Dolphins play in the wake of the forward-deployed amphibious dock landing ship USS Tortuga (LSD 46) during Balikatan 2012, an annual bilateral exercise designed to improve interoperability between the U.S. Navy, Marines and Armed Forces of the Philippines.

MC2 Eric Crosby

U.S. Fleet Forces Command and U.S. Pacific Fleet Coordinate Their Efforts to Maintain Compliance for At-Sea Training and Testing

IN **THE SPOTLIGHT** for this issue of *Currents* is Larry Foster, division director of the Fleet Environmental Readiness Division for Commander, U.S. Pacific Fleet (PACFLT), and Gary Edw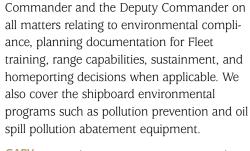ards, division director for the Environmental Readiness Division for U.S. Fleet Forces Command (USFF). On 14 May 2012, Kenneth Hess from the public affairs staff at the Chief of Naval Operations Energy and Environmental Readiness Division (N45) and Bruce McCaffrey, managing editor of *Currents* magazine, conducted this interview to gain insights into the Navy's efforts to ensure continuous compliance during testing and training activities.

CURRENTS: Thanks for taking the time to speak with us today gentlemen. Could you describe your current roles?
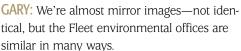
> We're almost mirror images—not identical, but the Fleet environmental offices are similar in many ways.
>
> *—Gary Edwards*

Larry Foster.

LARRY: We serve as principal advisors to the Commander and the Deputy Commander on all matters relating to environmental compliance, planning documentation for Fleet training, range capabilities, sustainment, and homeporting decisions when applicable. We also cover the shipboard environmental programs such as pollution prevention and oil spill pollution abatement equipment.

GARY: We're almost mirror images—not identical, but the Fleet environmental offices are similar in many ways.

CURRENTS: Talk for a moment about how you and your staff interface with the Navy warfighter and operator community.

Gary Edwards.

GARY: We directly and regularly communicate with Fleet operational commands, whether they're the Type Commanders, or Strike Group Training and Commander Task Force TWO ZERO (CTF 20). (Note: CTF 20 plans, supports, schedules and conducts training and exercises of assigned maritime forces and provides combat-ready naval forces to support Service missions and global requirements.) We've merged Second Fleet into USFF, and have direct communication with them on a regular basis. We're able to look ahead to their training evolutions and plans over the next 18 to 24 months, and work with them to make sure we can meet their requirements and provide environmental coverage. We also have military officers embedded in the environmental division, and part of their job is to work with the training community and ensure there is a linkage, so we understand what's going on in the operational world and the operators understand what's going on in the environmental world. That helps tremendously as we work to support training requirements.

> It's the balance between protecting the environment and ensuring our Sailors are trained.
>
> *—Larry Foster*

LARRY: Our Third Fleet and Seventh Fleet haven't merged into our staff. They're still stand-alone three-star commands reporting to PACFLT. But we work very closely with them on exercise planning and training. We're part of the numbered Fleet planning conferences for major exercises. We ensure that they have the requisite environmental compliance coverage, and permits if required. It is part of our environmental planning process to ensure they can go out and do what they need to do to meet their requirements. Several years ago, we stood up what's now called the PACFLT operational and environmental team. It meets regularly, typically every other week, to discuss operational and environmental issues and where they overlap.

GARY: Both of the Fleets also have dedicated groups that work directly with the operational community and the ranges on day-to-day requirements. It's called the Range

Complex Support Team for USFF, and Larry's is called the Range Complex Sustainment Coordinators. These groups help us identify daily requirements and maintain that linkage.

CURRENTS: Talk to us about the Navy's environmental planning and permitting process for training and testing. What are we really trying to accomplish?

LARRY: Bottom line, we have to go through the planning and permitting process to comply with the National Environmental Policy Act (NEPA), the Marine Mammal Protection Act (MMPA) and other laws. But we still have to maintain, train and equip our combat forces as needed. It's the balance between protecting the environment and ensuring our Sailors are trained.

