

# From Wind Farms to Whales, Navy Marks Significant Milestones in Environmental Management

## In Celebration of Earth Day, N45 Highlights Environmental Accomplishments of 2011

**FOR THE NAVY**, 2011 marked a series of environmental milestones ranging from the biological to the global scale. As examples, the Navy reviewed hundreds of sites for installation restoration, munitions response, and compatibility issues; conducted marine mammal research; educated thousands of school children and

not impacted. To increase organization-wide alignment on compatibility and readiness and sustainment (CRS) issues, the Navy formed Task Force Compatibility and Readiness Sustainment (TFCRS) in April 2011. The task force is chaired by the Deputy Chief of Naval Operations (CNO) for Fleet Readiness and Logistics (N4) and

our mission,” said Ron Tickle, Branch Head, OPNAV N45 Readiness Sustainment and Compatibility Branch.

In 2011, in coordination with the Office of the Secretary of Defense (OSD) Siting Clearinghouse, TFCRS reviewed 450 energy projects for potential adverse impacts to training and testing. Roughly 430 of these projects were

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—Ron Tickle, Branch Head, Readiness Sustainment and Compatibility Branch, OPNAV N45

others about Navy environmental programs; and tested several aircraft and tactical vehicles on biofuels.

### Compatibility & Readiness Sustainment

As communities around naval installations embrace alternative energy projects and pursue other urban development opportunities, the Navy is working to ensure that local training and other vital military activities are

directed by the CNO Energy and Environmental Readiness Division (OPNAV N45). Through the task force and other workgroups, both internal and external, the Navy is building collaborative approaches and mitigation strategies to address CRS issues.

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determined to have negligible impacts and were cleared for development. Further analysis and/or mitigation measures enabled the Navy to clear all but seven outstanding projects.

Wind turbine projects near Naval Air Station (NAS) Kingsville, TX, NAS Corpus Christi, TX, Navy Weapons Systems Training Facility (NWSTF) Boardman, OR, and the Relocatable-Over-the-Horizon-Radar (ROTHR) facility near Chesapeake, VA are among the

Environmental planning for Navy training, testing and research at sea is an enormously complex challenge, involving large geographic areas, thousands of discrete actions, and covering long periods of time.

It's critical to the Navy mission that we complete these efforts on time, and we will.

—John Quinn, Deputy Director,  
OPNAV N45



Capt. Mark McLaughlin (left), commanding officer of NAS Kingsville, Texas, and John Quinn, deputy director of OPNAV N45, discuss an area near the base where energy developers are interested in building wind farms. The Navy is working closely with developers and local communities to find solutions that will allow renewable energy projects to move forward without impacting the Navy's mission.

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areas where alternative energy development has required recent mitigation efforts to protect the Navy's mission.

As part of its interagency involvement, TF CRS engaged with the National Ocean Council in 2011 to develop a Navy Coastal and Marine Spatial Guidebook to assist stakeholders in understanding Navy uses of the maritime environment.

In addition, in September 2011, Vice Admiral William Burke, then-deputy chief of naval operations for fleet readiness and logistics (N4) (now deputy chief of naval operations for warfare systems (N9)), issued interim guidance to assist commands in assessing and coordinating CRS issues. Navy efforts to sustain the capability of vital training and testing areas while supporting local, regional, and national energy and economic goals will continue in 2012.

### Value of Renewable Energy Projects

**THE NAVY RECOGNIZES** the value of renewable energy projects to local communities near naval installations, and supports such projects when they are compatible with vital training and testing activities. To ensure training and testing capacity is maintained, the Navy created Task Force Compatibility and Readiness Sustainment in April 2011. Members of the task force coordinate with the OSD Siting Clearinghouse and work with local entities (e.g., region, installation, community and industry representatives) to find solutions that allow energy projects to proceed without impacting the mission.

### A Holistic Approach to Environmental Planning

Since 2004, the Navy has been assessing potentially significant environmental impacts of military training and testing activities conducted in 14 Operational Areas (OPAREA) throughout the Atlantic and Pacific. This ongoing permitting process has completed long-range, comprehensive environmental impact statements (EIS) for such at-sea military activities as training, testing, and research.

The Navy's environmental planning and permitting is an ongoing, multi-phased process. Exercise and mitigation/monitoring reports must be submitted annually, and permits must be renewed regularly to protect the environment and ensure at-sea training and testing can continue.



