



ADMINISTRATION,
TECHNOLOGY
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

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MEMORANDUM FOR DIRECTOR, OPERATIONAL TEST & EVALUATION
DEPUTY UNDER SECRETARY OF DEFENSE (READINESS)
DEPUTY GENERAL COUNSEL (ENVIRONMENT AND
INSTALLATIONS)
DEPUTY ASSISTANT SECRETARY OF THE ARMY
(ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH)
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(ENVIRONMENT AND SAFETY)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH)

SUBJECT: Marine Encroachment Issues

I am requesting your coordination on the attached memorandum by COB, Wednesday, May 30, 2001, designating the Department of the Navy as the DoD executive agent for all issues related to marine encroachment, including appropriate implementation of issues identified in the Maritime Encroachment Issues and Action Plan.

In its memorandum of December 4, 2000 to the Senior Readiness Oversight Council (SROC) outlining SROC approved findings and recommendations, OUSD(P&R) reported that OUSD(AT&L) would "designate the Department of the Navy as executive agent for maritime sustainability." This memorandum completes that action.

Questions or comments concerning this issue should be directed to Mr. Bruce Beard at (703) 604-0521.

Patrick J. Meehan, Jr.
Acting Deputy Under Secretary of Defense
(Environmental Security)

Attachment:
As stated



COORDINATION RECORD

SUBJECT: Marine Encroachment Issues

DOT&E _____
DUSD(R) _____
OGC _____
OASA(IL&E) _____
OASN(I&E) _____
OASAF(MI) _____

Please fax your completed coordination record to Mr. Bruce Beard at (703) 607-4237 by
COB, May 30, 2001.

**MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY ON THE NAVY
(ENVIRONMENT)**

SUBJECT: Marine Encroachment Issues

In its memorandum of December 4, 2000 to the Senior Readiness Oversight Council (SROC) outlining SROC approved findings and recommendations, OUSD(P&R) reported that OUSD(AT&L) would "designate the Department of the Navy as executive agent for maritime sustainability." Such action is warranted because:

- Marine encroachment issues directly affect Naval operations and training;
- Department of the Navy has existing in-house expertise to address these issues;
- Department of the Navy has existing formal relationships with the National Marine Fisheries Service; and
- Department of the Navy is the DoD executive agent for all issues related to marine protected areas.

Pursuant to the policies and responsibilities established in DoD Directive 4715.1, "Environmental Security," I request that the Department of the Navy act as the DoD executive agent for all issues related to marine encroachment, including appropriate implementation of issues identified in the Maritime Encroachment Issues and Action Plan. In carrying out this assignment, you are responsible for coordinating with the other DoD Components as necessary, including periodic reporting to the Defense Test & Training Steering Group on the status of marine encroachment issues.

If you have any questions concerning this issue, please contact Mr. Bruce Beard at (703) 604-0521.

**Deputy Under Secretary of Defense
(Installations and Environment)**

Maritime Sustainability Issues and Action Plan

Author: Ms. Kim DePaul **Champion:** RADM Noel Preston

1. ISSUE DEFINITION

A. Overview

The issue of regulatory compliance is the common element affecting the ability of US Armed Forces to conduct operations, training exercises, or testing in the marine environment, including surface and subsurface "at sea" Department of Defense (DOD) training ranges and operational areas. Seven major environmental regulatory programs (enacted either legislatively or through Executive Order) seek to "protect from harm" those sensitive habitats and living marine resources that are considered environmentally precious, including marine mammals, sea turtles, coral reefs, and special marine habitats. The reach of these programs is broad, affecting actions undertaken in both US waters and on the high seas. There are also distinct regional differences in how the regulations are interpreted and actually enforced. In addition, the jurisdiction of these regulatory programs overlaps many of the same resources.

Compliance with some marine regulatory programs usually requires DOD to consult with regulators when a proposed action may "affect" a protected resource. The agencies involved include the US Fish and Wildlife Service (FWS), the National Marine Fisheries Service (NMFS), and state agencies for coastal zone management. The consultation process empowers regulators to impose stringent "reasonable and prudent measures to protect the environment from the effects of the action." In some situations, consultations, particularly early consultations, could pose the prospect of compromises in security even though the discussions are unclassified.

Regulatory agencies (e.g., NMFS and FWS) have taken to applying a "precautionary approach" to management of protected resources when DOD activities are involved. The Precautionary Approach is a resource preservation and conservation philosophy where in the absence of scientific information to the contrary, the regulator assumes that the proposed DOD activity will harm the environment. The burden of proving that an action has absolutely no potential to harm the environment is on the DOD operator or tester. This policy has no legal basis under federal law, and is actually inconsistent with the legal regimes established by Congress, which provide for the DOD operator or tester to determine, based only on the best scientific data available, whether their actions will adversely impact the environment. This distinction is critical because, in the absence of science showing DOD activities are negatively impacting the environment, well-intentioned but overzealous regulators are now either explicitly or implicitly applying the Precautionary Approach to DOD activities. This practice results in restrictions on mission-essential training. The environmental rewards are unclear but the readiness impacts are real.