Sailors aboard guided-missile destroyer USS Paul Hamilton (DDG 60) conduct a morning brief during integrated maritime exercise Koa Kai 12-2. Koa Kai is a semiannual exercise in the waters around Hawaii designed to prepare independent deployers in multiple warfare areas and provide training in a multi-ship environment.
MC2 Daniel Barker

According to MMPA rules, permits are issued by the National Marine Fisheries Service (NMFS), and they're good for five years. We're on a five-year cycle with the permits and environmental impact statements (EIS), and the concept here is to get the next round of NEPA documents completed in time for our expiring permits—the first of which will come due in January 2014. We're on track to meet those deadlines.

CURRENTS: How is NMFS involved in this process? Are other federal or state agencies involved?

GARY: NMFS is a cooperating agency with us in the development of Hawaii-Southern California Training and Testing (HSTT) and Atlantic Fleet Training and Testing (AFTT) EISs. They provide technical expertise and regulatory oversight of the potential environmental impacts of Navy testing and training. Our expectation is that NMFS will ultimately adopt Navy documentation in their rule-making process. So it's critical that they be directly involved in the development of the documentation, not only from a regulatory standpoint, but also to address any challenges that arise. They are the ones that give us the permits, so they have to be able to support the documentation that is prepared. We are also consulting with the U.S. Fish and Wildlife Service (USFWS) to address endangered species under their jurisdiction. For AFTT we work with the states up and down the East Coast and through the Gulf of Mexico to comply with the Coastal Zone Management Act and other applicable state laws.

LARRY: Everything is almost identical here for the PACFLT range complexes. We are also starting environmental planning for two additional areas—the Marianas and Pacific Northwest. In our case, we also are consulting with USFWS as needed for species under their jurisdiction. The Pacific Northwest regional Fish and Wildlife office has asked to be a cooperating agency, so that's a first for us. We are also including NMFS staff at our upcoming public meetings in Hawaii and Southern California for HSTT.

CURRENTS: I understand that we first started this process back in 2001, after the Navy's at-sea environmental compliance policy was promulgated (Compliance with Environmental Requirements in the Conduct of Naval Exercises or Training At Sea, 28 December 2000). I believe that policy was the driver that led us to start the cycle of EISs for our at-sea training. Could you talk about that process (Phase 1), and what we learned from it?

LARRY: We had started looking, even before that policy, at doing what we used to call environmental compliance evaluations at our land-based ranges, which turned into our Range Sustainability Environmental Program Assess-

ment (RSEPA) program. This was before 2000. But when the at-sea policy came out, it was a perfect driver. It gave us a high-level directive to develop those Phase 1 comprehensive programmatic documents for our Fleet at-sea training ranges. We had some environmental coverage for our land-based ranges, and even out in Guam in the Marianas. We had completed the Marianas Training Plan EIS, again primarily for Farallon De Medinilla, not so much the ocean side, so when the at-sea policy came out it led us into Phase 1 and the Program Objectives Memorandum (POM) process.

The Virginia-class attack submarine Pre-Commissioning Unit Mississippi (SSN 782) conducts alpha trials in the Atlantic Ocean.
Courtesy of General Dynamics Electric Boat

GARY: I think it's important to understand that we didn't just start doing environmental documentation in the Fleets because of the at-sea policy or the Bahamas stranding. Those did affect what we were doing and the way we were doing it. But on the East Coast, we had been preparing environmental documentation at Vieques since the 1980s. And that covered at-sea environmental documentation as well, so the Fleet was already preparing at-sea environmental documentation when I arrived here in 1991.

The big switch was when we shifted from doing a qualitative to a quantitative analysis, where we started to input modeling into the process as we got into Phase 1. That came from the at-sea policy. We had to do more documentation up and down the East Coast when we moved out of Vieques for training. And we also had to find ways to cover training at the Cherry Point, Jacksonville and Virginia Capes (VACAPES) operational areas.

CURRENTS: Speak to the lessons learned from Phase 1, if you would.

LARRY: One of the key lessons we learned was that the operational interface piece is critical—although I thought we did a pretty good job in Phase 1. During our work on the Phase 2 documentation we interfaced much more regularly and closely with the operational community, identifying

> ## Let's figure out what we might need in the long-term and get full coverage for anything that could come along.
> *—Gary Edwards*

their training requirements. We also learned that we need to put more flexibility and coverage into our documents. Obviously they are much more complex and robust, and what we cover is significantly more than what we covered in Phase 1. As you know Phase 2 includes the systems commands (SYSCOM) as well. We're merging more geographic areas into our larger stand-alone documents.

