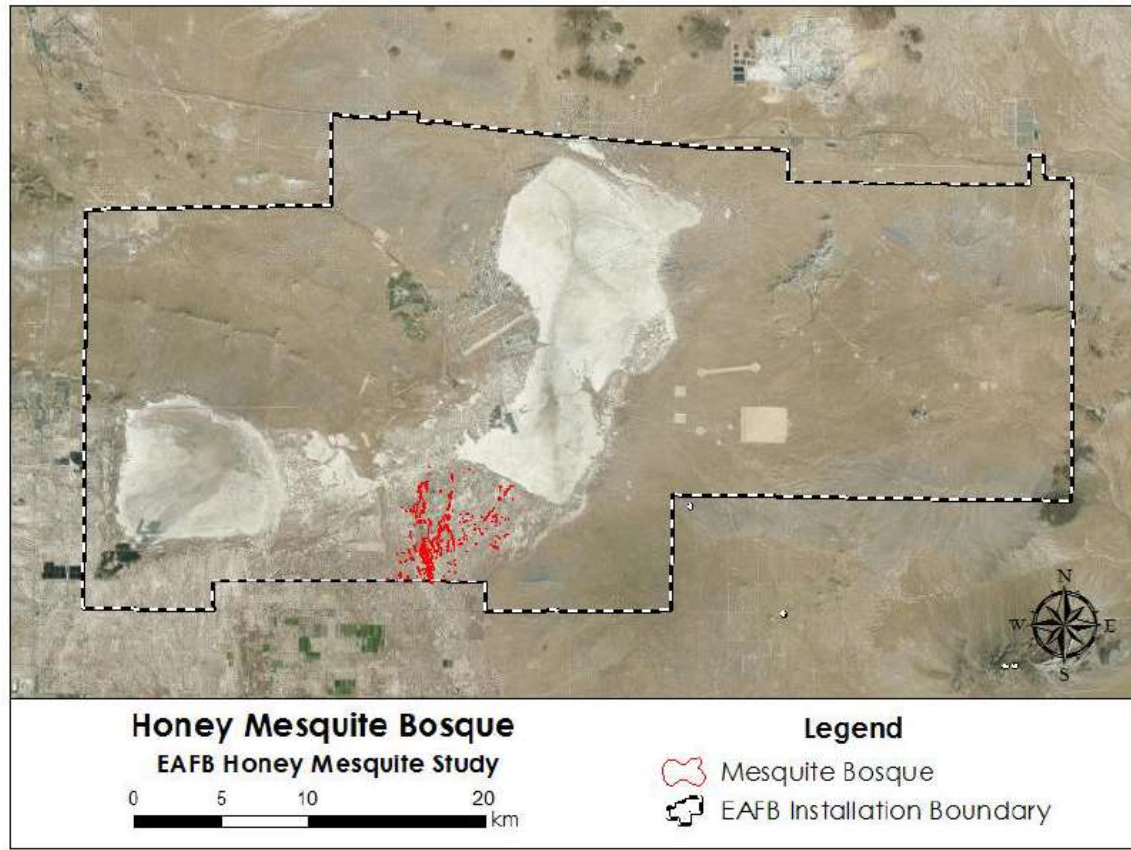
Branch Memorial Park was established in 1961 to honor Major General Irving Branch after his untimely death in a fighter plane crash while Commander of Edwards AFB. The purpose of the park is to provide a major quality of life aspect for base residents and personnel. The primary feature of the park is a manmade six-acre pond. Restrooms, picnic tables, and pavilions are located next to the pond. An interpretive trail runs through the native vegetation and past some nearby cultural resources.

