By Certified Mail and Facsimile
Return Receipt Requested

July 14, 2004

Hon. Gordon R. England
Secretary of the Navy
United States Department of the Navy
1000 Navy Pentagon
Washington, DC 20350
FAX (703) 614-3477

Re: Request for Review of Naval Actions Involving Mid-Frequency Active Sonar

Dear Sir:

On behalf of the Natural Resources Defense Council ("NRDC"), The Humane Society of the United States ("The HSUS"), the International Fund for Animal Welfare ("IFAW"), the Ocean Futures Society and its founder Jean-Michel Cousteau, and our millions of members, we write to reiterate our serious concern about the Navy's use of mid-frequency active sonar throughout the world's oceans. Our goal in doing so is to ensure that the Navy is testing, training with, or otherwise deploying this technology—known to be implicated in a growing number of mass mortalities of whales—in a manner consistent with the requirements of the federal Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531 *et seq.*, the Marine Mammal Protection Act ("MMPA"), 16 U.S.C. §§ 1361 *et seq.*, and the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4332(2)(C) and (E), as described below. More fundamentally, our goal is to stop the needless infliction of harm to marine mammals and other marine species that has repeatedly been associated with the Navy's use of such sonar without feasible, effective mitigation measures.

This letter is our latest request to the Navy for a constructive dialogue on this issue.[1] We understand that the Navy's central mission is defending our nation, and we recognize its critical importance in protecting and preserving the quality of our lives.

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[1] In the aftermath of the March 2000 mass mortality of whales in the Bahamas, NRDC wrote to the Navy requesting discussions about the Navy's use of high intensity sonar. *See* Letter from Joel Reynolds and Michael Jasny to Hon. Richard Danzig, et al. (July 7, 2000). The Navy did not respond. Since that time, we have reiterated our interest in such discussions, most recently at the February 3, 2004 meeting of the Marine Mammal Commission's Advisory Committee on Acoustic Impacts on Marine Mammals.

We nevertheless believe, and we hope the Navy agrees, that this mission can and must be served through practices consistent with our nation's environmental laws and, more fundamentally, with the conservation of our natural resources. This is a principle of law that, for thirty years, has repeatedly been affirmed both by Congress and by the courts, but, for the reasons discussed below, we are concerned that it has yet to be applied by the Navy to its use of mid-frequency active sonar.

I. The Navy's Use of Mid-Frequency Active Sonar

For at least four decades, the Navy has employed mid-frequency, high-intensity active sonar as an element of its anti-submarine warfare program. Mid-frequency active sonar systems are conventionally defined as those that emit sound at frequencies between 1 and 10 kilohertz (kHz). They are used for both force protection and tactical prosecution. According to Rear Admiral Steven Tomaszeski, Oceanographer of the Navy, mid-frequency systems provide the Navy's "standard method" for localizing submarines.[2]

Navy vessels are widely equipped with mid-frequency sonar systems. As of January 2004, 58% of the Navy's 294 surface ships and submarines were equipped with at least one form of mid-frequency active sonar, and of the 161 ships and submarines planned or under construction, 93 are to be similarly equipped.[3] Mid-frequency systems are also air-deployed via helicopter, fixed-wing aircraft, and sonobuoys.

The Navy's current battery of mid-frequency systems includes the following:

- The AN/SQS-53 A/B, C and D, a hull-mounted system. The C version of this system, commonly known as "53-Charlie," is deployed aboard several classes of Navy frigates and destroyers as part of the AN/SQQ-89 sonar suite.
- The AN/SQS-56, another hull-mounted system that operates at somewhat higher frequencies than AN/SQS-53.
- The AN/SSQ-62 B, C, D, & E Directional Command Activated Sonobuoy System (known as DICASS).
- The Airborne Low Frequency System (known as ALFS). Notwithstanding the reference to "low frequency" in its name, ALFS operates in the mid-frequency range between 3 and 5 kHz.

[2] RADM Steven Tomaszeski, Presentation to the U.S. Marine Mammal Commission Advisory Committee on Acoustic Impacts on Marine Mammals (Feb. 3, 2004).

