

SPRING 2013

NESDI NEWS

Highlights & Happenings



Welcome

This quarterly update provides you with the latest information about program operations, significant accomplishments, and future focus areas for the Navy Environmental Sustainability Development to Integration (NESDI) program. We hope you will find these insights useful and that they encourage you to participate (or increase your involvement) in the program over the coming months.

The NESDI Program: Integrating Green Technologies Into the Fleet





Who We Are

The NESDI program is the Navy's environmental research and development demonstration and validation (6.4) program, sponsored by the Chief of Naval Operations Energy Environmental Readiness Division (OPNAV N45) and managed by the Naval Facilities Engineering Command (NAVFAC). The mission of the program is to provide solutions by demonstrating, validating, and integrating innovative technologies, processes, materials, and by filling knowledge gaps to minimize operational environmental risks, constraints, and costs while ensuring Fleet readiness.

From the Program Manager's Desk



Leslie Karr, P.E.
NESDI Program Manager

Welcome to the Spring 2013 issue of *NESDI News: Highlights & Happenings*—part of our ongoing effort to keep you informed about the NESDI program.

Before I discuss our recently initiated needs solicitation for Fiscal Year (FY) 2014, I wanted to take this opportunity to thank Mr. Andy Del Collo, from our resource sponsor, OPNAV N45, for his many years of leadership of the NESDI program. Andy has been a tireless advocate for the program since serving as NESDI program manager many years ago and continued to serve the program from the Pentagon as the chief of the Strategic Planning, Enterprise, and Innovation Branch at OPNAV N45. We all wish Andy a long, happy, and healthy retirement.

As I mentioned, the next significant milestone on the NESDI program schedule is the opening of our needs solicitation process for FY14. Although our formal needs collection process for FY14 ended on 1 August, I encourage you to submit a need at any time over the course of the year. (See our Program Schedule on page 11 of this issue of *NESDI News* for more insights.)

For the NESDI program, a “need” defines a requirement to eliminate or reduce an environmental constraint that:

1. Addresses a Fleet operational challenge
2. Identifies an existing gap in knowledge, technology, and/or capability
3. Is associated with an environmental constraint or regulatory driver

Needs are the fundamental basis of the NESDI program recommended solutions to the need are the basis of our technology investments.

When submitting a need, I encourage you to provide as much information as you can about your issue. What is the problem? How big is it? What’s the basis of the problem? Is it due to a current or impending regulatory requirement that now makes your job more difficult? Is it a technology gap? Is it a fleet operational challenge? Is the problem unique to your facility or is it applicable across the Navy?

For more information about submitting a need, read the “Using Our Web Site” section on page 10 of this issue of *NESDI News* and visit our web site at www.nesdi.navy.mil or contact your Technology Development Working Group (TDWG) representative.

A handwritten signature in black ink that reads "Leslie A. Karr". The signature is fluid and cursive.

Leslie Karr



Integrating Technologies

A New Sensor, Seafloor Cable Removal Documentation & Skeet

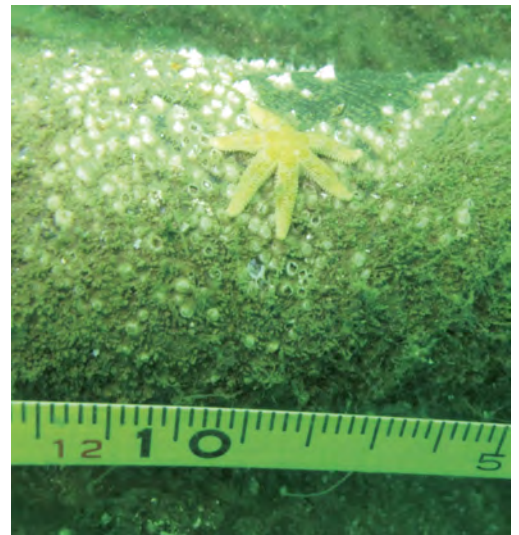
For the past several years, Bill Major from the Naval Facilities Engineering and Expeditionary Warfare Center (EXWC), formerly the Naval Facilities Engineering Service Center, has been leading a number of projects for the NESDI program including an effort to demonstrate a low cost, real time sensor to detect chlorinated solvents to determining the polycyclic aromatic hydrocarbon (PAH) composition of clay targets used at skeet ranges. All three of Bill's current NESDI projects are described below.

