

**Environmental Security Technology Certification Program (ESTCP)**

**USE OF UNMANNED AERIAL VEHICLES (UAVs) FOR SAFE AND COST  
EFFECTIVE NATURAL RESOURCES MANAGEMENT ON DEPARTMENT OF  
DEFENSE LANDS**

**OBJECTIVE**

Proposals are sought for projects that will demonstrate and validate the use of available commercial or military Unmanned Aerial Vehicles (UAVs) to cost effectively improve installation natural resource management. Installation natural resource management includes fire management, invasive species, forestry operations, threatened and endangered species, wildlife, habitat, and landscape management.

UAVs and their sensor payloads have dramatically advanced in recent years. UAV technology advances have made the systems more promising for land management applications including improved guidance systems, reliability/durability, advanced sensing technologies and product focused software applications. These improvements combined with decreasing acquisition and implementation costs present an opportunity to advance natural resources management at DoD installations.

ESTCP is interested in demonstrating and validating UAV hardware and software systems that:

- Augment current installation management capabilities and processes;
- Utilize complete systems that are affordable and compatible with current decision support systems;
- Account for UAV control processes, automated image processing, and integration of data collection process with DoD planning and decision making processes;
- Balance the potential benefits and limitations to the use of UAVs in installation natural resource management;
- Demonstrate application to an appropriate niche or broad applicability to a range of high value practices;
- Demonstrate applications where manned flights or other data collection practices would pose an unreasonable risk and/or cost.

ESTCP is not interested in funding projects that develop or advance specific hardware capabilities of UAV systems.

**BACKGROUND**

The principal purpose of DoD natural resource management is to support mission-related activities. All DoD natural resources conservation program activities work to guarantee DoD continued access to resources for realistic military training and testing and to sustain the long-term ecological integrity of the resource base and the ecosystem services it provides. The DoD conducts military training and testing activities on over 25 million acres of land throughout the

nation. Often such uses result in direct and indirect physical impacts to soil, vegetation, and water resources that installations must monitor, assess and mitigate. Management of natural and cultural resources on military installations is often time-sensitive and cost- and labor-intensive. These activities can conflict with planned military operations, leaving only small windows of time available to obtain the necessary data. Depending on the resource, monitoring can involve field personnel working over long distances and rough terrain to survey dangerous areas that is time consuming, expensive, and poses potential safety concerns. This boots-on-the-ground monitoring may also lead to habitat disturbance and damage, which is especially problematic for species that live in sensitive habitats or need disturbance-free areas at certain times of the year (e.g., nesting season).

Proposed approaches should provide installation-level environmental staff with scientifically validated information for safely and cost effectively managing the natural resources on DoD installations.

**POINT OF CONTACT**

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For pre-proposal submission due dates, instructions, and additional solicitation information, visit the [ESTCP website](#).