The Navy is conducting environmental planning and permitting in the Atlantic and Hawaii-Southern California areas.  
MC3 Scott Pittman

without interruption. (Note: Permits for Navy at-sea training were typically renewed annually through January 2012. Beginning in February 2012, the National Marine Fisheries Service (NMFS) began issuing two to three year permits.) Phase I of the program,

focused on planning for at-sea training on ranges and OPAREAs, began in 2004. As of January 2012, Phase I permitting for all OPAREAs, except Silver Strand Training Complex in California, have been completed. The Navy anticipates Phase I for Silver

Strand Training Complex will be complete later this year.

Phase II, which analyzes broader geographic areas and additional types of training and testing activities, must be completed prior to expiration of Phase I permits, the first of which expires in January 2014. New planning, analyses, and consultations with NMFS will supplement information from Phase I. Phase II will include new effects analysis that incorporate standardized model input parameters such as type of environment, density of animal populations, sound source parameters, and projected locations of marine mammals in the water column to more closely reflect their natural dive profiles.

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## Navy Training, Testing and Operating Areas

A TOTAL OF 14 Navy training, testing and operating areas are undergoing permitting with NMFS as part of a long-term, phased environmental planning effort. The areas are located throughout the Atlantic and Pacific Oceans.

### Hawaii-Southern California Training & Testing

- Southern California EIS/OEIS
- Silver Strand Training Complex EIS
- Hawaii Islands Range Complex EIS/OEIS

### Northwest Training & Testing

- Naval Undersea Warfare Center Keyport Range Extension EIS/OEIS
- Northwest Training Range Complex EIS/OEIS

### Atlantic Training & Testing

- Atlantic Fleet Active Sonar Training EIS/OEIS
- Virginia Capes Range Complex EIS/OEIS

- Navy Cherry Point Range Complex EIS/OEIS
- Charleston/Jacksonville Range Complex EIS/OEIS
- Undersea Warfare Training Range EIS/OEIS
- Gulf of Mexico EIS/OEIS
- Naval Surface Warfare Center—Coastal Systems Station Panama City Range EIS/OEIS

### Gulf of Alaska Training & Testing

- Gulf of Alaska EIS/OEIS

### Mariana Islands Training & Testing

- Mariana Islands Range Complex EIS/OEIS



Dolphins swim in front of a rigid-hull inflatable boat as Sailors assigned to the guided-missile destroyer USS James E. Williams participate in a visit, board, search and seizure exercise. The Navy funds extensive marine mammal research, with the goal of minimizing the potential for training activities to affect marine mammals.

MC3 Daniel J. Meshel

The results of the marine mammal research program provide science-based data and technical capabilities that support the Navy's environmental compliance needs during operations at sea.

—Dr. Bob Gisiner, Operational Environmental Readiness and Planning Branch, OPNAV N45

sands of discrete actions, and covering long periods of time. It's critical to the Navy mission that we complete these efforts on time, and we will," said John Quinn, Deputy Director, OPNAV N45.

### Marine Mammal Research Progress

In 2011, the Navy directed nearly \$20 million towards research on marine mammal ecology and population dynamics; criteria and thresholds used to measure effects of Navy-generated sound on marine mammals; and improved technologies for monitoring and mitigating effects of underwater sound from naval activities. "The results of the marine mammal research program provide science-based data and technical capabilities that support the Navy's environmental compliance

needs during operations at sea," said Dr. Bob Gisiner, OPNAV N45 Operational Environmental Readiness and Planning Branch. Two of the dozens of projects are highlighted.

The Naval Undersea Warfare Center Newport has developed a hardware/software system known as Marine Mammal Monitoring on Ranges (M3R) for obtaining marine mammal data using existing instrumented range equipment. M3R marine mammal monitoring systems have been installed at the Atlantic Undersea Test and Evaluation Center (AUTECE) range in the Bahamas, the Southern California Offshore Range (SCORE) in southern California (SOCAL), and the Pacific Missile Range Facility (PMRF) in Hawaii. In 2011, collaboration with the Cascadia Research Collective has enabled the

Navy team to acoustically differentiate between rough-toothed and bottlenose dolphins, based on the structure of the animals' whistles. This monitoring is automated, enabling real-time monitoring of ranges without the addition of specially trained staff.

In a separate effort, Navy-funded researchers Dr. Ted Cranford (San Diego State University) and Dr. Petr Krysl (University of California San Diego) have been developing finite element models of marine mammal hearing anatomy. In 2011, they successfully constructed a model of the biosonar system in beaked whales, including additional modeling tools to simulate the effects of blast trauma. Information from these models will be used to develop more accurate, science-based estimates of the potential effects of naval training activities on marine life.