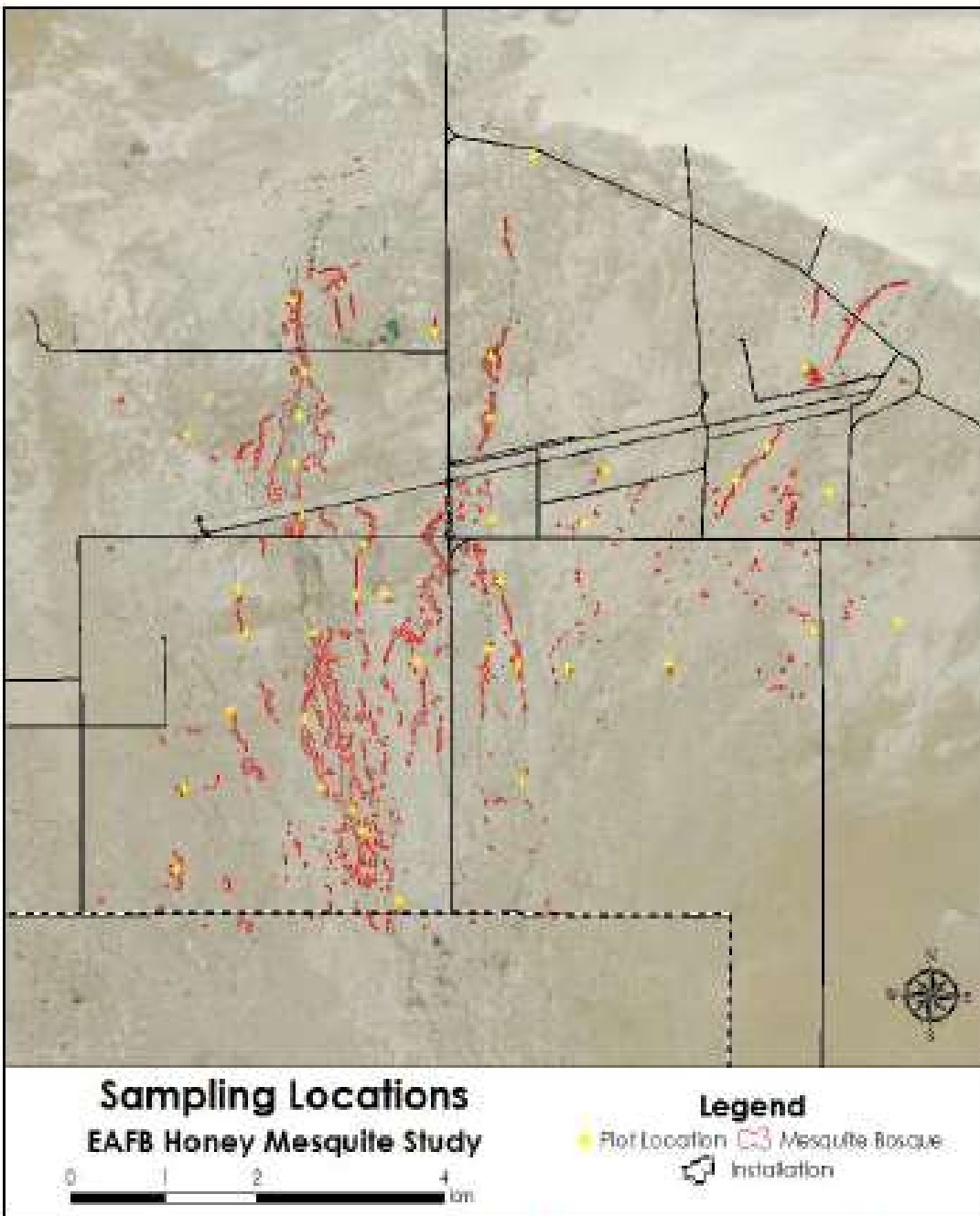
The pond embankment consists of open space, trees (Fremont cottonwood, mesquite, sandbar willow, mule-fat), and native shrubs (saltbush). Emergent vegetation in the pond is primarily cattail with some common tule. Resident, migratory, and breeding wildlife species use the vegetation in and around the pond for foraging, roosting, nesting, and cover. The pond is used for fishing and supports populations of stocked fish, including largemouth bass, channel catfish, and bluegill. Trout may be stocked in the pond during colder winter months. Tricolored blackbirds

nest in the pond vegetation and feed in the nearby honey mesquite bosques and at off-base alfalfa farms. Northern harriers also have been observed nesting at the pond, and more than 50 other bird species have been observed using the pond. Well C-1 provides water for the pond, which is maintained year-round at water levels that vary from 2 to 12 feet.