The following excerpt from a NMFS publication on the "precautionary approach" is illustrative of NMFS' attitude toward regulating DOD acoustic operations in the marine environment:

The Precautionary Approach is adapted from the Precautionary Principle. The latter aims to prevent irreversible damage to the environment by implementing strict conservation measures, even in the absence of scientific evidence that environmental degradation is being caused by human intervention. The Principle is rather rigid and implies a disproportionate form of reversal of the burden of proof—in its extreme, human actions would be considered harmful unless proven otherwise. The Precautionary Approach is a prudent and heedful relaxation of the Principle, developed to deal with systems that are slowly reversible but often difficult to control, not well understood, and may be subject to changing environmental and human factors (NMFS, *Our Living Oceans: Report on the Status of US Living Marine Resources, 1999*).

There are several key reasons that the regulators apply the Precautionary Approach to regulate DOD training and operations, including the ambiguity over what constitutes an effect on an animal, lack of quality data, and limited scientific understanding of the impacts of DOD activities on animals.

The Marine Mammal Protection Act is a case in point. Originally enacted to regulate commercial fishing impacts on dolphins, it has been applied by courts, environmental activists, and federal regulatory agencies to restrict military training. The uncertainties associated with enforcement of the act are summarized as follows:

- **Vague Legislative/Regulatory Definitions of What Constitutes an "Effect."** The Marine Mammal Protection Act strictly prohibits the intentional or unintentional "taking" of marine mammals without a permit. "Taking" is defined as to harass, hunt, capture, or kill a marine mammal. However, the definition of harassment is vague with widely varying interpretations by regulatory agencies ranging from simple annoyance (like causing an animal to change direction or change breathing patterns, e.g., dive) to injuring an animal. Because of its vagueness, determining whether and when an animal is subject to harassment can be a moving target, with DOD spending time and millions of dollars researching allegations that its activities harass, as oppose to harm or kill marine mammals.
- **Lack of Quality Data.** The availability of data on distribution and abundance of marine mammals and sea turtles for use in determining the effects of a proposed action under the Marine Mammal Protection Act and/or Endangered Species Act is uneven. For example, while more data are available for marine mammal occurrences and species densities in the Southern California Bight, very little is known elsewhere, other than from sporadic survey cruises that extrapolate limited data for vast geographic areas of a coastal region.
- **Limited Scientific Understanding of Acoustic Impacts on Marine Mammals.** There are only two controlled studies that correlate levels of noise to physiological impacts such as temporary deafness. In general, there are no firm data on what levels or qualities of sound cause behavioral modifications, or are actually harmful to a marine mammal. This is because Research and Development (R&D) to date is insufficient to make firm

conclusions that the regulators will endorse. Moreover, when this lack of "impact" data is coupled with existing and sparse data on animal locations and migrations, it is difficult to obtain an agreement with the regulators regarding appropriate impact prediction methodologies for use in meeting the requirements of the National Environmental Policy Act (NEPA) and Executive Order 12114 environmental analyses.

Reliance on the Precautionary Approach by NMFS and FWS in consultations and permitting has led to increasingly conservative decision-making and the imposition of restrictions on DOD training operations and testing:

- **Buffers.** Substantial buffer areas around sensitive resources such as marine sanctuaries and coral reefs are being imposed in order to guarantee their protection from military activities.
- **Restrictions on Night-Time Operations.** Visual monitoring is considered by NMFS and environmental activists to be essential when acoustic operations are conducted. Since visual monitoring is not possible at night, night-time operations can be restricted or prohibited.
- **Prohibitions on the Use of Explosives.** The use of explosives in test or training activities is considered by the regulators to almost always imply that an animal could be injured or killed. During the Littoral Warfare Advanced Development (LWAD) 00-2 Sea Test, NMFS denied the Navy use of SUS (Signals, Underwater Sound) charges containing about two pounds net explosive weight. Use of the SUS charges had been an important element to the planned test program, and are extremely small in comparison to the rest of the Navy arsenal. This position bodes poorly for ordnance testing and training.

The challenges faced by DOD were recently put into context in a report to Congress by the National Research Council (NRC). Addressing the expanding application and interpretation of the definition of harassment under the Marine Mammal Protection Act, the NRC asserted that:

"If the current interpretation of the law for Level B harassment (detectable changes in behavior) were applied to shipping as strenuously as it is applied to scientific and Naval activities, the result would be crippling regulation for nearly every motorized vessel operating in US waters."