Demonstrating a Low Cost, Real Time Sensor to Detect Chlorinated Solvents

In 2012, Bill led a team to develop and demonstrate a low cost real time sensor to detect chlorinated solvents (trichloroethylene (TCE), perchloroethylene (PCE), cis & trans Dichloroethene (DCE), and Vinyl Chloride (VC)) under NESDI project, "Low Cost Selective Polymer and Laser Interferometer Real Time Sensors for Detection of Solvents in Contaminated Groundwater Plumes." Bill's project addresses one of the Navy's largest and most costly contaminated groundwater monitoring problems, and will result in greater regulatory acceptance of the sensor. The low cost sensor costs from \$250 to \$500 per sensor and a single sensor will displace hundreds to thousands of conventional laboratory analyses (approximately \$200 per sample) over a lifetime. The real-time detection capability and significant increases in contaminated plume temporal and spatial delineation will result in better management of Navy groundwater plumes.

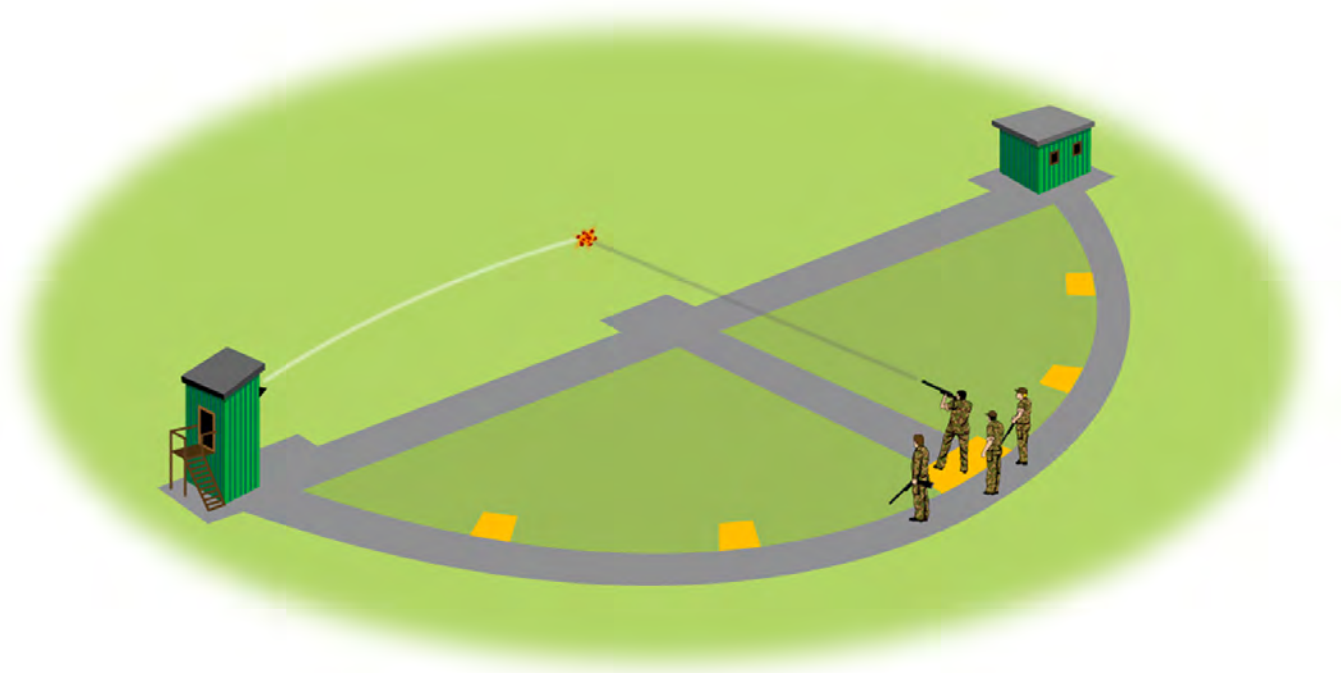
Documenting the Pre and Post Impacts of Removing a Submarine Cable

