



Munitions Response Program Area

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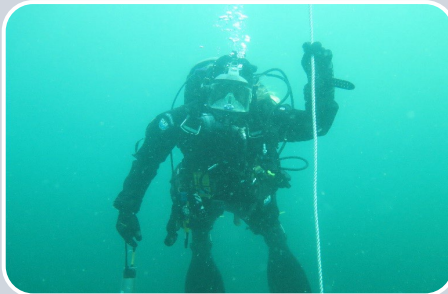
Background

- As a result of past military training and weapons testing activities, military munitions exist on sites designated for Base Realignment and Closure (BRAC), on Formerly Used Defense Sites (FUDS), and other closed ranges on active installations.
- The Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) successfully developed the technology now used across military lands to detect where munitions are buried and classify the type of munition to enable safe, efficient, and cost-effective site remediation

Challenge of an Underwater Environment



UXO remediation at underwater sites presents unique challenges for DoD compared to land-based sites.



The underwater environment restricts access and impacts the performance of established and emerging detection, classification, and localization (DCL) technologies.



Dynamic nature of sea conditions results in mobility of munitions and repeated burial.

Detection, Classification, and Localization Technologies and Their Platforms

Technologies

Acoustic Sensors

Optical Sensors

Magnetometer

Electromagnetic Induction (EMI)

Platforms

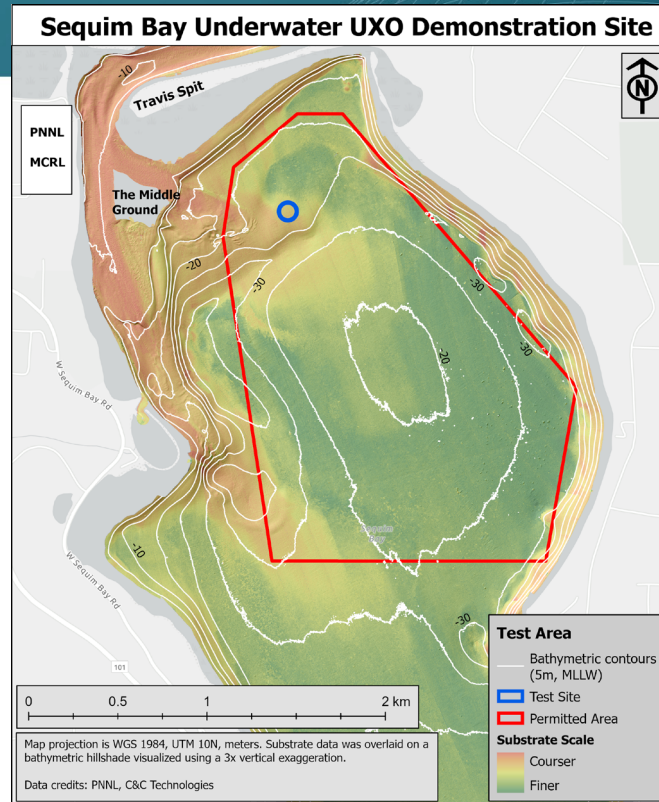
- Vessel
- Drones
- Autonomous Underwater Vehicles
- Autonomous Surface Vehicles



Test Site Development for DCL Systems

- DCL systems should be tested for all potential geophysical circumstances expected. A small number of demonstration test sites are currently funded by ESTCP under the MR program area:
 - Sequim Bay, Washington - Pacific Northwest National Laboratory
 - Well suited for surface ship towed systems due to its water depths
 - Panama City, Florida – Naval Surface Warfare Center Panama City Division (NSWC PCD)
 - Ideal for testing in 5 meters or less
 - Hawaii Munitions Test Range Complex – NAVSEA and University of Hawaii
 - Ideal for optical sensors due to its incredibly high water clarity

ESTCP Demonstration Sites



Transition to Live Site Demonstrations



The MR program area is shifting its efforts to live site demonstrations, testing technologies developed under ESTCP at real-world sites to gain a better understanding of their capabilities and limitations.

Maine Bombing Range

Phase I of the Maine Bombing Range demonstration included the deployment of White River Technology's drone magnetometer at Reid State Park in March 2024.

Live Sites 2 and 3 include Culebra, Puerto Rico and San Diego Bay, California.



Big Picture Goals

DoD/ESTCP

- How do we transition underwater technology?
- How do we develop processes and quality control (read: QAPP) for underwater?

Services

- How do we contract underwater work?
- What are appropriate production assumptions?
- What technologies are ready for prime time?

Stakeholders

- What's going on with our site?
- Standard RI concerns- nature, extent, risk?
- How can we minimize impact of investigation work to site users and receptors?

EDQW/DAGCAP

- How do we accredit and validate in the underwater arena?