GARY: We need to have early and ongoing communication with NMFS and other agencies we work with. If they understand what we're trying to do, they are better prepared to defend it. And we will learn what they can support and what they need to have modified before they can support it. That's been helpful for Phase 2. We've also learned that we need to work closely with our Navy commands and our operators earlier in the process and focus on future training requirements.

In Phase 1, the Fleets were focused on "Let's get the coverage for what we're doing today." We weren't really thinking about everything we needed to do through 2014. We got hamstrung in a couple of areas where the Navy made a decision to cap the number of takes we requested for our permits. In some cases, that resulted in having to cut back on or stop certain types of training altogether because we didn't get the coverage we needed for everything we'd be doing through 2014. So for Phase 2, we're much more focused on, "Let's figure out what we might need in the long-term and get full coverage for anything that could come along."

An E-2C Hawkeye lands on the flight deck aboard the Nimitz-class aircraft carrier USS Carl Vinson (CVN 70) during the Malabar Exercise with ships and aircraft from the Indian Navy.
MC Apprentice Andrew Haller

CURRENTS: How do you estimate what your future training requirements are going to be?

GARY: There are a couple of things we learned in Phase 1 and have integrated into Phase 2. We have a better process of working with the operators to truly define their requirements. We have what we call the Warrior Review Process, where we get together and go through what they might need to do over the next six or seven years. (For more insights, see our sidebar entitled "The Basics About the USFF Warrior Review Process.) We need to make sure we get those requirements covered. We're working with the acquisition community and the Type Commanders about what's coming down the line. We're better focused, plus we've asked for flag-level validation of the require-

ments as they've been developed in this process. So we have a much better handle on what our requirements will be long-term than we did for Phase 1.

CURRENTS: Any last words on that particular topic?

LARRY: Just as we're getting a better understanding of their needs, I think the Navy training community and the operators now have a better understanding of what they need to do to enable the environmental team to help them succeed. There's more awareness of what's going on and the need to help interface with us. For instance, prior to the Rim of the Pacific (RIMPAC) exercise in 2006, a temporary restraining order was issued which caused us to stop the exercise. We were able to get that order lifted pretty quickly, but it took a couple of days. Then here at the Hawaii Range Complex (HRC) in 2010, NMFS wasn't able to process our annual renewal in time. So the Deputy Chief of Naval Operations (N3) issued a message to cease the use of sonar and explosives for training. So the operational community is well aware of the link between our permitting requirements and their ability to train.

CURRENTS: What are the differences between Phase 1 and Phase 2 environmental planning efforts, and what led us to make those changes?

An F/A-18C Hornet prepares to launch from USS Dwight D. Eisenhower (CVN 69) during a composite training unit exercise in the Atlantic Ocean.
MC1 Nathanael Miller

LARRY: Phase 1 was our initial effort at completing large-scale at-sea environmental planning, focusing on MMPA/Endangered Species Act (ESA) compliance. Phase 1 was focused on training. Phase 2 incorporates not only Fleet training, but also SYSCOM testing. Another big difference in PACFLT is that we didn't cover pierside sonar maintenance and testing in Phase 1. We're including that this time. The reasons for all this are to improve efficiency. By consolidating, we're creating fewer documents, and the

The Basics About the USFF Warrior Review Process

U.S. FLEET FORCES Command (USFF) developed and implemented a "warrior review process" to prepare accurate and comprehensive at-sea training data for analysis in the Atlantic Fleet Testing and Training Environmental Impact Statement/Overseas Environmental Impact Statement (AFTT EIS/OEIS). In the summer of 2010, USFF initiated an extensive data collection effort to compile a list of all current and future off-shore training expected to occur during the permit renewal period of 2014-2019. Working with training subject matter experts from Naval Surface Forces Atlantic, Naval Air Forces Atlantic, Naval Submarines Forces Atlantic, Navy Expeditionary Combat Command, Strike Force Training Atlantic, Naval Mine and Anti-Submarine Warfare Command detachment Norfolk and U.S. Marine Corps Forces Command, USFF compiled a spreadsheet of future training requirements broken down by primary mission areas. This process resulted in the development of a "warrior matrix" that includes the type and number of events to be conducted, platforms, training locations, type and amount of ordnance, targets, sonar hours, flight hours, and additional information needed to inform environmental planning documentation and preparation of permit applications. Information within the warrior matrix was then vetted back through each command and validated at the Flag Officer level, thus providing accurate and complete training requirements for the AFTT Draft EIS/OEIS.