[3] *Id.*

Many of these systems employ technology capable of generating sounds well in excess of 215 decibels (dB re 1 μPa (RMS)).[4] For example, during the March 2000 mass stranding of whales in the Bahamas, source levels from one AN/SQS-53C system operating in the area were reported to exceed 235 decibels, creating a swath of 160 decibel sound extending tens of kilometers away.[5] Exactly how loud some of these systems operate is not publicly known. What is known is that the use of this technology is geographically extensive, ranging through canyons and other underwater habitat across the world's oceans.

II. Impacts of Mid-Frequency Active Sonar on Marine Mammals and Other Species

The Navy has continued and expanded its use of high-intensity, mid-frequency active sonar despite mounting evidence that such sonar can seriously harm marine mammals and other marine life. Scientists agree, and the publicly available scientific literature confirms, that the intense sound generated by military active sonar can induce a range of adverse effects in whales and other species, from significant behavioral changes to stranding and death.

By far the most widely-reported and dramatic of these effects are the mass strandings of beaked whales and other marine mammals that have been associated with military sonar use, in particular with the use of mid-frequency sonar. In March 2000, for example, seventeen whales from at least three species—including two minke whales—stranded over 150 miles of shoreline along the northern channels of the Bahamas. These beachings occurred within 24 hours of Navy ships using mid-frequency sonar (AN/SQS-53C and AN/SQS-56) in those same channels.[6] Post-mortem examinations found, in all whales examined, hemorrhaging in and around the ears and other tissues related to sound conduction or production, such as the larynx and auditory fats, some of which was debilitative and potentially severe.[7] It is now accepted that these mortalities were caused, through an unknown mechanism, by the Navy's use of mid-frequency sonar.

The Bahamas event is one of numerous strandings coincident with military activities and active sonar that have now been documented:

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[4] All decibel levels (dB) cited in this letter represent the root mean square (RMS) of the acoustic pressure of the sound source, calculated in reference to one microPascal (re 1 μPa), at one meter's distance.

[5] Dep't of Commerce & Sec'y of the Navy, *Joint Interim Report: Bahamas Marine Mammal Stranding Event of 15-16 March 2000* at 24, 36 (2001). The exact source level of this system is classified and was not divulged in the stranding report. *Id*.

[6] Commerce & Navy, *Joint Interim Report* at iii, 16.

[7] *Id*. at iii, 16.

(1) In May 2003, the Navy vessel USS *Shoup* was testing its mid-frequency sonar system while passing through Haro Strait, off the coast of Washington. According to one contemporaneous account, "[d]ozens of porpoises and killer whales seemed to stampede all at once . . . in response to a loud electronic noise echoing through" the Strait.[8] In the days following this test, fourteen harbor porpoises—an abnormally high number given the average stranding rate of six per year—were found beached along nearby shores.[9]

(2) In September 2002, at least fourteen beaked whales from three different species stranded in the Canary Islands. Four additional beaked whales stranded over the next several days.[10] The strandings occurred while an international contingent, including at least one U.S. ship equipped with mid-frequency sonar, was conducting anti-submarine warfare exercises in the vicinity.[11]

(3) In April 2002, a beaked whale and a humpback whale stranded near Vieques while a battle group training exercise was taking place offshore.[12]

(4) In May 2000, four beaked whales stranded on the beaches of Madeira while several NATO ships were conducting an exercise near shore. Scientists investigating the stranding found that the whales' injuries—including "blood in and around the eyes, kidney lesions, pleural hemorrhage"—and the pattern of their stranding suggest "that a similar pressure event [*i.e.*, similar to that at work in the Bahamas] precipitated or contributed to strandings in both sites."[13]

(5) In October 1999, four beaked whales stranded in the U.S. Virgin Islands during Navy maneuvers offshore. A wildlife official from the U.S. Virgin Islands reported the presence of "loud naval sonar."[14]

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[8] Christopher Dunagan, *Navy Sonar Incident Alarms Experts*, Bremerton Sun, May 8, 2003.