Branch Memorial Park does not have a habitat management plan. Current natural resource activities are focused only on the pond. Evaluation of what the appropriate management area boundaries should be needs to be determined based on the recreational activities and affected natural habitat, nearby playas, ephemeral washes, mesquite bosques, and native/planted trees. Management recommendations for the pond should include water testing recommendations and schedules; water delivery requirements and schedules; fish stocking species recommendations and stocking schedules; spawning bed designs; vegetation management recommendations and maintenance schedules for recreational fishing access, boat access, and tricolored blackbird nesting habitat maintenance and sustainment; and disposal of dredged biomass and soil. The plan should include regulatory and interpretive signage recommendations.







## OBJECTIVE

The NFE shall establish procedures and provide services and equipment to implement the following: 1) Perform a monitoring survey at approximately 40 releves to assess the health and integrity of the mesquite bosque woodland habitat. 2) Analyze natural drainage systems providing water to the mesquite bosque habitat to determine specific impediments to historic water flow to and through the mesquite bosque habit. Provide specific cost-effective recommendations and design drawings on where and how to restore natural water flow. 3) Develop a Branch Memorial Park Management Plan to serve as a framework to guide the

management, protection, and restoration of natural habitat and the pond while integrating and supporting recreation.

### **TASK 3-SPECIFIC DELIVERABLES**

Required deliverables include:

- Work Plan, to include survey protocols: Draft and Final
- Technical Report: Draft and Final
- GIS Data: Draft and Final
- Weekly Status Reports
- Monthly Status Reports
- Brochure
- Poster
- Video Script
- Press Releases: Initial and Results

Progress Reports - One typed letter report describing progress on the project. The report shall be due as of the last day of the third month (quarterly) and shall be transmitted via electronic mail, facsimile, or regular mail no later than the 10th calendar day following the end of the reporting period. 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 which are due.

Weekly Status Report – The NFE shall provide to the Edwards AFB NRM weekly status reports via email when performing on-base project activities. The reports shall include activities accomplished, activities planned for the upcoming week, issues, and updated timelines for completion of work.

Monthly Status Report – The NFE shall provide a brief monthly project status report to the Edwards AFB NRM that describes the amount of work completed to date, work completed in the past month, upcoming work schedules, potential problems, and unresolved issues.

Work Plan – The NFE shall submit a separate draft and final work plan describing in narrative format the plan of action for the accomplishment of the project tasks. The plan shall follow the Edwards AFB Work Plan Template. The NFE shall provide a proposed comprehensive timeline for completion of the required work element activities and submittals. Updated project schedules will be provided by the NFE when the schedule changes, regardless of whom is responsible for causing the change in schedule. Updated schedules shall be submitted within seven calendar days of any documented change in project schedule.

Technical Report – The NFE shall submit a separate draft and final technical report describing in narrative format the accomplishments of the project tasks, including pertinent maps, figures, tables, and photographs. The report format shall follow that of a scientific publication and include the following section heading: Introduction, Methods, Results, Discussion and Literature Cited, as well as original data sheets and/or copies thereof, laboratory reports, and other appendices, as appropriate.

GIS Data – The NFE shall comply with all requirements in the most recent version of the *Edwards Air Force Base Standards for Geographic Environmental Support Section 412 CEG/CEVA*. This document provides all details required for a successful GIS delivery. A preliminary technical consultation with 412 CEG/CEVA GIS staff shall be accomplished after the Post Award Kick-Off Meeting and prior to the start of all data collection for this project.

Brochure – The NFE shall prepare an interpretive tri-fold brochure (8.5” x 11”) that can be used to inform the general public about the findings of this project and the importance of Mesquite Bosque Monitoring. Write narrative to the 9<sup>th</sup> grade level, using captioned photographs, maps, and some text boxes to convey the key messages. Provide an editable electronic copy. Brochure shall be formatted for reproduction by the 412 TW/PA.

Poster – The NFE shall prepare an interpretive poster that can be used to inform the general public about the findings of this project and the importance of Mesquite Bosque Monitoring. Write narrative to the 9<sup>th</sup> grade level, using captioned photographs, maps, and some text boxes to convey the key messages. Provide an editable electronic copy, formatted for reproduction by the 412 TW/PA, and two flexible matte laminated posters (Large Poster 24”h x 36”w).

Video Script – The NFE shall prepare an editable video script five to 10 minutes in length that can be used to inform the general public about the findings and importance of Mesquite Bosque Monitoring. Write narrative to the 9<sup>th</sup> grade level and provide photo suggestions for script narrative. Provide an editable electronic copy.