permitting process is simplified. For NMFS, it reduces their workload and the number of documents they have to process. Another thing we're incorporating in Phase 2 is a binning approach, where we establish bins (categories) for our acoustics and explosives sources. That way, if we have a new system, platform, training or test event that we didn't cover specifically, and if it's similar enough to fit in one of the bins, we don't have to modify permits. This is the flexibility we mentioned earlier.

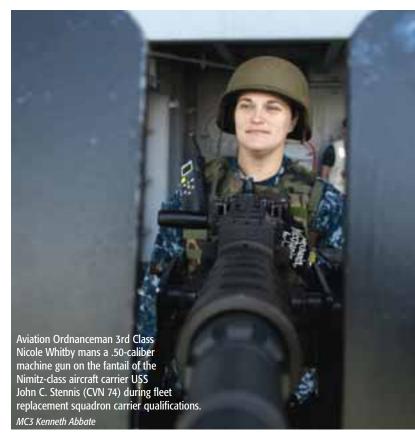> The operational community is well aware of the link between our permitting requirements and their ability to train.
>
> —Larry Foster

GARY: Along with a specific sonar document for Atlantic Fleet Active Sonar Training, we've moved from preparing multiple EISs for Cherry Point, Jacksonville, the Gulf of Mexico, VACAPES and an environmental assessment for Key West training to a single, broad-based document for the East Coast. We're working with PACFLT on the way we develop and coordinate requirements for AFTT and HSTT. So our Phase 2 draft EIS is a more comprehensive product. In Phase 1, there were two different acoustic effects models used to estimate effects on marine mammals. Now one consistent model is being used across the Navy. We have a better understanding of how to determine what's coming over the long term and get validation of those requirements from both the acquisition community and through our training folks to better understand what we need to obtain permits for. We're giving the Navy the compliance documentation it needs across all lines.

We've got to be able to build flexibility into our process. There were a couple of things we didn't completely understand in Phase I. Maybe it was just a breakdown in communication between the operational community and the environmental community where we felt we were providing coverage for certain training requirements, and then NMFS looks at it and says, "Whoa, that's not covered here." So we had to go back and redo some coverage for certain types of training and suspend some activities until we got that coverage in place. We have to be able to better define what we're doing, and I think we're doing that in

Phase 2. We're also analyzing new sound sources, and are looking at increased sonar training and testing this time.

CURRENTS: Are there significant differences in the Navy's environmental planning approach for the East Coast versus the West Coast and Hawaii?

Aviation Ordnanceman 3rd Class Nicole Whitby mans a .50-caliber machine gun on the fantail of the Nimitz-class aircraft carrier USS John C. Stennis (CVN 74) during fleet replacement squadron carrier qualifications.
MC3 Kenneth Abbate

GARY: There are no differences. Our goal is to ensure consistency between Fleet planning efforts and to work together to present a clear story to the public. The collaborative approach among the Fleets, our supporting commands and everyone else we've been working with has been to develop and apply the robust analysis we need to present a clear picture of our training and testing. We're working off of the same talent pool. It's a broad Navy team now working on both documents together, and we're doing this consistently across both Fleets.

LARRY: Along that consistency theme, we briefed the chain of command up through the Secretary of the Navy (SECNAV) on both documents prior to their release. It was a joint brief for both AFTT and HSTT done by the team. Jene Nissen from USFF provided the SECNAV brief. We were aligned all the way up, and our approach is identical.

CURRENTS: Larry, you briefed them on the documents in progress, correct? And they're still under development.

LARRY: Absolutely. The joint brief was on the public release to get approval to release the draft EISs. We publish notices in the Federal Register to let the public know of their availability. Over the next year or so, we will be holding meetings and collecting comments from the public. We will also gather comments from the regulatory community and input from other federal agencies. All of this will be folded into final versions of our EISs.