Bill's project on "Long Term Disposition of Seafloor Cables" was the first effort to scientifically document the pre and post impacts of removing a submarine cable. The cable was located near shore in the Monterey Bay National Sanctuary, and was removed by the Navy in the summer of 2011. On a very short timeline (less than six months), Bill was able to successfully organize a multidisciplinary team, develop



Seafloor cables.

the project master plan, interface with numerous environmental regulatory bodies, contract for environmental dive inspections, and integrate efforts with the Navy dive team performing the cable removal. The team was highly successful in completing the pre and post cable removal inspections to document the changes in the benthic environment.



Assessing the Toxicity Associated with PAHs used in Clay Targets

Under the Munitions Response Program (MRP), the Navy is required to clean up skeet ranges based on PAH levels associated with clay targets. There is evidence to suggest, however, that the toxicity of these PAHs is significantly less available because the PAHs are chemically bound within the matrix of the clay target, reducing the potential for binding with organic compounds in the soil. Under this project, Bill and his team are attempting to identify and estimate the composition of clay target contaminated soils at Navy skeet ranges and provide methods to determine the relative bioavailability of PAHs in these soils. Accomplishing this can potentially reduce clean-up costs at Navy skeet ranges by up to 80 percent.

Half of the ranges in the MRP are small arms ranges, of which a substantial number are skeet ranges. Currently under the Installation Restoration Program, 25 skeet ranges at 16 US Navy installations are proceeding to the Remedial Investigation/Feasibility Study phase. Specific data for ecotoxicity and human health risk associated with PAHs in clay targets is needed in order to develop and propose appropriate clean-up guidelines to meet regulatory needs. Currently, a relative bioavailability factor (RBA) of 1 must be assumed, though studies suggest that a more realistic RBA value lies between 0.1 to 0.76. However, there are no standard tests that have been generally accepted for adjusting the RBA.

For more information about these projects, contact Bill Major at william.major@navy.mil. Bill is profiled in this issue of *NESDI News*.

The NESDI program is always looking for demonstration sites for our ongoing projects and sites where we can implement our finished products. Contact the NESDI Program Manager or your TDWG representative if you think your installation might benefit from one of the NESDI program's demonstrated technologies.



Names & Faces: **NESDI Profiles**

In this issue of *NESDI News*, we profile Bill Major.



Bill Major

Organization

Naval Facilities Engineering and Expeditionary Warfare Center

Education

B.S. in Mechanical Engineering,
University of California at Santa Barbara

Experience

I have over 30 years experience with the Navy developing innovative technical solutions to a wide variety of Navy and Department of Defense (DoD) environmental problems. Some of my early work involved developing methods for ex-situ bioremediation of contaminated soils and applying the techniques to large scale treatment systems at many Navy and Marine Corps activities. I was co-developer on the Low Range Differential Pressure (LRDP) and the Portable Rapid Test (PRT) fuel tank leak detection systems. These systems can serve DoD tanks over 10 million gallons and both systems were awarded U.S. patents and set new industry standards for leak detection system accuracy and sensitivity during their U.S. Environmental Protection Agency third party certification tests. I have worked as the Principle Investigator under numerous programs including the NESDI program, the Environmental Security Technology Certification Program (ESTCP), the Strategic Environmental Research and Development Program (SERDP), and directly funded Navy/Marine activity projects. Projects under these programs included geophysical monitoring of amendments in the subsurface, ex-situ and in-situ bioremediation, passive acoustic detection and location of fuel leaks in Navy bulk fuel pipelines, and in-depth analysis of direct push and conventional groundwater well technologies for long-term monitoring.