So far this paper has examined the effects of individual laws and regulations on DOD training ranges and operating areas. However, a range or operating area is oftentimes subject to more than one regulatory program. The cumulative or additive effect of complying with more than one regulatory program, some with overlapping jurisdiction concerning the same natural resources (e.g., NMFS regulations cover sea turtles at sea and FWS regulations cover sea turtles ashore) can place the range or operating area in the position complying with duplicative procedures for preserving and/or conserving the same or multiple species. Compliance can thus

be costly from the perspective of time, expenditures, and ultimately lost opportunity to train or conduct tests.

B. Specific Regulatory Drivers

The seven regulatory programs that impact DOD operations, training, and testing in the marine environment in order of their severity are:

- **Marine Mammal Protection Act (MMPA).** The MMPA prohibits the intentional or unintentional "taking" of marine mammals without a permit from the NMFS and/or FWS. "Taking" is defined as harassing, hunting, capturing, or killing a marine mammal. There are no exemptions for national defense, and MMPA applies to US Navy ships with in US territorial waters and on the high seas.
- **Endangered Species Act (ESA) (Marine Species).** Under the ESA, it is unlawful to "take" a listed species or significantly modify or degrade its habitat. If a military service proposes an action that may "take" species that occur in open waters (if such taking is incidental to, and not the purpose of, the action), a take permit is required. Many marine mammals, principally whales, are listed as endangered or threatened and are protected under both the ESA and the MMPA. Sea turtles are also protected under ESA.
- **National Marine Sanctuaries Act.** There are 13 designated marine sanctuaries throughout the gulf and west coasts of CONUS, and around the Hawaiian Islands. Management plans developed for each sanctuary (and evaluated in EISs) set priorities, contain regulations, impose prohibitions, present existing programs and projects, and guide the development of future activities. Four marine sanctuaries are located in the same region as traditional DOD operational areas or test ranges.
- **Coastal Zone Management Act.** DOD actions must be consistent, to the maximum extent practicable, with the enforceable policies of a coastal state's or territory's federally-approved coastal management program (state CMP). The term "practicable" means that the action should be consistent with the affected state CMP unless the agency is prohibited from compliance because of the requirements of existing law applicable to that agency's operations. Direct, indirect, and cumulative effects of an action must be considered. Some states, principally California, have defined their authority far beyond the designated limit (3 NM) of the coastal zone.
- **Magnuson-Stevens Act (Essential Fish Habitat).** DOD services must consult with the NMFS for any actions that may adversely impact Essential Fish Habitat (EFH), which is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Adverse effects may be direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species' fecundity); site specific; or

habitat-wide. Since designated EFH extends from the coast to all US waters out to 200 NM, all DOD sea ranges, operating areas, and the surface water underlying Warning Areas are affected.

- **Executive Order on Coral Reefs.** This Executive Order (EO) requires that federal agencies: (1) identify actions that may affect US coral reef ecosystems; (2) avoid activities that may adversely affect these coral reefs; and (3) restore coral reef ecosystems. US coral reef ecosystems are defined as those species, habitats, and other natural resources associated with coral reefs in all marine areas and zones subject to the jurisdiction or control of the US, including reef systems in the south Atlantic and Pacific oceans, the Caribbean Sea, and Gulf of Mexico. Navy is DOD Executive Agent for coral reefs.
- **Executive Order on Marine Protected Areas.** EO 13158 directs all federal agencies, to the extent permitted by law and to the maximum extent practicable, to avoid harming the protected natural and cultural resources of federal, state, local, territorial and tribal marine protected areas (MPAs). The definition for "marine waters" means all submerged lands and waters between the baselines from which US territorial seas are measured to the limits of the Exclusive Economic Zone (EEZ), which is roughly 200 NM from the US coast. Department of Commerce (DOC) is in the process of designating these MPAs.

2. IMPACTS TO MISSION

A. Individual Regulatory Program Compliance

An example of mission impacts stemming from compliance with individual marine environmental regulatory programs are summarized below:

1. Minor Impacts

There are numerous examples of situations where minor impacts on operational readiness have occurred when the test or training activity has had to be modified to comply with marine environmental regulatory programs. Generally these impacts take the form of mitigation measures required by the regulators during consultations that, at worst, can be difficult to achieve and, at the least, are time-consuming in terms of man-hours diverted from actual training. Examples include:

- **Navy Exercises at the Atlantic Fleet Weapons Training Facility (AFWTF), Puerto Rico (August 2000 through December 2001)** – Many of the undeveloped coastal areas at the Inner Range at Vieques are used by sea turtles as nesting beaches. Following the direction of the 1980 Biological Opinion (BO) and the 1983 Memorandum of Understanding between the Navy and the Commonwealth of Puerto Rico, beach surveys are conducted prior to amphibious landing exercises and any nests found are marked off-