CURRENTS: Are we increasing the geographic areas in which we train and test?

LARRY: We are increasing the HSTT study area slightly so it aligns with the International Date Line. And we added a notional corridor between San Diego and Pearl Harbor, which our ships transit along on their way toward the Western Pacific. So we included some coverage for that transit corridor.

GARY: For Fleet Forces, we're now covering an additional 30 percent or so by area. We're going north to the Arctic

An F/A-18C Hornet lands aboard the aircraft carrier USS Dwight D. Eisenhower (CVN 69) during a composite training unit exercise in the Atlantic Ocean.
MC1 Nathanael Miller

Circle and south to include the Gulf of Mexico and the northern edge of the Caribbean Sea. We did not go any farther east.

CURRENTS: It sounds like we're estimating a lot more marine mammal takes in Phase 2. First, for readers who may not be as familiar with these terms, what is meant by a marine mammal take?

A "Take" By Any Other Name

Basic Definitions

The Endangered Species Act (ESA) defines the term "take" as follows: "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

The Marine Mammal Protection Act (MMPA) includes a similar definition of "take": "to harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect." For a military readiness or scientific research activity conducted by or on behalf of the Federal government, the MMPA (as modified under the National Defense Authorization Act (NDAA) of 2004) further defines harassment as follows:

- **(Level A Harassment)**

  Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild; or

- **(Level B Harassment)**

  Any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, surfacing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered.

Incidental Takes

In 1981, Congress amended the MMPA to provide for "incidental take" authorizations for maritime activities, provided the National Marine Fisheries Service (NMFS) found the takings would be of small numbers and have no more than a negligible impact on those marine mammal species not listed as depleted under the MMPA (i.e., listed under the ESA) and not having an "unmitigatable adverse impact" on subsistence harvests of these species. NMFS defined "negligible impact" as "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates or recruitment or survival." The NDAA of 2004 modified the MMPA by removing the "small numbers" and "specified geographic region" limitations. "Incidental take" authorizations, also known as Letters of Authorization (LOA), require that regulations be promulgated and published in the Federal Register.

Sources: www.nmfs.noaa.gov and www.epa.gov/lawsregs/laws/esa.html

GARY: The term take means there has been some type of effect to an animal. These effects can range from a behavioral reaction to injury or mortality. For example, a marine mammal hears a noise, turns his head to see where the noise came from, then goes back to the activity it was doing—this is considered a take. Almost all takes associated with Navy activities are behavioral reactions.

LARRY: An example we use is this: a sea lion is sitting on a channel marker or a buoy, a vessel passes by, and he's mildly disturbed so he jumps back in the water and hauls back out again. That's considered a take.

> Although we are estimating more takes, we do not anticipate any more harmful effects on marine life.
>
> *—Larry Foster*

higher and the criteria for the low-level behavioral takes have been lowered. So the predicted takes are higher than they were for Phase 1. We also have more sound sources reflected in our draft Phase 2 documentation, since the SYSCOMs have been added. I think we have gone from about 30 to 300 sources.

Sailors heave mooring lines on the fantail of the aircraft carrier USS John C. Stennis (CVN 74) after successfully completing fleet replacement squadron carrier qualifications.
MC3 Kenneth Abbate

CURRENTS: Why are we requesting more marine mammal takes in Phase 2? Do we anticipate more effects on marine life?

LARRY: We are not expecting more of an effect on the animals. But yes, there are more estimated takes. There are several reasons for that. We are using a more conservative model than we used for Phase 1. Again, it's a single Navy model—the Navy Acoustic Effects Model (NAEMO). (For more information about NAEMO, read our sidebar entitled "The Latest About NAEMO." You can also read our article entitled "Environment in a (High-Tech) Box: Navy Model Simulates Undersea Sound Fields & Marine Mammal Locations to Plan Training & Testing Activities" in the winter 2011 issue of *Currents*. To subscribe and browse the magazine's archives, visit the *Currents* page on the Department of the Navy's Energy, Environment and Climate Change web site at http://greenfleet.dodlive.mil/currents-magazine.)