Role

My primary role has been as a technical researcher and principal investigator on a wide range of Navy environmental restoration and compliance projects. I was also the SERDP National Environmental Technology Test Site manager for several years, which included coordinating and overseeing many projects from industry, academia, DoD and the regulatory community. As the test site manager I was responsible for planning, scheduling, and managing multidisciplinary efforts to acquire research data necessary for DOD-wide implementation of environmental technologies. I directed a diverse technical team to accomplish tasks including environmental assessment, hazardous waste sampling and laboratory analyses, laboratory treatability studies, instrumentation, mechanical engineering and design, soils engineering, and computer modeling. Duties also included chairing meetings with local, state and federal regulatory agencies and delivering briefs on project plans, innovations and status.

Connections

I have had the good fortune to work on projects and form long lasting relationships with many talented people in the DoD, academia, industry and regulatory community.

Perspective

Navy activities confront diverse and difficult environmental problems requiring equally diverse technical and cost-effective solutions. I considered it a privilege to be part of the NESDI team that works on and delivers these solutions.



For more information about Bill's projects and his role in the NESDI program, read the Integrating Technologies section in this issue of *NESDI News*.

Bill Major Selected as Environmental Restoration Employee of the Year

Bill Major, profiled in this issue of *NESDI News*, was selected as the FY12 Environmental Restoration Employee of the Year for the Naval Facilities Engineering and Expeditionary Warfare Center.

As it states in Bill's citation, he made significant contributions to the Navy Environmental Restoration Program as a Principal Investigator for several very successful research, development, testing and evaluation (RDT&E) projects funded by the NESDI program. These contributions include a demonstration of a low cost,

real time sensor to detect chlorinated solvents and an effort to document the pre and post impacts of removing a submarine cable.

Bill is commended for advancing environmental sampling and monitoring technologies and for enthusiastically sharing his vast knowledge with Navy Remedial Project Managers, consultants, and regulators. Bill's citation was signed by Mr. Larry Douchand, Assistant Commander for Environmental Programs.

THE NESDI PROGRAM

*congratulates
one of its own on this great honor!*



EXWC & FRCSE Host In-Progress Reviews

The NESDI program's final In-Progress Reviews (IPR) for FY13 were held in May and June of this year. In May, Principal Investigators from EXWC and the Space and Naval Warfare Command, Systems Center Pacific joined personnel from the NESDI program in Port Hueneme, California to review the progress they have made over the course of the past year.

After this IPR, we said goodbye to Jeff Heath as he accepted a promotion to head of the EXWC Environmental Security Department. Jeff served the NESDI program for many years as one of NAVFAC's representatives on our TDWG. Barbara Sugiyama,

our remaining representative from NAVFAC, will help us fill Jeff's shoes. Jeff's vast working knowledge of the environmental RDT&E activities across DoD, Navy, and academia/ industry was a great resource for all of us – past and present—in the NESDI program. Although Jeff's expertise and perspective will be difficult to replace, we wish him well on his new assignment and look forward to crossing paths with him in his new capacity.

In June of this year, the NESDI program conducted its final IPR for FY13 in Jacksonville, Florida at the Fleet Readiness Center Southeast



Members of the NESDI program's management team, some of its Principal Investigators, and FRCSE interns gather outside the FRCSE Commanding Officer's office before touring the facility.

(FRCSE). The overall quality of the quality of the briefs presented by the Principal Investigators and the influx of new Principal Investigators from both the Naval Air Systems Command and Naval Sea Systems Command was well received. One of the week's highlights was seeing the FRCSE-based Principal Investigators in action when we toured both the FRCSE itself as well as the Materials Engineering Laboratory. The pride in their work was evident and drove home the importance of their work to the warfighter.

Another highlight of the week was touring the new chemical sludge treatment system at NAS Jacksonville. Kevin Gartland, environmental director at NAS Jacksonville, and Jim Christopher, from BCR Environmental Corporation, the contractor that installed the new system, conducted the tour. This system consumes significantly less energy than the aerobic digesters previously used for sludge treatment at NAS Jacksonville. Kudos to all from Jacksonville who made this IPR and all the tours a great success!