limits. In 1991, the Navy built a sea turtle hatchery on Vieques to incubate eggs that have been relocated by the Navy because of the possibility of harm during amphibious landings and other military exercises on the Inner Range. As a result, over 17,000 hawksbill and leatherback sea turtle eggs were successfully hatched and introduced into the environment between 1991 and 1995, with an average survival rate of over 70 percent – far in excess of the natural survival rate. In spite of this success, regulators have recently requested Navy to institute additional surveys and precautionary measures for protecting sea turtles during Navy training exercises to be conducted at Vieques between August 2000 and 31 December 2001. The requested precautionary measures restrict training with inert ordnance on the Inner Range and require the Navy to return beaches to their original conditions following exercises (by raking ruts and filling in craters) and limiting use of lights along the beaches. It is estimated that complying with these requirements for conduct of Composite Unit Training Exercises (COMPTUEX), Joint Task Force Exercises (JTFEX), and Supporting Arms Coordination Exercises (SACEX) at Vieques would cost at least \$275,000 per exercise (based on costs incurred for aerial surveys conducted during the August 2000 COMPTUEX). Additional aerial surveys to be conducted during lulls in the exercises as requested by NMFS to protect manatees would add another \$1,700 per survey.

An additional consideration is the fact that the sea turtle population inhabiting Navy beaches has shown greater growth than sea turtle populations inhabiting public beaches on Puerto Rico. This increased growth has (1) occurred in spite of continuing Navy training operations (which have been conducted at Vieques since 1942), and (2) in the absence of any of the recent precautionary measures imposed by the FWS. Thus, the ultimate irony is that the increased turtle presence on Navy beaches, which is a direct result of good Navy stewardship, is leading to additional regulatory constraints. Navy is, in effect, being punished for its successful stewardship of a sensitive resource.

2. Moderate Impacts

MMPA

- **East Coast Shallow Water Training Range** - Navy is currently preparing an EIS for the establishment of a vital shallow water instrumented training range for the Atlantic Fleet. This range is needed to train Navy assets to counter the diesel submarine threat posed by Iraq, Iran, North Korea, and other nations. Due to marine mammal issues, the initial operational capability (IOC) for this program has been delayed for over two years.

3. High Impacts

Coastal Zone Management Act. Some states, in particular, California, have attempted to extend their authority over natural resources (e.g., marine mammals) that may migrate through the coastal zone. Moreover, decisions by state Coastal Management Programs

(CMPs) are often very political and unresponsive to the needs of the military. Examples include:

- **Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) Sonar Operations** - In connection with the Draft Environmental Impact Statement (DEIS) prepared for employment of the SURTASS LFA sonar, coastal consistency concurrence was sought from 23 states and five territories. Consistency concurrences have been received from 21 states and five territories. The process of obtaining these concurrences was time consuming and costly (requiring at least one full man-year of effort) and involved, in some cases, personal visits to each of five state CMPs. Based on comments received on the DEIS, California Coastal Commission (CCC) will likely nonconcur with operation of SURTASS LFA sonar within 200 NM of California's coast. Without a CCC consistency concurrence, NMFS has indicated that it will not grant Navy a Marine Mammal "take permit" for an area of water east of Hawaii to the West Coast of the US, north to Oregon, and south to northern South America. Non-operation of the SURTASS LFA sonar system in the eastern Pacific would impact DOD's ability to defend US interests against potentially hostile nations operating quiet diesel submarines.
- **California (CA) Denial of Concurrence on Urban Warrior Exercise** - As part of an urban warfare exercise, Marine Corps proposed Landing Craft Air-Cushion (LCAC) landings at the Naval Postgraduate School (NPS) in Monterey, California. Coordination was completed informally with NMFS and FWS to avoid potential impacts on marine mammals. Biologists were to surround the LCACs in boats and a helicopter and redirect the LCACs if otters or marine mammals were spotted. The CCC staff agreed to the mitigation and recommended concurrence. In spite of these major mitigation commitments, CCC denied concurrence at the public hearing, stating that the mitigation was not "in writing." Marine Corps was forced to transport the troops by helicopter to NPS, and bus them to Monterey, where they began their urban warfare exercise.

4. Severe Impacts

MMPA/ESA.

- **Navy Exercises at the Atlantic Fleet Weapons Training Facility (AFWTF), Puerto Rico** - As a result of consultations with NMFS and FWS for training exercises at Vieques, significant restrictions have been imposed on the use of inert ordnance: (1) night-time use of inert ordnance on the range is limited to 60 minutes total with only 10 percent of total Naval Surface Fire Support (NSFS) firing and 30 percent of total bombing allowed during night-time; (2) no use of illumination rounds after 2300 with a 60 minute maximum total time of illumination per night (includes Naval and aircraft dropped flares, artillery and mortars over both water and land); (3) constant aerial surveillance of the range and surrounding waters by certified biologists must be conducted during the day; and (4) should there be a single sighting of a sea turtle on the

range (or even if the turtle is sighted 1,000 yards off shore) the entire training exercises for a carrier battle group must be halted.