We're using better science with updated marine mammal density estimates. The densities for some animals are

Remember, these numbers do not reflect the positive impacts of any mitigation. Once we implement our various mitigation measures, we expect those take estimates to go down. So although we are estimating more takes, we do not anticipate any more harmful effects on marine life. There's been no history that we are impacting marine life with our permitted activities, especially across a general population of marine mammals. We'll have an individual take every now and then, but have no impact on the general population.

GARY: Our increase in takes is mostly based on adding SYSCOM testing (almost doubling the number of takes for AFTT). Also, on the Atlantic Fleet side we are approximately doubling the training analyzed, however, this only results in a 10 percent increase in takes.

CURRENTS: How many ship shock trials will we do, and what will the impact be on the environment?

GARY: I think the Navy plans to conduct four ship shock trials over the five year period. (Note: The Navy has been

relying on ship shock trials for many decades to ensure that newly designed ships can withstand the rigors of war. Ship shock trials involve the detonation of explosive charges near the ship, along with a detailed analysis and evaluation of the effects of that detonation on the ship.) Because of the charge size and potential for harm to protected species, we implement very extensive mitigation measures, including aerial and vessel-based surveys to maximize the probability that protected species are not present in the possible harm zone. These measures have been effective in previous tests. The models come up with a number, but again that's not what we expect to actually occur because we implement extensive mitigation—particularly for shock trials—which gets us very close if not actually to nil on impacts to marine mammals.

LARRY: Ship shock trials are conducted by the Naval Sea Systems Command, and all occur on the East Coast. And no marine mammals were harmed during any of them. Our mitigation measures are very, very effective.

CURRENTS: What are we doing to avoid harming marine mammals during our training and testing?

Sailors prepare to do the final checks before launching an F/A-18F Super Hornet aboard the aircraft carrier USS Dwight D. Eisenhower (CVN 69) during a composite training unit exercise in the Atlantic Ocean.
MC3 A.J. Jones

LARRY: We're implementing protective measures such as posting trained lookouts and reducing sonar levels when animals close within certain distances. That's the power down scheme—at 1,000 yards we power down by six decibels. If an animal is sighted within 500 yards of a vessel using mid-frequency sonar, we power down an additional four decibels. If the animal closes within 200 yards, we turn off the sonar. We also use passive listening devices to listen

The Latest About NAEMO

THE NAVY ACOUSTIC Effects Model (NAEMO) is the Navy's latest and most sophisticated approach for analyzing the effects of proposed actions on marine mammals. NAEMO was developed by personnel from the Naval Undersea Warfare Center in Newport, Rhode Island and is comprised of seven basic components:

1. Scenario Builder
2. Environment Builder
3. Acoustic Builder
4. Marine Mammal Distribution
5. Scenario Simulator
6. Post Processor
7. Report Generator

The first two units are Graphic User Interface (GUI) modules that define where and when an activity is taking place, and factor in oceanographic environmental data based on these inputs.

The Acoustic Builder uses this information to assist the user in defining a set of acoustic propagation analysis points. The Marine Mammal Distribution module creates a GUI three-dimensional field of marine mammals, by species and by season (when available), for the specific geographic region.

The Scenario Simulator module executes the simulation. Some scenarios are broken down by platform (e.g., ship, submarine, helicopter, other source), while others involve multiple platforms. The Post Processor computes the estimated exposures of marine mammals by species based upon the entire scenario, which may include several weeks of daily training operations. Users may introduce changes to the harassment criteria or sound sources within a scenario without having to re-run the entire simulation.

Finally, the Report Generator provides a mechanism for assembling all of the individual species exposure data files created by Post Processor and computing annual exposure estimates.

for vocalizing marine mammals. We require that all of our lookouts view the Marine Species Awareness Training video, which was approved by NMFS, prior to being assigned as a lookout during active sonar training.

On the research and development side, the Navy funds about $20 million in marine species research every year to help us better understand the impacts of our activities. For the explosive events, we worked with NMFS to establish zones that are clear of marine mammals before our explosive teams conduct underwater demolition training.

> We implement extensive mitigation, which gets us very close if not actually to nil on impacts to marine mammals.
>
> *—Gary Edwards*

CURRENTS: How do we determine whether our protective/mitigation measures are effective? And how do we interact with NMFS in this regard?