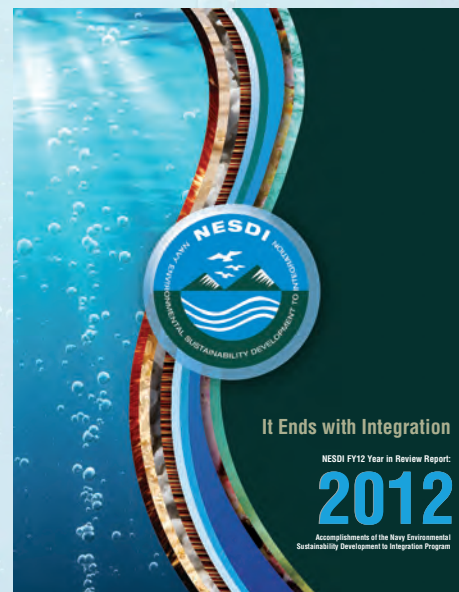
Having the IPRs alongside our customers is illuminating and rewarding for all of us. Seeing our efforts firsthand to demonstrate and validate new and improved technologies is confirmation to the NESDI program and our resource sponsor that our process and people are working.

Program Releases FY12 Year in Review Report: Annual Report Highlights Project Integration

The NESDI program has released its annual report, entitled ***"NESDI FY12 Year in Review Report: It Ends With Integration."***

As the name implies, the NESDI program is committed to promoting its successful projects and, more importantly, integrating the technologies, enhanced industrial processes, and other the results of its projects to the Navy end user community. And the Year in Review Report is one such method for doing so.

The report contains a financial review of program expenditures as well as insights into projects that were particularly successful in demonstrating the use of an innovative technology, or collecting critical information to enhance the efficiency of environmental management programs. From finding a method to distinguish background perchlorate from anthropogenic sources to determining the effects of military expendable materials in the marine environment, the report provides insights into some of the most successful NESDI projects.

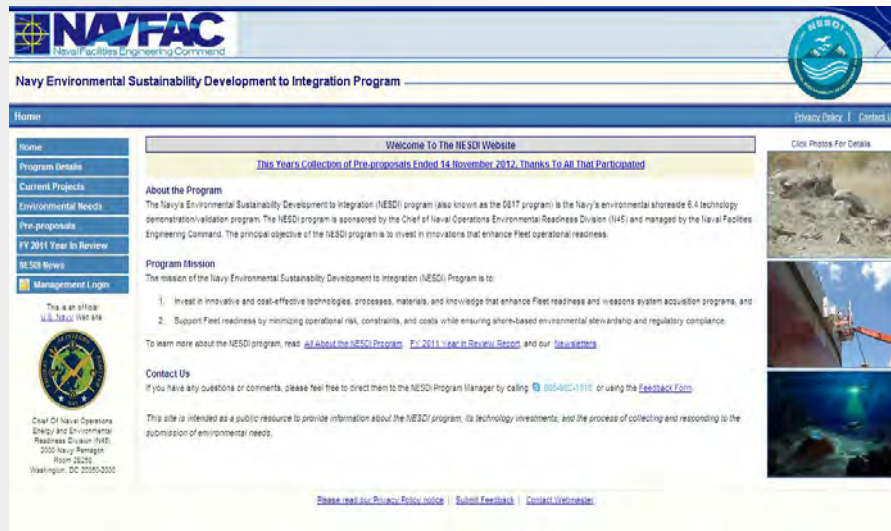


For a hardcopy of the NESDI program's FY12 and other Year in Review reports, please contact Lorraine Wass at 207-384-5249 or ljwass@surfbest.net. An electronic (pdf) version of the report can also be downloaded from the program's web site at www.nesdi.navy.mil.



Using Our Web Site

www.nesdi.navy.mil



To submit your need, visit the “Environmental Needs” section on the NESDI web site (at www.nesdi.navy.mil) then click on the “Submit A Need Now” button. This will take you to the “NESDI Environmental Needs Submission Form.”

Use this on-line form to tell us everything you can about your need. Then use “Spell Check” to correct any typos and click on the “Submit Need” button to complete the process.

Once you submit your need, technical experts assembled by NESDI program management will assess, validate, and rank it. You will be notified about the ultimate status of your need once this ranking process is complete.