Press Release – The NFE shall prepare an editable press release for the general public. The press release shall identify the project as a 412 CEG/CEVA Natural Resource project, what the project’s objective is, where the project is located on base, when the project will be implemented, and how it will be implemented. The press release shall be no longer than approximately 200 words. Write the narrative to the 9<sup>th</sup> grade level. Provide an editable electronic copy of: 1) Beginning of project press release. 2) End of project results press release.

### **Deliverables Schedule:**

Submit deliverables as listed below, or as otherwise specified in the NFE’s proposal. Deliverable schedule must be within the period of performance of the agreement. The NFE may propose an alternate schedule but should not reduce the opportunities for and duration of Government review periods.

<b>Description</b>	<b>When Due</b>	<b>Format</b>
Work Plan Draft	Notice to Proceed (NTP)+ 60 days	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Work Plan Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and work plan revision with track changes (e-mail attachment, or file transfer)
Work Plan Final	21 days after	PDF: Electronic only (e-mail attachment or



<b>Description</b>	<b>When Due</b>	<b>Format</b>
	Government approval of NFE's response to all Government comments	file transfer)
Weekly Status Report	Friday prior to upcoming field work week	Email
Monthly Status Report	Within 14 days after end of each month	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Draft Technical Report	To be determined by NFE	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
GIS Draft Technical Report Deliverables	Submit with Draft Technical Report	Per EAFB GIS Standards: Electronic (e-mail attachment, or file transfer)
Technical Report Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and technical report revision with track changes (e-mail attachment, or file transfer)
Final Technical Report	21 days after Government approval of NFE's response to all Government comments	PDF: Electronic (e-mail attachment or file transfer); 2 hard copies spiral or comb-bound, each with a CD containing the full document and all references.
GIS Final Technical Report Deliverables	Submit with Final Technical Report	Per EAFB GIS Standards Electronic (e-mail attachment, or file transfer) and CD
Brochure Draft	Submit with Draft Technical Report	Microsoft Word editable: (e-mail, compact disk, or file transfer)
Brochure Final	Submit with Final Technical Report	Microsoft Word editable and PDF file: (e-mail, compact disk, or file transfer)
Poster Draft	Submit with Draft Technical Report	Microsoft Word editable: (e-mail, compact disk, or file transfer)
Poster Final	Submit with Final Technical Report	Microsoft Word editable and PDF file: (e-mail, compact disk, or file transfer) and two flexible printed posters
Video Script Draft	Submit with Draft Technical Report	Microsoft Word editable: (e-mail, compact disk, or file transfer)
Video Script Final	Submit with Final Technical Report	Microsoft Word editable and PDF file: (e-mail, compact disk, or file transfer)
Press Release Initial	Submit with Work Plan Draft	Microsoft Word editable: Electronic only (e-mail attachment)
Press Release	Submit with Final	Microsoft Word editable: Electronic only (e-

Description	When Due	Format
Results	Technical Report	mail attachment)

### PERIOD OF PERFORMANCE FOR TASK 3

**Base only:** 18 months from notice to proceed

#### 3.4. Option Task 4: FSPMA53216122 Mgt, Nuisance

The primary objective of this project is to control nuisance animals on Edwards AFB by reducing food/cover subsidies, identifying and removing trash from illegal dumpsites, and removing nuisance animals. This project is identified in the Edwards AFB INRMP. It helps accomplish Goal 4: Maintain and enhance quality and quantity of habitat; and Objective 4.4: Control Nuisance Wildlife.

#### BACKGROUND

The boundary of Edwards AFB is fenced with 3-strand barbed wire and posted with signage to preclude trespass and inform about the presence of desert tortoise, a federally listed threatened species. The remoteness of most of the boundary from the cantonment area provides opportunities for trespass, illegal trash dumping, and access by stray animals. The Animal Damage Control Act (7 U.S.C. § 426-426b, 47 Stat. 1468) provides authority to the Secretary of Agriculture for investigation and control of mammalian predators, rodents, and birds. DoD installations may enter into cooperative agreements to conduct animal control projects. A Memorandum of Agreement (MOA), dated 8 September 2017, exists between Edwards AFB and California City, California for Feral and Stray Animal Control. This project may use this MOA to implement portions of these objectives.