[9] National Marine Fisheries Service, *Preliminary Report: Multidisciplinary Investigation of Harbor Porpoises (Phocoena phocoena) Stranded in Washington State from 2 May – 2 June 2003 Coinciding with the Mid-Range Sonar Exercises of the USS* Shoup 2 (2004). Unfortunately, according to the preliminary report prepared by NMFS, freezer artifacts and other problems incidental to the preservation of tissue samples made the cause of death in most specimens difficult to determine; but the role of acoustic trauma could not be ruled out. *Id.* A final report is pending.

[10] Vidal Martin *et al.*, *Mass Strandings of Beaked Whales in the Canary Islands*, *in Proceedings of the Workshop on Active Sonar and Cetaceans* 33 (P.G.H. Evans & L.A. Miller eds., 2004).

[11] Kenneth R. Weiss, *Whale Deaths Linked to Navy Sonar Tests*, L.A. Times, Oct. 1, 2002, at A3.

[12] Email from Ken Hollingshead of NMFS to Joe Johnson and Clay Spikes (Apr. 11, 2002).

[13] Testimony of Dr. Darlene Ketten submitted to the U.S. District Court in *NRDC v. Evans*, 279 F.Supp.2d 1129 (N.D. Cal. 2003).

[14] Personal communication of Dr. David Nellis, biologist with the U.S. Virgin Island Department of Fish and Game, to Eric Hawk of NMFS (Oct. 1999); email from Ken Hollingshead of NMFS to John Mayer (March 19, 2002).

(6) In January 1998, according to a NMFS biologist, a beaked whale "stranded suspiciously" at Vieques as naval exercises were about to commence offshore.[15] Another beaked whale stranded mysteriously in the same area and under similar circumstances in May 2000.

(7) In 1996, twelve Cuvier's beaked whales stranded along 35 kilometers of the west coast of Greece. These strandings were correlated, by an analysis published in the journal *Nature*, with the movements of a low- and mid-frequency active sonar system operated by NATO.[16] A subsequent NATO investigation found the strandings to be closely timed with the movements of the NATO vessel sonar, and ruled out all other physical environmental factors as a cause.[17]

(8) Between 1985 and 1989, at least three separate mass strandings of beaked whales occurred in the Canary Islands, as reported in *Nature*.[18] Thirteen beaked whales of two species were killed in the February 1985 strandings, six whales of three species stranded in November 1988, and some twenty-four whales of three species stranded in October 1989—all while naval vessels were conducting exercises out to sea.[19] It was reported that mass live strandings occurred each time exercises took place in the area.[20]

(9) As reported in the Scientific Committee of the International Whaling Commission, there has been a concentration of mass beaked whale strandings along the Japanese coast near Yokosuka, one of the primary bases for U.S. naval activity in the western Pacific, with ten mass strandings reported since the late 1950s; an additional 64 beaked whales were reported to have stranded individually. By comparison, only two other possible mass strandings of beaked whales are known to have occurred over the rest of the entire Pacific coast of Japan. The authors concluded that a relationship between mass strandings and naval acoustics was "strongly suggest[ed]" by this record.[21]

(10) Most recently, last week a pod of melon-headed whales exhibited unusual and troubling behavior just off the shoreline of Kaua'i, Hawai'i, within

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[15] Personal communication of Eric Hawk, biologist with NMFS, to Ken Hollingshead (Feb. 12, 2002).

[16] A. Frantzis, *Does Acoustic Testing Strand Whales?*, 392 Nature 29 (1998).

[17] *See* SACLANT Undersea Research Center, *Summary Record, La Spezia, Italy, 15-17 June 1998, SACLANTCEN Bioacoustics Panel, SACLANTCEN M-133* (1998).

[18] M. Simmonds & L.F. Lopez-Jurado, *Whales and the Military*, 337 Nature 448 (1991).

[19] *Id*.

[20] *Id*.

[21] R.L. Brownell, Jr. *et al*., *Mass Strandings of Cuvier's Beaked Whales in Japan: U.S. Naval Acoustic Link* (IWC Doc. SC/56E37). As in the case of many of the other incidents discussed above, most of the animals involved in these incidents over the years were observed to have stranded live.