For more information, download our *Reference Guide: Submitting and Evaluating Needs* by visiting the NESDI web site at www.nesdi.mil then clicking on the “Environmental Needs” button. Direct any questions about the use of our web site to Eric Rasmussen, our webmaster, at 732-323-7481 and eric.rasmussen@navy.mil.

Program Schedule

From now through the end of the summer, the program will concentrate its efforts on collecting and screening needs received via our FY13 solicitation. A complete program schedule is provided below.

NO.	WHAT	WHEN
1.	Announce FY14 Needs Solicitation	1 June 2013
2.	Close FY14 Needs Solicitation	1 August 2013
3.	Screen Needs	12-23 August 2013
4.	Evaluate & Rank Needs	9-13 September 2013
5.	Obtain Sponsor Review & Approval of Needs	16-27 September 2013
6.	Conduct N45 Programmatic Review	23 September – 4 October 2013
7.	Request Pre-proposals	11 October 2013
8.	Close Pre-proposal Collection	13 November 2013
9.	Collect TDWG Comments on Pre-proposals	18 November 2013
10.	Evaluate Pre-proposals	18-22 November 2013
11.	Request Full Proposals	12 December 2013
12.	Collect Full Proposals	19 February 2014
13.	Deadline for Working Group Comments on Full Proposals	14 March 2014
14.	Collect TDWG Comments on Full Proposals	21 March 2014
15.	Screen Full Proposals	24-28 March 2014
16.	Deadline for Principal Investigators to Answer Screening Questions	28 April 2014
17.	Conduct In-Progress Reviews	2-6 December 2013 Stormwater IPR (location TBD) 5-9 May 2014 West Coast IPR (Port Hueneme, CA) 9-13 June 2014 East Coast IPR (location TBD)
18.	Evaluate Full Proposals	9-13 June 2014 (at East Coast IPR)
19.	Obtain Sponsor Review & Approval of Full Proposals	27 June 2014
20.	Announce New Starts	30 July 2014
21.	Quarterly Status Reports Due (all Mondays)	1 July 2013 7 October 2013 6 January 2014 7 April 2014

Check out our web site at www.nesdi.navy.mil for the latest version of our program schedule.



GETTING ON OUR MAILING LIST

If you're not already on our mailing list and want to subscribe to *NESDI News*, please send your email address to Lorraine Wass at 207-384-5249 or ljwass@surfbest.net.

CONTACT US

For more information about the operation of the NESDI program, contact Leslie Karr, the program manager, or members of the TDWG—the program's management team.

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3.	Earley, Pat	SPAWAR	619-553-2768	patrick.earley@navy.mil
4.	Hertel, Bill	NAVSEA	301-227-5259	william.hertel@navy.mil
5.	McCaffrey, Bruce	Consultant	773-376-6200	brucemccaffrey@sbcglobal.net
6.	Olen, Jerry	SPAWAR	619-553-1443	jerry.olen@navy.mil
7.	Paraskevas, Nick	NAVAIR	301-757-2140	nicholas.paraskevas@navy.mil
8.	Rasmussen, Eric	NAVAIR	732-323-7481	eric.rasmussen@navy.mil
9.	Sugiyama, Barbara	NAVFAC	805-982-1668	barbara.sugiyama@navy.mil
10.	Webber, Cindy	NAVAIR	760-939-2060	cynthia.webber@navy.mil



IN THE NEXT ISSUE OF *NESDI NEWS*

There is a lot more information coming your way in the next issue of *NESDI News: Highlights & Happenings*. In our summer 2013 issue, we will share the results of our efforts to collect and screen outstanding needs from across the Fleet. We'll also tell you about the new projects we'll start up in FY14.

Until then, look for an article in the summer 2013 issue of *Currents*, about the results of Sonny Maga's efforts to oversee the construction of a manmade mini wetland system recycling and reusing domestic wastewater at Marine Corps Recruit Depot (MCRD) San Diego entitled "Manmade Wetland at MCRD San Diego Recycles Wastewater: Water Conservation Possible with the Living Machine." Read *Currents*, the Navy's energy and environmental magazine, on-line and subscribe to the magazine at <http://greenfleet.dodlive.mil/currents-magazine>.