#### OBJECTIVES

The NFE in accordance with applicable state and federal laws shall establish procedures, and solicit services and equipment to implement the following: 1) Identify illegal trash dumps on Edwards AFB and establish a protocol for documenting and initiating illegal trash dump clean-up and initiating a trash removal work order. 2) Clean-up and remove from Edwards AFB debris from illegal trash dumps on base that attract nuisance wildlife. 3) Remove from Edwards AFB existing and ongoing stray animals including but not limited to dogs, cats, goats, cattle, horses, snakes, and exotic birds. 4) Remove from or relocate on Edwards AFB nuisance wildlife including but not limited to coyotes, bobcats, bears, mountain lions, raccoons, and snakes. 5) Provide veterinary services to treat and/or euthanize injured nuisance animals and wildlife including but not limited to coyotes, bobcats, desert tortoises, owls, and raptors.

#### Optional periods:

The efforts produced in Option Periods 1, 2, 3, and 4 will be identical to the amount of effort produced in the Base Period.

**Option Period 1:** Provide a cost proposal to develop, implement, and document an effort identical to the efforts produced in the base period. The option would be exercised during FY22 at the Government's discretion, based on the availability of funds and would extend the PoP by 18 months.

**Optional Period 2:** Provide a cost proposal to develop, implement, and document an effort identical to the efforts produced in the base period. The option would be exercised during FY23 at the Government's discretion, based on the availability of funds and would extend the PoP by 18 months.

**Optional Period 3:** Provide a cost proposal to develop, implement, and document an effort identical to the efforts produced in the base period. The option would be exercised during FY24 at the Government's discretion, based on the availability of funds and would extend the PoP by 18 months.

**Optional Period 4:** Provide a cost proposal to develop, implement, and document an effort identical to the efforts produced in the base period. The option would be exercised during FY25 at the Government's discretion, based on the availability of funds and would extend the PoP by 18 months.

#### **OPTIONAL TASK 4-SPECIFIC DELIVERABLES**

Required deliverables include:

- Work Plan: Draft and Final
- Technical Report: Draft and Final
- GIS Data: Draft and Final
- Weekly Status Reports
- Monthly Status Reports
- Press Releases: Initial and Results

Progress Reports - One typed letter report describing progress on the project. The report shall be due as of the last day of the third month (quarterly) and shall be transmitted via electronic mail, facsimile, or regular mail no later than the 10th calendar day following the end of the reporting period. 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 which are due.

Weekly Status Report – The NFE shall provide to the Edwards AFB NRM weekly status reports via email when performing on-base project activities. The reports shall include activities accomplished, activities planned for the upcoming week, issues, and updated timelines for completion of work.

Monthly Status Report – The NFE shall provide a brief monthly project status report to the Edwards AFB NRM that describes the amount of work completed to date, work completed in the past month, upcoming work schedules, potential problems, and unresolved issues.

Work Plan – The NFE shall submit a separate draft and final work plan describing in narrative format the plan of action for the accomplishment of the project tasks. The plan shall follow the Edwards AFB Work Plan Template. The NFE shall provide a proposed comprehensive timeline for completion of the required work element activities and submittals. Updated project schedules will be provided by the NFE when the schedule changes, regardless of whom is responsible for causing the change in schedule. Updated

schedules shall be submitted within seven calendar days of any documented change in project schedule.

**Technical Report** – The NFE shall submit a separate draft and final technical report describing in narrative format the accomplishments of the project tasks, including pertinent maps, figures, tables, and photographs. The report format shall follow that of a scientific publication and include the following section heading: Introduction, Methods, Results, Discussion and Literature Cited, as well as original data sheets and/or copies thereof, laboratory reports, and other appendices, as appropriate.

**GIS Data** – The NFE shall comply with all requirements in the most recent version of the *Edwards Air Force Base Standards for Geographic Environmental Support Section 412 CEG/CEVA*. This document provides all details required for a successful GIS delivery. A preliminary technical consultation with 412 CEG/CEVA GIS staff shall be accomplished after the Post Award Kick-Off Meeting and prior to the start of all data collection for this project.