> range of U.S. Navy ships participating in the biennial Rim of the Pacific (RIMPAC) tactical naval exercises there. Two hundred of the normally deep-water whales crowded into shallow waters very near shore, an event that apparently had never before been seen in Kaua'i. According to a biologist observer associated with NMFS, the pod appeared quite stressed. In the ensuing chaos, one juvenile member of the pod stranded and died. After learning of this unusual whale behavior, the Navy agreed to restrict the active sonar operations in its RIMPAC exercises.[22]
>
> While it is, of course, too early to know with certainty whether this stranding is the latest in the string of whale deaths caused by mid-frequency sonar, the timing of so unusual an event with Navy maneuvers is disturbing. Though we certainly support NMFS' decision to conduct an investigation into its cause, NMFS' recent history of investigative errors and mismanagement in similar cases makes us less assured by the promise of such an investigation here than we would hope to be.[23]

The evidence is clear that beaked whales, a group of deep-water species that are seldom seen and may in some cases be extremely rare, are particularly vulnerable to the effects of mid-frequency sonar. As a 2000 study undertaken by the Smithsonian Institution indicates, every mass stranding on record involving multiple species of beaked whales has occurred with naval activities in the vicinity.[24] But the global magnitude of the problem is not known. Given that most of the world lacks networks to identify and investigate stranding events, particularly those that involve individual animals spread out over long stretches of coastline, the mortalities of beaked whales identified thus far are likely to represent only a subset of a substantially larger problem.

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[22] This account incorporates details as reported by Jan TenBruggencate in *Whale Dies After Pod Returns to Sea*, Honolulu Advertiser, July 7, 2004. *See also* Marc Kaufman, *Whales' Plight Revives Sonar Theory*, Washington Post, July 11, 2004 at A1 (detailing incident).

[23] For example and as mentioned *supra*, NMFS' preliminary report into the Haro Strait incident observes that freezer artifacts and other problems incidental to the preservation of tissue samples made the cause of death in most specimens difficult to determine, and also made it impossible to assess the role of acoustic trauma in those deaths—though acoustic trauma could not be ruled out. National Marine Fisheries Service, *Preliminary Report: Multidisciplinary Investigation of Harbor Porpoises (Phocoena phocoena) Stranded in Washington State from 2 May – 2 June 2003 Coinciding with the Mid-Range Sonar Exercises of the USS* Shoup 2 (2004). Furthermore, the report contains no indication that investigators properly looked for the pathologies reported, in *Nature*, to have occurred in whales stranded in the Canary Islands event of September 2002. Finally, the report fails to address the highly unusual orca and porpoise "stampede" behavior, and the unusual behavior of at least one minke whale, observed in the Strait concurrent with the Navy's mid-frequency testing. It is our hope that NMFS' investigation into this Hawaii incident will be thorough and transparent, and that it will avoid the mistakes of Haro Strait. In particular, we urge NMFS to inquire into and address all aspects of the event, including the Hawaii pod's unusual behavior.

[24] Marine Mammal Program of the National Museum of Natural History, *Historical Mass Mortalities of Ziphiids* 2-4 (Apr. 6, 2000); *see also* 2 J. Cetacean Res. & Mgmt., Supp., Annex J at § 13.8 (2000) (report of the IWC Scientific Committee, Standing Working Group on Environmental Concerns).

It should be noted that beaked whales are not necessarily the only species vulnerable to these severe effects, and that a variety of other cetaceans, including minke whales and pygmy sperm whales, have stranded in past events as well.[25]

Furthermore, although the physical process linking sonar to strandings is not well understood, it appears from the record that debilitating, possibly lethal injuries are occurring in whales exposed to sonar at sea. According to a recent report in the journal *Nature*, animals that came ashore during sonar exercises off the Canary Islands in September 2002 had developed large emboli in their organ tissue. The report suggested that the animals had suffered from severe symptoms resembling those of decompression sickness, or "the bends," either because panic led them to surface too rapidly or because the sound itself precipitated the growth of nitrogen bubbles in the blood, which expanded to devastating effect.[26] At this point the evidence is considered "compelling" that acoustic trauma, or injuries resulting from behavioral responses, has in some way led to the deaths of these animals.[27]