The ROD Toolkit will save time in completing reviews, help the public and regulators better understand cleanup response actions, and help us achieve new DoD goals for the program.

—Wanda Holmes, Installation Restoration/Oil Programs Lead, Afloat/Ashore Environmental Compliance Branch, OPNAV N45

(See “Rocket Science Unlocking Secrets of Cuvier’s Beaked Whale” in the spring 2010 issue of *Currents*.)

Since 2007, the Navy, NMFS, and partnering research organizations have conducted marine mammal research projects annually in and around the Navy’s SOCAL Range Complex. In 2011, the team conducted a large scale field study (“SOCAL 11”) involving controlled exposure experiments on species of wild, free-ranging marine mammals over several weeks in August and September. During the study, 38 tags were deployed, leading to successful controlled sound exposures with 18 individuals from three species of interest (blue

whale, Risso’s dolphin, and Cuvier’s beaked whale). Data from SOCAL 11 supports improved metrics of environmental risk from naval activities, as well as providing baseline information about marine mammal populations in areas where the Navy regularly trains and operates.

### Setting Sights on Site Closeout

The Navy made steady progress this year toward Department of Defense (DoD) Installation Restoration Program (IRP) and Munitions Response Program (MRP) goals. In fiscal year (FY) 2011, the Navy planned to achieve remedy-in-place (RIP) or response complete (RC) for 71 IRP sites containing hazardous substances or pollutants, but exceeded initial expectations and closed out 78 sites. Since the beginning of the program, the Navy has closed out nearly 3,400 sites. Under the MRP, which responds to unexploded ordnance and military munitions, the Navy reached RIP/RC at 131 sites (36 percent) of 361 sites.

Collaboration in 2011 between the Navy and U.S. Environmental Protection Agency (EPA) resulted in a toolkit designed to improve the quality and transparency of information presented in the publicly available record of decision (ROD) for installation restoration sites. The toolkit provides guidance for conveying information and describing selected remedies, ultimately making the process more cost effective and understandable. According to Wanda Holmes, Installation Restoration/Oil Programs Lead for OPNAV N45’s Afloat/Ashore Environmental Compliance Branch, “The ROD Toolkit will save time in completing reviews, help the public and regulators better understand cleanup response actions, and help us achieve new DoD goals for the program.”

DoD’s new Environmental Restoration (ER) Program goals are to achieve 90 percent RC by the end of FY 2018 and 95 percent RC by the end of FY 2021 for all sites in the program. These goals apply to all sites in the ER Program including IRP, MRP, and compliance cleanup (new sites that came into the program as a result of eliminating the 1986 eligibility cut-off date in December 2008).



The Navy’s MRP oversees investigations and remediation of unexploded ordnance and military munitions, which can pose environmental and human health and safety threats.

MC1 Sean Mulligan



Sailors replant grasses in a local marsh as part of an environmental restoration project. Projects such as these protect the health of local waterways.

*MC2 Roadell Hickman*

### The Navy's Environmental Restoration Program

THE NAVY IS responsible for managing sites with legacy hazardous materials (the Installation Restoration Program) and sites with munitions and explosives constituents (the Munitions Response Program). Together, these programs comprise the Navy's Environmental Restoration Program. The goal of the program is to achieve remedy in place (i.e., implement a technological or engineering solution to control the contamination) or response complete (i.e., meet all cleanup requirements specified in the site's decision document, issued by a state or federal regulatory agency) at all sites, which will protect human health and the environment and in many cases allow the cleaned properties to be used for other purposes.

### Energy & Environment in Acquisition

Meeting Secretary of Navy (SECNAV) Ray Mabus's energy goals and implementing DoD's Operational Energy Strategy are key responsibilities for the Navy. To meet those responsibilities, the Navy has committed to reforming its requirements-setting, acquisition, and

contracting processes to incorporate energy performance criteria into decisions for systems acquisition.

