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Spring 2013

Meeting DoD's Environmental Challenges

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IN THE NEWS

US Gov't to Air-Drop Toxic Mice on Guam Snakes

(The Associated Press)

DoD's Strategic

DoD Releases Climate Change Adaptation Roadmap in Support of Sustainability Planning

The Department of Defense (DoD) has released a Climate Change Adaptation Roadmap (CCAR) that details the Department's plan for managing the effects of climate change on its operations and infrastructure in both the short and long term. The CCAR outlines four broad goals: (1) define a coordinating body to address climate change; (2) utilize a robust decision making approach based on the best available science; (3) integrate climate change considerations into existing processes; and (4) collaborate with Federal agencies and other key partners on challenges of climate change. The Roadmap also provides an analysis of climate change risks and opportunities, outlining climate change phenomena and the resultant potential mission vulnerabilities, and identifies ongoing work throughout the Department to better understand and address climate change risks and opportunities. It specifically calls out SERDP's work to develop climate change assessment tools for DoD's installations. **Full Article**



Climate Change Adaptation: Enhanced Decision Making

SERDP researchers are developing decision frameworks to improve DoD's ability to assess the potential impacts of climate change on military installations and facilitate appropriate adaptive responses. Despite advances in the state of the science, tools and guidance on how to use appropriate climate-related data generally are lacking. DoD managers will need to assess potential impacts and appropriate actions to take in areas such as fire management, sustainability of water supplies, and military training and range operations. The key question being addressed is: *What is an appropriate framework for assessing vulnerabilities and impacts and guiding adaptation decisions to account for uncertainty, avoid maladaptive decisions, avoid over-committing resources, and be robust over time to a range of plausible future scenarios?* Enhanced decision making that better matches the decision to relevant climate information will reduce climate change vulnerabilities and increase resilience at military installations. **Full Article**

**Sustainability
Performance Plan 2012**
(DUSD (I&E))

**Can a Cold, Green,
Supersonic Spray Save
the Black Hawk?**
(FoxNews.com)

ANNOUNCEMENTS

New SERDP and ESTCP
Resources - [Browse by
Program Area](#)

CALENDAR

June 12-13: SERDP
Scientific Advisory Board
Meetings (Arlington,
Virginia)

July 15: SERDP and
ESTCP Quarterly
Progress Reports Due

RELATED EVENTS

June 10-13: Second
International Symposium
on Bioremediation and
Sustainable
Environmental
Technologies
(Jacksonville, Florida)

July 21-25: Society for
Conservation Biology's
International Congress
for Conservation Biology
(Baltimore, Maryland)

August 4-9: Ecological
Society of America's 98th
Annual Meeting
(Minneapolis, Minnesota)

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Intelligent and Energy-Efficient LED Street Lighting

An intelligent and energy-efficient light emitting diode (LED) street lighting system demonstrated by ESTCP at the Naval Surface Warfare Center (NSWC) "Carderock Division in Maryland, reduces electricity consumption by 75 percent, while improving light quality. The multi-level demand-sensitive LED street lighting system was installed at NSWC, replacing the existing high pressure sodium (HPS) lamps with LEDs on the same lamp posts. The power consumption of the HPS units was approximately 3.4 kW, which remained constant from dusk to dawn. The LED-based system's power consumption was measured at 1.24 kW at its full intensity and reduced to about 0.71 kW at 50 percent intensity when there was no traffic. When traffic was detected, lights came back on to full intensity. The system has been 100 percent available and reliable without any failure since its installation more than 16 months ago. LEDs cost about four times more than HPSs; however, their initial purchase costs are recovered in six years based on electricity savings and annual recurring operations and maintenance costs. [Full Article](#)



DoD Investigates Reliability of Natural Gas-Fired Generators During Electric Grid Failures

Natural gas-fired electricity generators can provide energy security at domestic military installations in the event of electric grid failures, according to a recent DoD study. The study, performed by MIT Lincoln Laboratory, assessed the reliability of the natural gas supply system during power outages. It found there is minimal risk of interrupted deliveries for a moderate outage (two weeks

to three months). The report identifies measures to manage the risks associated with longer outages.

[Full Article](#)

Forward Operating Bases: Water and Waste Management

SERDP researchers are developing innovative technologies to improve water and waste management for sustainably maintaining forward operating bases (FOBs) around the world. FOBs provide a secure forward position to support tactical operations for the Department of Defense. Often, FOBs are used for extended periods and must meet basic needs, including water supply, fuel for base and operational requirements, and waste treatment and removal, on a daily basis. Supplying materials to build and sustain FOBs has been costly both in dollars spent and lives lost. Technologies that reduce the impact of FOBs on the environment and improve the conditions in which military personnel live will also improve safety and reduce logistics costs.