GARY: We work with NMFS to develop and implement a comprehensive monitoring program. In Phase 1, we began monitoring representative training events with contract support, academia, and Navy marine biologists to determine reactions of any animals sighted during major training events. We then collect and evaluate the marine mammal sighting data. We have commissioned new scientific efforts to collect marine resource data outside of those scheduled events, such our Behavioral Response

Studies. We provide data on our training activities to NMFS via our annual reports. We review these data as well as any other scientific developments annually with NMFS to determine if we need to make any changes to our mitigation measures. That's part of our ongoing Adaptive Management Process (AMP).

CURRENTS: So it's possible, based on data that you collect or feedback that you get from NMFS, for NMFS to suggest that we need to take additional measures?

Guided-missile frigate USS Vandegrift (FFG 48) performs maneuvers off the coast of Hawaii during integrated maritime exercise Koa Kai 12-2.
MC2 Daniel Barker

GARY: Yes. It's also possible we could determine that some measures that we're implementing now add no value, and we would stop doing those.

CURRENTS: Has that happened in either case?

LARRY: One of the things we did was to shift our aerial surveys during RIMPAC. The exercise is so complex and large, with so many aircraft and ships underway, that getting our contractor aircraft in the air to safely conduct visual

The Basics About the Navy's Marine Mammal Mitigation Measures

THE NAVY EMPLOYS 29 measures to minimize contact with marine mammals while training with active sonar. These measures include the following:

1. Marine mammal awareness training for key shipboard personnel

2. Multiple lookouts aboard sonar-equipped ships during exercises

3. Special operating procedures, including safety zones for reducing power or shutting off sonar at specified distances from marine mammals

4. Coordination and reporting requirements for marine mammal strandings, beachings, mortalities or unusual behavior

The measures were developed in cooperation with the National Marine Fisheries Service, the regulatory agency that oversees the protection of marine life for U.S. entities. In addition, the Navy funds about half of the marine mammal research conducted world-wide. Much of the over $20 million that the Navy spends annually goes toward studying the effects of sound on marine life.

surveys for marine mammals before, during and after the exercise was problematic. So during the adaptive management meeting with NMFS we explained that difficulty and we shifted away from aerial surveys during major training events like a RIMPAC to our Submarine Commanders Course (SCC). SCC is a much smaller event, but still allows us to collect monitoring data and work with NMFS in determining the effectiveness of our mitigation. So there's an example of our shifting the priority while working with NMFS. Another one I mentioned is underwater detonation training. We worked with NMFS over the course of a year and did just that. We increased our mitigation and monitoring areas to support underwater detonation training.

CURRENTS: What else can you tell us about the AMP?

LARRY: The AMP is part of our permit. As such, we are required to hold an annual meeting with NMFS to review our mitigation measures. We've been meeting in October of every year since the permit was issued. Dr. Frank Stone (OPNAV N45) coordinates that meeting. We bring our teams to Washington to meet with NMFS and review the past year's efforts. We incorporate lessons learned and any other input from the scientific community to move our monitoring and mitigation programs forward. We want to ensure that we're doing the best we can to protect the marine environment. (For more insights into AMP, read our sidebar entitled "The Basics About the Adaptive Management Process.")

CURRENTS: What is the Navy's timeline for completion of these projects? And what's next?

An F/A-18F Super Hornet lands on the flight deck of USS Dwight D. Eisenhower (CVN 69) during a composite training unit exercise in the Atlantic Ocean.
MC2 Julia Casper

GARY: We need to have the AFTT and HSTT EISs, as well as the ESA and MMPA compliance permits, in place by late calendar year 2013 to ensure that our authorizations remain current. Our existing MMPA authorizations expire in January 2014. Following release of the draft EISs that were announced in the Federal Register on 11 May 2012, we are allowing for a 60-day public comment period, versus the minimum required 45-day public comment period. The public comment periods for both AFTT and HSTT end on 10 July. We want to make sure the public has ample time to provide their comments. We are on a very tight timeline to complete these documents so our training authorizations do not expire. That is the primary goal and driver for the Fleets—to get our authorizations in place prior to expiration of our current permits beginning in January 2014.