**Press Release** – The NFE shall prepare an editable press release for the general public. The press release shall identify the project as a 412 CEG/CEVA Natural Resource project, what the project’s objective is, where the project is located on base, when the project will be implemented, and how it will be implemented. The press release shall be no longer than approximately 200 words. Write the narrative to the 9<sup>th</sup> grade level. Provide an editable electronic copy of: 1) Beginning of project press release. 2) End of project results press release.

### **Deliverables Schedule:**

Submit deliverables as listed below, or as otherwise specified in the NFE’s proposal. Deliverable schedule must be within the period of performance of the agreement. The NFE may propose an alternate schedule but should not reduce the opportunities for and duration of Government review periods.

<b>Description</b>	<b>When Due</b>	<b>Format</b>
Work Plan Draft	Notice to Proceed (NTP)+ 60 days	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Work Plan Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and work plan revision with track changes (e-mail attachment, or file transfer)
Work Plan Final	21 days after Government approval of NFE’s response to all Government comments	PDF: Electronic only (e-mail attachment or file transfer)
Weekly Status Report	Friday prior to upcoming field	Email

Description	When Due	Format
	work week	
Monthly Status Reports	Within 14 days after end of each month	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Draft Technical Report	To be determined by NFE	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
GIS Draft Technical Report Deliverables	Submit with Draft Technical Report	Per EAFB GIS Standards: Electronic (e-mail attachment, or file transfer)
Technical Report Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and technical report revision with track changes (e-mail attachment, or file transfer)
Final Technical Report	21 days after Government approval of NFE's response to all Government comments	PDF: Electronic (e-mail attachment or file transfer); 2 hard copies spiral or comb-bound, each with a CD containing the full document and all references.
GIS Final Technical Report Deliverables	Submit with Final Technical Report	Per EAFB GIS Standards Electronic (e-mail attachment, or file transfer) and CD
Press Release Initial	Submit with Work Plan Draft	Microsoft Word editable: Electronic only (e-mail attachment)
Press Release Results	Submit with Final Technical Report	Microsoft Word editable: Electronic only (e-mail attachment)

#### PERIOD OF PERFORMANCE FOR OPTION TASK 4

**Base Period:** 18 months from notice to proceed

##### Optional Periods:

Option Period 1: 18 months from notice to proceed

Option Period 2: 18 months from notice to proceed

Option Period 3: 18 months from notice to proceed

Option Period 4: 18 months from notice to proceed

***This project is currently unfunded in FY2021, but it may be awarded if funds are allocated prior to the end of the fiscal year on 30 Sep 2021. The option years may be awarded independently of whether the base year is awarded.***

#### 3.5. Option Task 5: FSPMA53216119 Mgt, Habitat (Hyperspectral Imagery Analysis)

##### BACKGROUND

The study area is Edwards AFB, CA, which encompasses 124,716 hectares (308,180 acres) plus a small buffer zone around the base perimeter; the buffer zone size varies slightly among

datasets. Existing LIDAR-derived DEMs with 1.0-m resolution are available. Existing LIDAR data specifications: (2009 LIDAR) Spot spacing = 1.0 m; (2015 LIDAR) Spot spacing = 0.33 m; Hyperspectral data do not cover the entirety of Edwards AFB (e.g., the large dry lakebeds and certain other areas are excluded). Hyperspectral data specification: (2009 hyperspectral) pixel size = 1.0 m, spectral bands = 128, spectral range = 400-1000 nm; (2015 hyperspectral) pixel size = 1.0 m; spectral bands = 376; spectral range = 400-2500 nm.

## **OBJECTIVES**

Utilize existing Edwards AFB hyperspectral imagery and LIDAR data from 2009 and 2015 as well as results from FY18 hyperspectral imagery analysis project to conduct additional GIS-based analyses. Analyses include (1) prepare a single vegetation map of the Piute Ponds management area, delineating the spatial extent of major plant species, including invasive species; (2) prepare a single map of major habitat types for all of Edwards AFB; (3) Prepare predictive maps of potential habitat for T&E, candidate, and sensitive species, including species such as desert tortoise, Mohave ground squirrel, burrowing owl, desert cymopterus, alkali Mariposa lily, Lancaster milkvetch, sagebrush loeflingia, Mojave spineflower, Barstow woolly sunflower, Rosamond eriastrum, spreading pygmyleaf, and yellow spinescape. Conduct ground-truthing of analyses/prepared maps to determine accuracy.