National Marine Sanctuaries. Of importance to DOD in respect to the National Marine Sanctuaries regulatory program is that: (1) NOAA is no longer issuing blanket grandfather clauses to DOD activities that have occurred in an area prior to its designation as a marine sanctuary; and (2) local sanctuary managers are seeking more say in the types of activities conducted in proximity to their designated sanctuary. Example of the impact of sanctuary regulations on DOD activities include:

- **Update of Channel Islands National Marine Sanctuary (CINMS) Boundaries and Regulations** - CINMS is currently reviewing sanctuary boundaries, updating their Management Plan, and preparing a supporting EIS. The study area under evaluation includes the marine and coastal area from Point Sal to Point Mugu, which includes a portion of the Naval Air Warfare Center Weapons Division (NAWCWD) Point Mugu Sea Range. The Sea Range is part of the DOD Major Range and Test Facility Base (MRTFB). The CINMS study area also includes the MRTFB range associated with Vandenberg Air Force Base (AFB). While existing CINMS regulations place no undue restrictions on DOD activities (15 CFR 922.71), recently proposed regulatory language is substantially more restrictive and shows no regard for the link between training and national defense readiness:

(S) All DOD activities shall be carried out in a manner that avoid, to the maximum extent possible any adverse impacts on Sanctuary resources and qualities. The prohibitions...of this section do not apply to existing military activities necessary for national defense as specifically identified in the most recent Final Environmental Impact Statement and Management Plan for the Sanctuary. (A) Additional DOD activities initiated after the effective date of these regulations that are necessary for the national defense may be exempted by the Director after consultation between the Director and DOD. DOD activities not necessary for the national defense, such as routine exercises and vessel operations, are subject to all prohibitions in the regulations in this subpart.

In addition, CINMS officials are questioning whether all Air Force activities conducted at Vandenberg AFB are covered by the national defense exemption, and have stated that they will determine which activities qualify for the exemption. Moreover, NOAA has stated that commercial space launches are not covered by the exemption. NOAA's arbitrary regulatory action could result in significant regulatory burdens on commercial space launch activities and initiatives contrary to the Commercial Space Act of 1998.

- **Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) Sonar Operations** - Official comments made by NOAA's Office of Ocean and Coastal Resource Management (the office that oversees the Coastal Zone Management Program and National Marine Sanctuaries Program) on the DEIS for operations of the SURTASS LFA sonar make it clear that sanctuary managers are seeking to expand their authority

over military activities, such as those that involve acoustics. Such activities have traditionally been outside the general purview of sanctuary managers. Specifically, NOAA requested that: (1) the sanctuary system be included in those areas where the SURTASS LFA sonar will not be operated; (2) Navy should consult with the Office of Ocean and Coastal Resource Management regarding the conduct of SURTASS LFA sonar operations in or near a sanctuary; and (3) Navy should provide advance notification to sanctuary site personnel when entering an area surrounding a designated sanctuary.

- **Littoral Warfare Advanced Development (LWAD) Program 00-2 Sea Test** -The 00-2 LWAD Sea Test (May 2000), sponsored by the Office of Naval Research (ONR), was radically curtailed due to inconsistent regulatory interpretations of the MMPA by NMFS. Specifically, NMFS regional staff did not endorse animal distribution data obtained from their own sources and not only disagreed with the impact analysis methodology presented in an Navy Overseas Environmental Assessment (OEA), staff refused to provide an alternative prediction methodology that would be acceptable. Furthermore, NMFS staff suggested that there was no time on the East Coast that the LWAD 00-2 Sea Test could be conducted without significantly impacting marine mammals. Because an agreement could not be reached, all acoustic testing during the Sea Test had to be cancelled. Even in the absence of acoustic testing, NMFS observers were required to be present on the research vessels to observe the non-acoustic aspects of the testing. The curtailment of the acoustics portion of the Sea Test resulted in a delay of two Navy anti-submarine warfare programs (Evaluation of APB active algorithms against diesel and new low frequency sources against nuclear and diesel submarines). Both programs are designed to detect and meet the threat posed by quiet submarines in a littoral environment.

5. Extreme Impacts

MMPA. The possibility exists that all DOD marine testing, training and exercise operations that use active acoustic devices (e.g., standard ship sonars), ordnance, or otherwise affect protected species, will be required to obtain Incidental Harassment Authorizations/Letters of Authorizations (IHA/LOA). Each IHA/LOA takes at least a year to obtain, requires substantial investment in supporting data collection and is only good for one to five years. In addition, a rigorous public process is involved. As a result, costs for routine training are likely to dramatically increase due to mitigation requirements, such as continuous aerial surveys, additional spotters, and delays. Night-time training and rough seas training will decrease because of limited visual capability of spotting marine mammals. All of these could result in significant degradation in readiness. The effects on readiness will be felt most particularly by the Navy (from the individual unit level to an entire battle group) as well as other users of marine waters -- specifically the Air Force at Eglin and Vandenberg AFBs.

