

US Department of Agriculture (USDA)



Performance Work Statement

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Project Title

Scientific consulting services including, but not limited to, support for Brown Tree Snake Barrier Testing, Data Analysis, and Tool Development

General Information

1.0 Background and Purpose

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) Guam State Office (WS-Guam) intends to procure scientific consulting services for a range of brown treesnake (BTS; *Boiga irregularis*) related work, including but not limited to BTS barrier testing and improvement, data analysis, and BTS removal tool development.

2.0 Definitions

- a. Brown Tree Snake (BTS) - *Boiga irregularis* - a nocturnal, arboreal, rear-fanged colubrid snake native to coastal Australia, Indonesia, and Papua New Guinea that has become an infamous invasive species on Guam.
- b. DBIDS - Defense Biometric Identification System, a physical access control and security system used globally at Department of Defense (DoD) military installations.
- c. CAC – Common Access Card, a credit-card-sized smart card used as the standard identification and security credential for active-duty military personnel, selected reserves, Department of Defense (DoD) civilian employees, and eligible contractors.
- d. Marine Corps Base Camp Blaz (MCBCB)
- e. Anderson Air Force Base (AAFB)
- f. Navy Base Guam (NBG)

Contractor Requirements

3.0 Technical Requirements / Tasks

USDA needs scientific consulting services to provide operational support for their program. Projects include, but are not limited to, a fence testing project to determine what modifications are needed to prevent snakes from crossing the fence or gates at newly constructed U.S. Marine Corps (USMC) barriers, data analysis, and BTS control and removal tool development. The contract recipient will develop and test barrier improvements and prepare short reports on findings and recommendations. The contractor will, as needed, supply data analysis support to ongoing USDA projects and provide summary figures to be used in reports to cooperators. The contractor will assist and advise on the development of new BTS removal tools or efficiency increasing modifications to existing tools utilized by USDA.

3.1 Kick-Off Meeting - A kick-off meeting will occur within 30 days of contract award. This meeting can occur on Guam or be remotely held (e.g., videoconference). The meeting will discuss timelines, methods for testing, current project focus, deliverables, as well as all facilities, equipment, and supply needs WS-Guam will provide.

3.2 BTS Barrier Gate Testing and Modification - Testing to determine if BTS can defeat established barriers and gain access to the interior of the fence. The recipient will create and test modifications to the barrier and determine which enhancements (if any are needed) are most effective at preventing BTS from crossing the barrier. Any testing arena used must be manufactured in such a way as to prevent BTS from escaping by utilizing the testing arena walls or where the arena is installed against the barrier. The arena shall not cause any lasting changes or damage to the BTS barrier being tested. When testing modification performance, the contract recipient and WS-Guam will agree upon snake size classes and the number of snakes in each size class that will be used in each trial. Snakes will be placed inside the arena and monitored via game cameras set to take photos on a 10 second time-lapse to identify the number of climbing attempts made and document failures or successes by snakes that try to defeat the barrier. A live lure installed on top of the barrier may be used if necessary to entice snakes to focus on defeating the barrier. Any lures must not be able to be used as an aide for defeating the barrier. All BTS required for testing will be provided to the contract recipient by WS-Guam. Any rare BTS size class needs (e.g., <700mm or >1600mm snout-vent-length) will be provided to WS-Guam at least 30 days before planned barrier testing to allow WS-Guam time to collect adequate numbers of rare BTS size classes. All constructed items developed and built for this project remains the property of WS-Guam.

3.3 Data Analysis - The contract recipient will provide an analysis of all data and transcription of photos relating to the BTS barrier testing. Additionally, the recipient will provide data analysis services for WS-Guam projects as needed. Data analysis services may include, but are not limited to, statistical analysis, summary figures, and interpretations to be used in official WS-Guam reports. All data products will remain with WS-Guam and will not be utilized in scientific articles or journals without prior consultation and written permission.

3.5 Retesting of Deficient BTS Barrier Fences and Gates - In the event that any of the gates or other fence sections are still found deficient after modifications, the USMC will utilize the report to upgrade the deficient areas. When the upgrades are completed, additional arena testing will be performed by the contract recipient. The contract recipient will be available to discuss these findings and provide further advice on subsequent improvements in construction or materials. These discussions can occur on Guam or remotely.

3.6 BTS Tool Modification and Development - The contract recipient will provide BTS removal and control tool modification and development services as needed. Tool modification may include, but is not limited to, 3D trap part design and printing, improvements to AT220 traps, funnel-type quail-baited traps, or other trap types, and the development of novel BTS control and removal devices. Small scale efficiency improvements to current tools may be performed remotely with WS-Guam implementing testing. New tool development and testing must include an on-Guam component for testing and troubleshooting in the field.

4.0 Deliverable / Schedule

All written deliverables shall be phrased in layperson language.

- Findings and Recommendations Reports - After barrier fence and gate testing and photo transcription are completed the contract recipient will write a report to outline methods, summary statistics, any deficiencies in the gates, and recommendations for design improvements if any BTS are documented to have escaped. Reports will be provided within 30 days of the completion of any barrier gate testing or scientific consultation and
- A finalized report will be completed 30 days after receiving WS-Guam comments on the initial report.

Key Deliverables

Item No.	Deliverable	Objective	Due
1	Findings and Recommendations Reports	Defining the responsibilities, timeline, risks and milestones of contract objectives.	No later than thirty (30) days after testing
2	Final Reports	Final Report after WS-Guam comments	No later than thirty (30) days after receiving comments from WS-Guam

5.0 Government Furnished

N/A

6.0 Travel

Travel to Guam for on-site testing at MCBCB and AAFB or NBG may be required. The number of trips and the duration will be determined based on the number of required studies and type of testing. Travel reimbursement is based on Federal / Agency travel regulations. The Contracting Officer's Representative (COR) is the Government Official authorized to approve contractor travel. Contractor is required to submit estimated travel costs for approval prior to travel.

7.0 Contractor's Key Personnel

The contract recipient must be experienced with BTS biology, ecology, and locomotion. Due to the documented unique climbing ability of the BTS compared to other arboreal snakes, only direct experience with the BTS is acceptable.

8.0 Security Requirements

The contract recipient must have the ability to obtain a DBIDS or Common Access Card (CAC) for military base access to operational sites on Marine Corps Base Camp Blaz (MCBCB), Anderson Air Force Base (AAFB), and Navy Base Guam (NBG).

9.0 Data Rights

All records, reports, and data generated under this contract become government-furnished information and may not be sold or shared with written authorization from the US Government.

10.0 Section 508 - Electronic and Information Technology Standards

Not Applicable