## **QUALIFICATIONS**

Personnel qualifications include demonstrated expertise in GIS, remote sensing, LIDAR, and hyperspectral imagery. Personnel must be capable of utilizing combined LIDAR-derived data and hyperspectral imagery to conduct analyses required to delineate habitat types and plant species. Personnel must be capable of performing ground-truthing and analyzing the results.

## **OPTIONAL TASK 5-SPECIFIC DELIVERABLES**

Deliverables include the following:

- Draft and Final Work Plan
- Monthly progress reports (email)
- A single map with 1.0-m resolution delineating the spatial extent of major species, including invasive species in the Piute Ponds area
- A single map with 1.0-m resolution delineating major habitat types for of Edwards AFB
- Four predictive maps with 1.0-m resolution delineating potential habitat for T&E, candidate, and/or sensitive species, with the four species to be determined by CEV in coordination with the respondent
- Draft and Final Technical Report describing the methods and results of the work conducted, including ground-truthing analyses for each map produced.

Progress Reports - One typed letter report describing progress on the project. The report shall be due as of the last day of the third month (quarterly) and shall be transmitted via electronic mail, facsimile, or regular mail no later than the 10th calendar day following the end of the reporting period. 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 which are due.

Monthly Status Report – The NFE shall provide a brief monthly project status report to the

Edwards AFB NRM that describes the amount of work completed to date, work completed in the past month, upcoming work schedules, potential problems, and unresolved issues.

**Work Plan** – The NFE shall submit a separate draft and final work plan describing in narrative format the plan of action for the accomplishment of the project tasks. The plan shall follow the Edwards AFB Work Plan Template. The NFE shall provide a proposed comprehensive timeline for completion of the required work element activities and submittals. Updated project schedules will be provided by the NFE when the schedule changes, regardless of whom is responsible for causing the change in schedule. Updated schedules shall be submitted within seven calendar days of any documented change in project schedule.

**Technical Report** – The NFE shall submit a separate draft and final technical report describing in narrative format the accomplishments of the project tasks, including pertinent maps, figures, tables, and photographs. The report format shall follow that of a scientific publication and include the following section heading: Introduction, Methods, Results, Discussion and Literature Cited, as well as original data sheets and/or copies thereof, laboratory reports, and other appendices, as appropriate.

#### **Deliverables Schedule:**

Submit deliverables as listed below, or as otherwise specified in the NFE’s proposal. Deliverable schedule must be within the period of performance of the agreement. The NFE may propose an alternate schedule but should not reduce the opportunities for and duration of Government review periods.

<b>Description</b>	<b>When Due</b>	<b>Format</b>
Work Plan Draft	Notice to Proceed (NTP)+ 60 days	Microsoft Word editable and PDF: Electronic only (e-mail attachment, or file transfer)
Work Plan Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and work plan revision with track changes (e-mail attachment, or file transfer)
Work Plan Final	21 days after Government approval of NFE’s response to all Government comments	Microsoft Word and PDF: Electronic only (e-mail attachment or file transfer)
Monthly Status Reports	Within 14 days after end of each month	Microsoft Word editable: Electronic only (e-mail attachment, or file transfer)
Draft Habitat Maps	To be determined by NFE	1.0-m resolution Maps: ERDAS Imagine format (.img) or equivalent as agreed to by Edwards AFB
Habitat Maps	30 days after	Microsoft Word editable or as determined:

<b>Description</b>	<b>When Due</b>	<b>Format</b>
Comment Response	receipt of Government comments	Electronic only (e-mail attachment, or file transfer)
Final Habitat Maps	21 days after Government approval of NFE's response to all Government comments	1.0-m resolution Maps: ERDAS Imagine format (.img) or equivalent as agreed to by Edwards AFB
Draft Technical Report	To be determined by NFE	Microsoft Word editable and PDF: Electronic only (e-mail attachment, or file transfer)
Technical Report Comment Response	30 days after receipt of Government comments	Microsoft Word editable: Electronic only - comment matrix and technical report revision with track changes (e-mail attachment, or file transfer)
Final Technical Report	21 days after Government approval of NFE's response to all Government comments	Microsoft Word and PDF: Electronic (e-mail attachment or file transfer); 2 hard copies spiral or comb-bound, each with a CD containing the full document and all references.