In June 2011, the Assistant Secretary of the Navy (ASN) (Research, Development & Acquisition (RDA)) issued a memorandum that provides guidance for platforms and weapon systems on the use of energy considerations in acquisition planning, analyses, development and competitive source selections. The memorandum requires acquisition plans to include a discussion of energy consumption in the Total Ownership Cost analysis, energy consideration in each step of the gate review process, and the feasibility of energy efficiency upgrades for major modernization of legacy programs. In September 2011, OPNAV N45 established the Navy Operational Energy in Acquisition Team (EN-ACQT) to ensure that energy-related factors are incorporated into decisions at all phases of system development and acquisition. EN-ACQT is modeled after the Navy Acquisition Environmental Readiness Integrated Product Team (ACQ-ER IPT), which was established to ensure environmental considerations are consistently incorporated into system development and acquisition decisions. OPNAV N45 also established a SharePoint site to support operations of each group and provide a working area for members to review, provide comments and participate in discussions regarding acquisition.

As we've done for environmental considerations in the past, the Navy is now developing and integrating energy efficiency considerations into key decision making processes for systems acquisition.

—Andy Del Collo, Branch Head, Financial, Administrative, Strategic Planning, Training, Acquisition and Research and Development Branch, OPNAV N45

“As we've done for environmental considerations in the past, the Navy is now developing and integrating energy efficiency considerations into key decision-making processes for systems acquisition,” said Andy Del Collo, Branch Head, Financial, Administrative, Strategic Planning, Training, Acquisition and Research and Development Branch, OPNAV N45.

EN-ACQT, ACQ-ER IPT, and OPNAV N45 will continue to provide acquisition tools as part of a comprehensive effort to position the Navy as a leader

in energy efficiency and environmental readiness.

### Ozone Depleting Substances Services Steering Committee

The Navy's Ozone Depleting Substances Services Steering Committee (ODS SSC), chaired by OPNAV N45, continued in 2011 to provide input to the United States' position in negotiations aimed at phasing down hydrofluorocarbon (HFC) production. DoD and the ODS SSC support a proposal by the United

States, Canada, and Mexico to regulate HFCs under the Montreal Protocol on Ozone Depleting Substances. However, HFCs are needed for critical military applications such as refrigeration and fire suppression aboard naval vessels, aircraft and other weapon systems. Use of HFCs for these purposes is necessary because no environmentally preferable alternatives exist that meet military requirements.

Working closely with the State Department, the ODS SSC assured that the final U.S. negotiating position



The USS North Carolina (SSN 777), the Navy's fourth Virginia-class submarine, is rolled out from a modular outfitting facility during construction. New acquisition rules require naval vessels and weapon systems to be developed with energy considerations in mind, from initial design through final disposal.

John Whalen



The Navy uses Compressed Natural Gas to fuel some non-tactical vehicles. This helps reduce emissions compared with traditional liquid petroleum fuels.

*MCS Scott Pittman*

included language that would allow a minimum level of HFC production to continue for military mission critical applications. DoD invested over \$3 billion to find and implement alternatives to ozone depleting substances over the past 20 years, with the majority of this investment going toward HFCs. (Note: The \$3 billion estimate was contained in the 1995 DoD Ozone-Depleting Substance Reduction Program Report to Congress.) While HFCs are greenhouse gases, they actually have lower global warming potentials than the ozone depleting substances (ODS) they replaced.

Although the proposed HFC amendment failed to pass at the 2011 Montreal Protocol Meeting in Bali, the ODS SSC will continue to work

with the State Department and EPA as they negotiate with the international community on this issue to address the mounting threat of global climate change.

### Clean Air Act Services Steering Committee

The Clean Air Act Services Steering Committee (CAA SSC), also chaired by OPNAV N45, continued to provide leadership on CAA issues for DoD in 2011. The committee reviewed more than 30 draft and proposed CAA regulations to identify potential impacts to DoD operations. In recent years, the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial and Institutional Boilers and Process Heaters for both major and area sources; and the

Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources, Commercial and Industrial Solid Waste Incineration Units, have been among the major regulations the CAA SSC has been tracking.

In 2011, the CAA SSC was involved in an interagency review of a proposed reconsideration of these rules, coordinated by the Office of Management and Budget. CAA SSC recommended allowing intermittent-use boilers (which EPA defines as “limited use units”) on major source permits to be defined by operational hours or heat input. To avoid a compliance deadline taking effect before EPA takes final action on the proposal, CAA SSC also recommended temporarily delaying implementation of the area source rule.

Sharing information about our environmental and energy successes—during special events and online—helps people who care about the Navy understand how serious we are about these issues, and empowers them to inform others.