That beaked whales are suffering injury independent of their actually turning up on shore would be consistent with one of the most disturbing findings from the Bahamas, the only stranding event for which baseline survey data on these species are available. Since the Navy's sonar vessels passed through in March 2000 causing whales to strand, the area's Cuvier's beaked whales have all but disappeared, leading researchers who have studied the population for years to conclude that nearly all of the animals either died of physical injury or were driven to permanently abandon their habitat.[28]

Mass mortalities, though an obvious focus of much reporting and concern, are likely only the tip of the iceberg of mid-frequency sonar's harmful effects. Marine mammals are believed to depend on sound to navigate, find food, locate mates, avoid predators, and communicate with each other. Flooding their habitat with man-made, high-intensity noise interferes with these and other activities. In addition to strandings and non-auditory injuries, the harmful effects of high-intensity sonar may include:

- temporary or permanent loss of hearing, which impairs an animal's ability to communicate, avoid predators, and detect and capture prey;

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[25] Commerce & Navy, *Joint Interim Report* at iii (minke whales); Martin *et al*., *Mass Strandings of Beaked Whales* at 35 (pygmy sperm whales); *see also* National Marine Fisheries Service, *Preliminary Report* (harbor porpoises).

[26] *See* P.D. Jepson *et al.*, *Gas-Bubble Lesions in Stranded Cetaceans,* 425 Nature 575-576 (2003).

[27] Evans and Miller, *Concluding Remarks*, *in Proceedings of the Workshop on Active Sonar and Cetaceans* (P.G.H. Evans & L.A. Miller eds., 2004).

[28] Declaration of Kenneth Balcomb, *NRDC v. Evans*, 279 F.Supp.2d 1129 (N.D. Cal. 2003); telephone interview with Kenneth Balcomb, Executive Director and Research Biologist, Center for Whale Research (May 5, 2004).

- avoidance behavior, which can lead to abandonment of habitat or migratory pathways, and disruption of important behaviors such as mating, feeding, nursing, or migration;

- aggressive (or agonistic) behavior, which can result in injury;

- masking of biologically meaningful sounds, such as the call of predators or potential mates; and

- declines in the availability and viability of prey species, such as fish and shrimp.[29]

Of course, the Navy is well aware of this growing body of evidence of harm caused by high-intensity active sonar and has itself concluded that such sonar may be dangerous to marine mammals. In the Environmental Impact Statement conducted by the Navy in preparation for deploying a new, low-frequency active sonar system—a system that has now been enjoined from widespread use by a U.S. District Court because of its potential effects on marine mammals and fish[30]—the Navy wrote:

> There is growing evidence that man-made sounds can sometimes disturb marine mammals . . . Many marine mammals rely on sound for communication, navigation, or detection of predators and prey. *Disruption of any of these biologically important functions could interfere with normal activities and behavior, and thereby might impact the reproductive success of individuals and eventually the size of a population.*

Although the Navy has begun to acknowledge the danger of active sonar, we are concerned that, at the same time, it has failed to take meaningful action to address those dangers in a manner consistent either with its responsibilities under federal law or its own acknowledged commitment to environmental stewardship. These responsibilities are outlined briefly below.

III. Obligations to Mitigate Impacts from Mid-Frequency Sonar

In light of the mass mortalities of whales that have already been documented and the range of other potential harms described above, both the biological impacts of

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[29] For a review of research on behavioral and auditory impacts of undersea noise, see, *e.g.*, W. John Richardson *et al.*, *Marine Mammals and Noise* (1995); National Research Council, *Ocean Noise and Marine Mammals* (2003); and P. Tyack, Behavioral Impacts of Sound on Marine Mammals, Presentation to the U.S. Marine Mammal Commission Advisory Committee on Acoustic Impacts on Marine Mammals (February 4, 2004). Dramatic behavioral responses to mid-frequency sonar have been documented in orcas, minke whales, and harbor porpoises. *See*, *e.g.*, Associated Press, *Navy Confirms Using Sonar in Haro Strait*, Seattle Times, May 15, 2003; and Elizabeth Gillespie, *Navy Sonar May Have Spooked Orcas, Porpoises*, Seattle Times, May 9, 2003.