The Basics About the Adaptive Management Process

AS REQUIRED UNDER Marine Mammal Protection Act (MMPA), the Navy is responsible for monitoring and reporting on activities involving active sonar and/or detonations from underwater explosives. The Integrated Comprehensive Monitoring Program (ICMP) provides the overarching framework for coordination of the Navy's monitoring program. The ICMP is evaluated annually through an Adaptive Management Review (AMR), during which the Navy and the National Marine Fisheries Service (NMFS) jointly consider the prior year goals, monitoring results, and related science advances to determine if modifications are needed to more effectively address monitoring program goals. The results of the AMR will determine whether (and under what conditions) NMFS will renew the Navy's Letter of Authorization for the coming year.

In 2011, a Monitoring Workshop was added to the AMR to review cumulative monitoring results from 2009 and 2010. The workshop included marine mammal and acoustics experts and other interested parties. The primary objective of the workshop was to develop a framework for evaluating all Navy range complexes under the ICMP and to formulate objective, expert scientific recommendations for addressing top-level goals of the ICMP.

Sources: www.nmfs.noaa.gov.pr/pdfs/permits/ socal_hrc_icmp.pdf and www.cascadiaresearch.org

CURRENTS: So after all of this is done, is there a Phase 3?

LARRY: In Phase 2 we still have other documents to complete, including documentation for the Marianas, the Northwest, and the Gulf of Alaska. But yes, there will be a Phase 3. Our plan would be to supplement the current EISs should things be consistent and not require significant changes. This assumes that NMFS is willing to agree to such an approach. We'd like to be able to supplement our Phase 2 EISs and not have to generate entirely new documents for Phase 3 and beyond.

> There has been unprecedented and excellent cooperation among Navy commands to produce these comprehensive documents.
>
> —*Gary Edwards*

GARY: There will be a Phase 3, and probably a Phase 4 and 5 after that. We're on a five-year re-authorization cycle and until that cycle changes, we will revisit our documentation according to that schedule. How we do it may change, but we still have to have to undergo re-authorizations every five years.
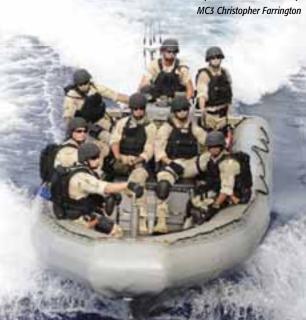
CURRENTS: Anything else that you would like *Currents* readers to know?

GARY: Yes. I want readers to know that there has been unprecedented and excellent cooperation among Navy commands to produce these comprehensive documents.

When the SYSCOMs added their testing requirements, it took them a while to figure out how to approach this—just like it took us a while in Phase 1 to figure out what we were doing. But now we're working very well together. We've received a lot of support across the Navy from the Naval Undersea Warfare Center Newport to the Naval Facilities Engineering Command that support us, to the regions, the Space and Naval Warfare Systems Command and beyond. Everybody is working together to meet existing requirements. I don't think the Navy's ever undertaken anything this broad in scope before.

Between Phase 1 and Phase 2, there has been a much greater awareness, communication, and support of these efforts throughout the chain of command. Larry mentioned the senior leadership briefings on the release of our draft

EISs. That brief made it all the way up to the Secretary of the Navy. He essentially said, 'I think this is important enough, I need to know about it.' So he was briefed personally. We didn't have this level of interest in Phase 1.

Sailors assigned to the Visit, Board, Search and Seizure (VBSS) team aboard guided-missile destroyer USS Halsey (DDG 97), transit toward Halsey via rigid hull inflatable boat after a VBSS training exercise. Halsey was participating in Malabar, a regularly scheduled naval field training exercise conducted to advance multinational maritime relationships and mutual security.
MC3 Christopher Farrington

Some of the impacts we had from Phase 1—where we either had to stop or come very close to stopping our training—have raised the level of awareness throughout the chain of command. Leadership now appreciates how important this documentation is. They understand that it's got to be done well and be supported up and down the chain of command. And we need to get our story out to the public.

I think our Navy environmental program, and specifically the folks who support the Fleet, are a diverse, competent, passionate group of people that are committed to supporting the Fleet. They understand that we need to allow the Fleet to train and they support the operational Navy with excellence.

LARRY: I agree. We have an incredible group of people working our environmental programs—supporting the Fleet and Fleet training. ⚓