[Full Article](#)



'Flyer' Improves OB/OD Air Emissions Measurement

A novel measurement technology developed with SERDP support accurately characterizes air emissions from the open burning and open detonation (OB/OD) of DoD munitions. These emissions have been difficult to measure in the field, so most past OB/OD emission studies were performed in limited volume structures known as "bang boxes" that did not fully replicate open air OB/OD operations. Deployed via a helium-filled balloon, the Flyer technology has quantified emissions from a variety of OB/OD scenarios in challenging field conditions at Tooele Army Depot, Utah. These measurements can be used to develop emission factors that will enable OB/OD facilities to calculate their mass emissions and operate at levels that comply with environmental regulations and protect human health and the environment. [Full Article](#)



Turnkey Repair Station for Aerospace Magnesium Components Uses Cold Spray Technology Developed by ESTCP

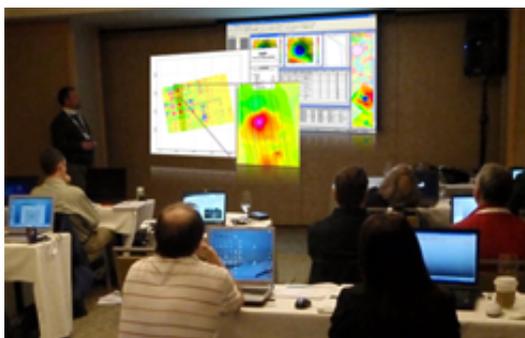
An Office of the Secretary of Defense effort is under way to establish a sophisticated turnkey repair station for magnesium alloy aerospace components using the highly successful cold spray technology developed with ESTCP support. The novel coating system represents a low-cost, environmentally friendly method for combating corrosion and reclaiming otherwise unsalvageable magnesium components. The repair station will be the first single facility with the capability to perform all the operations required to restore these salvaged parts and will reduce repair time by up to three months. [**Full Article**](#)



Partnering to Advance Munitions Classification

ESTCP, in an ongoing partnership with the National Association of Ordnance and Explosive Waste Contractors (NAOC), is sponsoring a series of courses for munitions response contractors and government personnel to learn more about advanced tools for cost-effectively cleaning up munitions-contaminated sites. The focus of these courses is munitions classification using the UX-Analyze tool. UX-Analyze, developed with ESTCP support, is a geophysical target analysis, modeling, and classification module within Geosoft's Oasis montaj software. With this easy-to-use and comprehensive tool, geophysicists can analyze advanced electromagnetic induction (EMI) sensor data and make classification decisions. Targets classified as munitions are excavated and those classified as harmless metal clutter can be left in the ground. ESTCP has sponsored 12 offerings of the hands-on course, training more than 250 personnel representing 40 firms and government agencies nationwide.

[**Tools and Training**](#)



Stakeholders Weigh in on New Munitions Response Classification Technology

As DoD moves toward the adoption of geophysical classification for munitions response to accelerate cleanup, communities involved in UXO investigations need to be confident in the approach's effectiveness. In November 2012, ESTCP convened a stakeholders' forum on the use of geophysical classification for munitions response. Chaired by Lenny Siegel of the Center for Public Environmental Oversight, the forum was attended by 10 geographically representative stakeholders from some of the nation's best known former range sites. Overall, participants were receptive to the new technologies and raised important points about potential implementation issues to consider, such as the need for individuals conducting analyses to be certified and for independent validation of the results. [Full Article](#)

Science Informs Policy on Assessing the Impacts of Climate Change to Coastal Installations

A new SERDP report identifies key policy questions that need to be addressed to ensure that climate change vulnerability and impact assessments are conducted effectively and that assessment findings are appropriately used to inform decisions. The report also identifies technical and institutional considerations that should be incorporated into DoD policies and guidance to ensure an effective and sustainable approach to enhancing military readiness and protecting DoD assets in the face of climate change. The report draws on the work of four SERDP-funded research projects that are developing and testing information, models, and tools necessary to examine the potential climate change vulnerability of and impacts on coastal military installations. [Full Article](#)

NOAA Publishes Global Sea Level Rise Scenarios Report

The National Oceanic and Atmospheric Administration (NOAA) in collaboration with SERDP has released a report on global sea level rise scenarios out to the year 2100. The report concluded that a more than 90 percent chance exists that global mean sea level will rise between 0.2 and 2.0 meters by 2100, no more, no less. Over the course of the next century, this will have significant impacts on natural and built infrastructure on coastlines in the United States including infrastructure critical to the Department of Defense and military readiness. Written by contributors from 10 federal and academic science institutions, the report lays out four risk-based scenarios describing potential future conditions. Planners, policy makers, and coastal managers can use these scenarios to assess vulnerabilities and impacts from sea level rise and take action to minimize them. [Full Article](#)



SERDP and ESTCP Program Update

SERDP

By early February 2013, SERDP requested full proposals from investigators who submitted the most qualified pre-proposals in response to the FY 2014 Core Solicitation. The 104 full proposals received by March 12, 2013, are currently undergoing peer review prior to review by the SERDP Technical Committees (STCs). In June and July, the STCs will meet to deliberate on which proposals they recommend be funded. The 40 proposals submitted in response to the FY 2014 SERDP Exploratory Development (SEED) Solicitation for the Munitions Response and the Weapons Systems and Platforms Statement of Need are also under review.

ESTCP

A total of 245 pre-proposals were received by the March 14 deadline in response to the FY 2014 ESTCP Environmental Technologies Solicitation. The pre-proposals are currently under review by the ESTCP Technical Committees (ETCs). Following their meetings in May and June, the ETCs will provide recommendations for full proposal requests to the ESTCP Director. Full proposal requests and instructions will be disseminated in June with full proposals due in August.

On March 28, a total of 224 pre-proposals were received in response to the FY 2014 ESTCP Installation Energy Solicitation. The pre-proposals are under review by the ETCs, and recommendations for full proposal requests will be provided to the ESTCP Director in June. Full proposal requests and instructions will be disseminated in June with full proposals due in August.

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