—Kenneth Hess, Environmental Lead,  
Communication and Outreach Branch, OPNAV N45

The CAA SSC was also actively involved in emission factor development efforts for unique military sources. Emission factors are used to estimate emissions for determining compliance with CAA standards. The committee submitted comments on EPA's draft *Guidance on the Recommended Procedures for Development of Emissions Factors*. Many of the comments addressed issues pertaining to evaluating the quality of data received to support emission factor development. The CAA SSC also developed a standard process for reviewing and commenting on emission factors developed by DoD services and agencies for military-unique equipment in cases where the emission factors are intended for publication in regulatory documents. The process was approved by DASN (Environment) in November 2011 and has since been used to coordinate the review of several test plans and reports.

### Air Shows, Classrooms, & Social Media— Making the Message Heard

Informing the public about the Navy's environmental and energy-related accomplishments remained a high priority

in 2011. Commands hosted exhibits, delivered educational presentations, and participated in activities highlighting the Navy's focus on protecting natural resources, recycling, reducing energy use, and incorporating alternative energy sources ashore and afloat.

Nearly 50 commands participated in Earth Day events in 2011, such as community tree plantings, recycling drives, and beach cleanups. U.S. Fleet Forces Command (USFF) ramped up its environmental outreach program this year, giving environmental talks to approximately 12,000 schoolchildren, and distributing outreach materials such as *Currents* magazines, posters, and coloring books. OPNAV N45 and supporting commands, including the Naval Air Systems Command (NAVAIR), Naval Sea Systems Command, Naval Facilities Engineering Command (NAVFAC) Mid Atlantic, and local installations hosted additional Navy environmental and energy exhibits at air shows, Fleet Weeks, and other events that attracted more than 200,000 people. Navy environment/energy booth personnel handed out over 25,000 outreach materials at these events.



Families learn about the Navy's environmental and energy programs during the NAS Patuxent River Air Show.

Kenneth Hess

“Sharing information about our environmental and energy successes—during special events and online—helps people who care about the Navy understand how serious we are about these issues, and empowers them to inform others,” said Kenneth Hess, Environmental Lead, Communication and Outreach Branch, OPNAV N45.

Among the highest profile outreach opportunities of 2011 was the NAS Patuxent River Air Show, 2-4 September, where all six Blue Angels flew on a 50/50 blend of camelina-based biofuel and conventional jet fuel. Navy outreach personnel and NAVAIR fuel scientists were interviewed by Southern Maryland radio station WSMD, demonstrated hands-on biofuel displays, and provided photo opportunities with naval aircraft—the Green Hornet (F/A-18 Super Hornet), MH-60S Seahawk, and T-45



Installations around the world participate in Earth Day activities and often invite local communities to participate.

MC1 Jay C. Pugh

Goshawk—that have all flown on a biofuel blend. Remarks at the event by Secretary Ray Mabus emphasized that energy efficiency and alternative fuel initiatives clearly have an environmental benefit, but that the Department’s primary purpose in pursuing them is to improve warfighting capability.

### Moving Out on Social Media

The Navy enhanced its online environment/energy presence on social media platforms in 2011, including the Naval Energy Facebook and Twitter pages, the *Currents* magazine Facebook, Twitter, and Flickr pages, and the Navy Energy and Environment YouTube channel.

### Stay Connected Online

**TO LEARN MORE** about the Navy’s environmental accomplishments, visit us at [www.greenfleet.dodlive.mil](http://www.greenfleet.dodlive.mil), or “like” us on Facebook at <http://facebook.com/navycurrents> and <http://facebook.com/naalenergy>. And don’t forget to look for the Navy’s energy and environmental exhibit during Fleet Weeks, air shows, and other events.

Facebook users alone increased nearly 94 percent for both Facebook pages.

So far in 2012, the Navy continues to focus on achieving compliance goals for cleanup and munitions response, obtaining permits for at-sea training and testing, funding marine mammal research, ensuring our continued ability to train and operate ashore while minimizing impacts from local energy projects, and improving the effectiveness of outreach activities. As the Navy team makes solid progress toward SECNAV’s ambitious energy goals and remains responsive to emerging requirements, these environment-oriented programs—and the dedicated professionals who run them—deserve a tip of the hat for all they do to support the Navy’s mission and protect the global ecosystem we all share. 🌱

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### CONTACTS

Kenneth Hess  
 Chief of Naval Operations  
 Energy and Environmental Readiness Division  
 703-695-5077  
 DSN: 225-5077  
[kenneth.hess@navy.mil](mailto:kenneth.hess@navy.mil)

Andrea Lamartin  
 URS Corporation  
 703-418-3017  
[andrea.lamartin@urs.com](mailto:andrea.lamartin@urs.com)