## **PERIOD OF PERFORMANCE FOR OPTION TASK 5**

**Base Period:** 18 months from notice to proceed

*This project is currently unfunded in FY2021, but it may be awarded if funds are allocated prior to the end of the fiscal year on 30 Sep 2021. The option years may be awarded independently of whether the base year is awarded.*

## **4. GOVERNMENT FURNISHED MATERIALS OR PROPERTY**

The government will provide maps, INRMP, master plans, and previous reports relevant to this Cooperative Agreement.

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.

## **5. GENERAL PROVISIONS**

Edwards AFB encompasses approximately 308,180 acres in the Antelope Valley in southern



California. The installation lies in the western Mojave Desert in portions of Kern, Los Angeles, and San Bernardino counties. The base is approximately 100 miles southeast of Bakersfield. Approximately 13,400 military and civilian personnel work on Edwards AFB, many of whom live either on the base or in nearby communities, such as California City, Lancaster, Palmdale, and Rosamond.

**Access:** Access to Edwards AFB is restricted. General base access requires sponsorship by a Government civilian employee and should be coordinated at least two weeks prior to the visit. Long-term base access will require additional security clearances and access processing. Access to the Air Force Research Laboratory (AFRL), the Precision Impact Range Area (PIRA), the airfield, and other restricted facilities on EAFB may require additional security clearances and training. Access to some areas may be limited by ongoing military activities such that personnel access is limited to weekends or brief periods of a few hours. Access procedures are described in further detail in the most recent version of the *Edwards AFB Agreement Access Request Procedures Template*.

**Photography Use:** Photography at Edwards AFB is restricted, requiring an authorization letter that must be in the photographer's possession at all times. Cell phone photos are not allowed. Any photos/reports released to the public must be reviewed and authorized by Public Affairs. A non-disclosure agreement (NDA) is required for use of photographs for data analysis and report preparation prior to authorization by public affairs for release of photos/reports to the public.

**Biological Security Measure:** The NFE shall follow applicable Biological Security Best Management Practices identified in the most recent version of the Edwards Air Force Base Invasive Species Management Plan.

**Environmental Awareness Training:** All NFE project personnel working on Edwards AFB shall attend desert tortoise awareness training prior to commencing work or visiting the work site.

**Quality Assurance:** The NFE shall ensure that project activities, project reports, and project data are professionally executed with minimal errors.

## 6. GENERAL PERIOD OF PERFORMANCE

The PoP for each task is 18 months from the notice to proceed. This assumes the first four months will allow for the development of draft and final work plans, followed by 12 months for fieldwork and data collection, then two months for data analysis plus draft and final reports.

## 7. COORDINATION

USACE POC  
McCullough Wells, PM  
402-995-2590  
[margaret.m.wells@usace.army.mil](mailto:margaret.m.wells@usace.army.mil)

AFCEC POC  
Daniel F. Garcia, PE AFCEC/CZOW -  
Vandenberg AFB (805) 606-9834  
[daniel.garcia.23@us.af.mil](mailto:daniel.garcia.23@us.af.mil)

## **8. DELIVERABLES**

Edwards AFB requires use of the approved work plan template, standard report covers, and Standard Form 298 - Report Documentation Page. Reports shall generally be free of typos, grammatical errors, formatting inconsistencies and incorrectly labeled tables and figures. The reports shall provide proper citations for all documents referenced. It is requested that draft reports contain line numbering for ease of Government comment. Government and NFE comments shall be provided in a comment matrix provided by the Government. Project GIS Data shall be submitted along with draft and final reports. Final work plans, final technical reports, and final GIS data deliverables shall be submitted only after the NFE has addressed all Government comments satisfactorily.

Brochures, posters and video scripts shall be presented in draft versions to Natural Resource Manager for review prior to submission as final deliverable. Review is for agreement of general concept only.

## **9. CESU ADMINISTRATION**

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%).

Any resulting cooperative agreement will be subject to and NFE shall comply with 2 CFR 200.313 "Equipment", 200.314 "Supplies", and 200.315 "Intangible Property" which includes use of research data.

[End of SOO]