B. Cumulative Regulatory Compliance

As previously mentioned in this paper, compliance with any one of the seven marine environment regulatory programs on an individual basis could have potentially adverse impacts on DOD operational readiness. However, when DOD test or training activities are conducted on a range subject to more than one marine environmental regulatory program and multiple natural resources, the cumulative impact of compliance can have severe to extreme consequences on operational readiness. Examples of where cumulative compliance impacts have the potential to affect DOD test and training are the Puerto Rico Operating Area and the NAWCWD Point Mugu Sea Range. The potential magnitude of cumulative compliance impacts to the NAWCWD Point Mugu is illustrated below.

- **NAWCWD Point Mugu Sea Range.** The Sea Range encompasses about 36,000 square miles along the Pacific Coast off Southern California. The range supports test and evaluation activities for air weapons systems and an area to perform actual operations and missile firings. Because of its location in the Southern California Bight, the Sea Range contains a vast number of sensitive natural resources subject to the marine environmental regulations previously identified, including:
 - **Marine Mammals** - The Southern California Bight is home to 34 species of cetaceans and four pinniped species. Several of these marine mammals are listed as endangered or threatened.
 - **Terrestrial Endangered Species** - There are 12 federal and state-listed threatened and endangered species inhabiting the land portions of the range.
 - **Essential Fish Habitat** - Two EFH zones (Coastal Pelagic and Groundfish) occur within the Sea Range, both extending from the coastline out to 200 NM.
 - **Coastal Zone Management** - The Sea Range is located along the California coast. Of all the state CMPs, the California Coastal Commission has been far and away the most restrictive and unresponsive to military needs.
 - **National Marine Sanctuaries** - The Sea Range is located adjacent to CINMS (the boundaries of which are proposed for expansion and the expansion would include a portion of the range).
 - **Marine Protected Areas** - There are numerous areas within the Sea Range and along the California coast in the vicinity of Point Mugu that meet the definition of a marine

protected area, and the range's proximity to these resources could lead to future restrictions on Sea Range operations.

Depending on the test, exercise, or operation, the cumulative operational impacts of complying with any or all of the regulatory programs that govern the multiple natural resources found on the Point Mugu Sea Range could range from minor to extreme. Of immediate significance is the fact that CINMS is seeking to expand its boundaries, which would result in the sanctuary boundaries overlapping those of the Point Mugu Sea Range. Furthermore, should sanctuary regulations be adopted as currently drafted, ship movements and training exercises (which the sanctuary deems not essential to the national defense) could be precluded within that portion of the sea range located within CINMS. DOD could then be in the position of operating an instrumented sea range where training and other operations were severely restricted.

The cumulative impact of complying with multiple marine environmental regulations is also affecting the development and employment of new weapons systems. For example, the \$350 million SURTASS LFA sonar, an anti-submarine sensor system already in use by Russia and France, has not been deployed despite the positive results of a two-year Navy-funded research project demonstrating the environmental compliance of the system. Moreover, it is likely that the Natural Resources Defense Counsel will sue the Navy over employment of the SURTASS LFA sonar. There have already been at least four lawsuits challenging the conduct of marine mammal research with SURTASS LFA sonar in the Hawaiian Islands. In addition, well over 20 Congressmen have shown interest in the system's effect on the marine environment. To date, Navy has expended over \$10 million in the collection of impact data and the preparation of a worldwide Environmental Impact Statement (EIS). Navy has engaged reputable marine mammal scientists to act as independent advisors and has included substantial mitigation in the employment plan. Employment of the system is still uncertain, because of the likelihood of lawsuits, the non-concurrence of the California Coastal Commission (CCC), and NMFS' position to withhold a "take" permit for a large area of the eastern Pacific until CCC concurrence is obtained. This program is a clear example of how multiple environmental regulations (MMPA, ESA, National Marine Sanctuaries, Coastal Zone Management Act) can cumulatively and adversely delay implementation of a critical weapons system, drive up costs, and reduce readiness.

3. ONGOING EFFORTS AND PAST/PRESENT INITIATIVES

A. Navy/Marine Corps

Preparation of Range EISs - In 1996, Navy initiated preparation of EISs to cover range activities. Range EISs have been prepared and Records of Decision issued for range activities at the Pacific Missile Range Facility (PMRF), Atlantic Undersea Test and Evaluation Center (AUTEC), and NAS Patuxent River. EISs are ongoing for range

activities at NAWS China Lake, the NAWCWD Point Mugu Sea Range, San Clemente Island Ranges and Operating Areas, and the Shallow Water Training Range (East Coast).

Navy/NMFS Liaison Office - A Navy Liaison Office has been established at NMFS. The mission of this office is to provide a permanent location to work policy issues between the Navy and NMFS and resolve any problems between the two agencies.

Coastal Zone Management - CINCPACFLT has established two enhanced readiness teams in San Diego and Seattle to deal with regional encroachment issues such as CCC restrictions. CINCLANTFLT is following suit on the east coast.

National Marine Sanctuaries Advisory Liaison - A Navy representative currently serves on the advisory committee for CINMS and is providing input to the regulatory process. Navy liaison at NOAA has been notified that discussions at the HQ level may be necessary.

Monitoring of Marine Protected Areas Policy - Navy JAG is monitoring Department of Commerce ongoing efforts to draft and implement the EO.

Coral Reefs - Navy has already performed a literature search for available maps and other data identifying the locations of coral reefs. An additional effort to validate the collected data and actually prepare digitized coral reefs maps is anticipated to begin this year. Navy is the DOD executive agent on the federal Coral Reef Task Force.

Marine Mammal Initiative (MMI) - The overall goal of the MMI is to achieve sustainable readiness in harmony with marine mammals. This Navy action is designed to bring together the separate OPNAV Codes responsible for developing and implementing policy and direction of the Navy with respect to readiness training, exercises, normal fleet operations, and RDT&E in order to establish a cohesive, organized marine mammal policy within the Navy that supports sustained readiness. To that end, four Integrated Product Teams (IPTs) have been established: Legal; Research and Development (R&D); Operational, Acquisition, and Environmental Planning; and Public Affairs and Education. This initiative provides a proactive engagement policy for regulators, the general public, environmental groups, Congress, and the Fleet sailor. The specific goals and objectives, results to date, and plans for further action are outlined below for each IPT.

Legal IPT - The goal of the Legal IPT is to provide Navy with clear and reasonable legal guidance (e.g., a sound legal position). The first task undertaken by this IPT is to obtain legislative relief by more clearly defining what constitutes "harassment" of a marine mammal. The IPT has already drafted preferred language, negotiated with other federal agencies on this language, and submitted the negotiated language to OMB. The second task for the Legal IPT is to obtain clarity in the current version of the Navy Operational Environmental Policy Statement (At-Sea Policy). Participants in this include OPNAV codes, Navy JAG, and SECNAV.

R&D IPT - The goals of the R&D IPT are to develop and oversee a robust Marine Mammal R&D program that fully responds to marine mammal requirements. The initial efforts of this IPT are focused on increasing the level of knowledge of marine mammal distribution and activity (e.g., what species are out there, where are they, how many are there, what are their hearing capabilities?). The Living Marine Resources Information System (LMRIS) Phase I is being evaluated for use as a basis for archiving this data for use by operational planners. The first objective is to cover high priority areas (East and West Coast operating areas and training ranges), with worldwide coverage as the ultimate goal. As a longer term goal, the IPT is working toward acting in a coordinating role between the Naval Oceanographic and Navy Space Warfare Command to transition the LMRIS system aboard ship. If successful, LMRIS would be called up by meteorological officers to obtain input on marine mammal sensitive habitat when planning operations at sea.

Another critical objective of the R&D IPT is to develop a firm scientific understanding of the effects of Navy operations on marine mammals and sea turtles (e.g., how do sonars and explosions affect them and how can scientifically-defensible effects thresholds be defined). To this end, the IPT is reviewing Office of Naval Research's (ONR's) 5-Year Science & Technology objectives to ensure that research will provide vitally needed answers in order to determine if the budget should be increased to accelerate data output (budget has been increased from \$2 to \$3 million this year). In addition, the IPT is evaluating ONR's Effects of Sound on the Marine Environment (ESME) program. Important program components are shown in Table 1 on the following page.

Operational & Acquisition and Environmental Planning IPT - This IPT has two sub-groups. The Operational & Acquisition Sub-group IPT has two goals: (1) develop standard operating procedures (SOPs) for ship operators and operational planners; and (2) develop guidance for acquisition managers to assess and mitigate potential impacts on marine mammals. Efforts are underway to achieve both these goals. The Environmental Planning Sub-group IPT seeks to maintain consistent approaches in preparing environmental analyses of marine mammal impacts by operational and NEPA/EO 12114 planners. This IPT has contracted with the Center for Naval Analysis on a study to determine the effect of compliance with regulator-recommended mitigation procedures on Navy resources (time and cost) and operations (training benefits). In another effort, the Environmental Planning Sub-group IPT is in the process of developing scientifically defensible methodologies for assessing the impact of specific incoherent and tonal acoustic sources on marine mammals and incorporating individual policy memos into a single guidance document or methodology "cookbook." The initial focus of this effort is on the impacts of explosives in deep and shallow water and in the surf zone. Methodology development will transition into clear zone charts for various sizes of ordnance.

Future efforts will focus on: (1) short duration coherent pings by operating system/frequency (low, medium, high) and (2) continuous sound by operating system/frequency (low, medium, high).

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Table 1

Key Research Areas for Marine Mammal Compliance RDT&E Program

- Development of a Miniature Acoustic Recording Tag to Assess Marine Wildlife Response to Sound
- New Directions in the Study of Low-Frequency Sound in Baleen Whales
- Assessment Tool Development for Marine Mammal Critical Habitats
- Acoustic Integration Model (AIM) Development
- Shore-Based Tracking of Right Whales in Coastal Waters of Northeast Florida: Aerostat R&D and Ranging Trials for Shore-Based Antenna Sites
- Experimental Measures of Blast and Acoustic Trauma in Marine Mammals
- Anatomical Investigations of Auditory Structures of Beaked Whales
- VHF Radio Telemetry Tracking of Right Whales in Southeastern US Coastal Waters
- Satellite Imagery Ecosystem-Based GIS Study of Bluefin Tuna and Right Whale Distribution and Movements in the Gulf of Maine and Northwest Atlantic
- An Assessment of Gray Whale Movements in Acoustically Changing Nearshore Environments
- Marine Mammal Monitoring on Navy Undersea Acoustic Ranges
- Low Frequency Odontocete Hearing
- Low Frequency Marine Mammal Hearing Thresholds in Response to Acoustic Pressure and Particle Velocity
- Marine Mammal Acoustic Safety Criteria
- Pinniped Bioacoustics: Auditory Mechanisms, Temporary Threshold Shift, and Effects of Noise on Signal Reception
- Responses of Whales to Experimental Playback of Low Frequency Sound from the NAVY SURTASS LFA Sonar
- Assessing Risk Factors in Right Whale Vessel Collision Using an Acoustic Recording Tag and Controlled Sound Exposure
- Whale Signature Analysis and Distribution of Sounds from IUSS Data
- Information and Technology Tools for Assessment and Prediction of the Potential Impact of Military Noise on Marine Mammals
- Mammal Location and Movement Benchmarking
- Living Marine Resources Information System (LMRIS)
- Synthesis of Distant Underwater Explosion Signals for Mammal Hearing Studies
- Low Energy-Blast Trauma Characterization

Public Affairs and Education IPT - This IPT is focused on developing a pro-active outreach effort with four goals: informing, responding, clarifying, and coordinating. To meet the goal to "inform," the IPT is currently developing informational tools highlighting the importance of sustained readiness and how the Navy addresses environmental considerations. In addition, existing outreach efforts focusing on Congressional staffs will continue. In order to improve Navy timeliness and accuracy in responding to marine mammal incidents, the IPT has proposed developing a marine mammal incident response action plan and giving media-guidance packages to Fleet. Ensuring a consistent Navy message at all levels in all places by clarifying the message and coordinating responses is the culmination of this IPT's proposed program. Planned action in this area includes developing complete press kits (web site, video, PAO brochure and media-training kits for Navy personnel). The IPT also intends to develop guidance to promote the products produced by the other MMI IPTs.

4. RECOMMENDATIONS

The following are short, mid, and long-term recommended courses of action for DoD to address the issues presented above.

A. Short-Term

1. OSD should designate Navy as the Executive Agent for Marine Sustainability issues since: (a) such issues mainly impact Naval operations and training, (b) Navy has performed the most research and has on-going research programs; (c) Navy has existing in-house expertise; and (d) most importantly, Navy has the most developed working relationships with NMFS. This designation would foster consistency among the Services when approaching the regulators. It would also allow Navy to establish an inter-Service agreement on underwater acoustic prediction methodologies. (Note that at the 27 November, 2000 meeting the SROC directed USD(AT&L) to designate the Navy as executive agent for maritime sustainability.)
2. OSD should ensure adequate resources are available for marine mammal and sea turtle data collection and R&D (Operations Areas surveys and impact studies).
3. Requirements documents for new weapons systems should, where possible, take advantage of mature technologies that will decrease the environmental impact of testing and training the new system.

B. Mid-Term

1. OSD should establish one or more action offices and gather and publish data on the cumulative fiscal and operational impacts stemming from compliance with regulations governing the activities in the marine environment.
2. The Service acquisition communities should consider, wherever practical, using closed environments (e.g., quarries, catch-ponds) for the testing of ordnance and other live-fire testing.

C. Long-term

1. The Service acquisition communities should increase emphasis on minimizing, to the extent possible, environmental impacts on protected resources when designing new acoustic or explosive weapons systems for use in the marine environment.
2. OSD should coordinate a Service team to develop a strategy and institute an outreach effort to Congress designed to raise the profile and acceptance of continued military use of offshore operating areas. A proactive program of engagement and education could focus on the importance of the offshore operating areas in sustaining operational readiness and emphasize the length of time these areas have been used by the military with minimal environmental impact.
3. OSD should establish and groom both senior political level and working level relationships with the DOC (NOAA, NMFS) and DOI (NPS, FWS) such that when situations cause issues to be elevated, an existing positive relationships between agencies can be accessed.
4. OSD should develop a comprehensive legislative package that clarifies the requirements of environmental and natural resource statutes as they apply to DOD training and operations. The changes must effectively balance the need to preserve and protect natural resources with the need to train our forces and defend the nation.