[30] *NRDC v. Evans*, 279 F.Supp.2d 1129 (N.D. Cal. 2003).

mid-frequency sonar and the Navy's protocol for training with and use of these systems must be reassessed.[31] Simply stated, we believe there is no question that the Navy's practices with respect to mid-frequency active sonar regularly violate the provisions of several federal statutes enacted to protect marine species and the environment. In planning for and implementing its mid-range sonar program (including testing and exercises), therefore, it is critical that the Navy comply with the following relevant obligations:

First, the Marine Mammal Protection Act ("MMPA"), 16 U.S.C. §§ 1361 *et seq.*, requires all federal agencies, including the Navy, to obtain a permit or other authorization from the National Marine Fisheries Service ("NMFS") or U.S. Fish and Wildlife Service prior to any "take" of marine mammals, whether on the high seas or in waters under U.S. jurisdiction. *See, e.g., Natural Resources Defense Council v. United States Department of the Navy*, 857 F. Supp. 734 (C.D. Ca. 1994); *Natural Resources Defense Council v. Evans*, 279 F.Supp.2d 1129 (N.D. Cal. 2003). The amendments to the MMPA enacted last year through the National Defense Authorization Act do not relieve the Navy of this obligation. *See* NDAA for FY 2004, Pub. L. No. 108-136, § 319 (2003).

To prevent significant harm to marine mammals from mid-frequency sonar, training exercises using such sonar should be undertaken only after the Navy has obtained authorization under the MMPA. 16 U.S.C. § 1371(a)(5). Obtaining such authorization will, among other things, assure that the Navy has worked with the proper federal environmental agency to develop minimum mitigation measures—measures that could prevent strandings and other needless injury at no cost to military readiness.

We recognize, of course, that the Navy is not without some flexibility in obtaining such authorization. For example, it is free to seek an authorization for each separate exercise as it arises. In many cases, however, the Navy may want to consider submitting applications for broader authorization under the MMPA encompassing more than one exercise, especially where such exercises are related geographically, temporally or technologically. The Navy might then be able to supplement such authorizations only as needed for subsequent individual actions.

Second, the federal Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531 *et seq.*, requires federal agencies to enter into formal consultation with NMFS or the Fish and Wildlife Service and receive a legally valid Incidental Take Permit prior to its "take" of any endangered or threatened marine mammals or other threatened or endangered species, including fish, sea turtles, or birds, or its "adverse modification" of critical habitat. *See*, *e.g.*, 16 U.S.C. § 1536(a)(2); *Romero-Barcelo v. Brown*, 643 F. 2d 835 (1st Cir. 1981), *rev'd on other grounds*, *Weinberger v. Romero-Barcelo*, 456 U.S.

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[31] This letter does not address the Navy's use of these systems in time of war or heightened threat conditions.

304, 313 (1982). Under NMFS' regulations, formal consultation *must* be requested by the Navy (or by NMFS) and reinitiated where "new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered." 50 C.F.R. § 402.16.

Here, the significant evidence of harm from mid-frequency sonar requires the Navy to engage in formal consultation with the proper federal environmental agency and to obtain an Incidental Take Permit under ESA for ongoing and future mid-frequency sonar exercises. Such exercises clearly qualify as actions that may "adversely affect" endangered or threatened species. 50 C.F.R. § 402.14. Again, the Navy has considerable flexibility in conducting such consultations and obtaining such authorizations under ESA. As with the MMPA, in many cases the Navy may want to consider submitting related Navy actions together for a program-wide consultations and authorizations, to be supplemented only as needed for individual actions that fall within the authorized program.

Third, the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4332(2)(C) and (E), establishes mandatory procedures for objective disclosure and analysis of a project's individual and cumulative environmental impacts, consideration of alternatives, and identification of feasible mitigation to ensure that the project will not needlessly or carelessly destroy or harm the affected environment or species. *See*, *e.g.*, *Tongass Conservation Society v. Cheney*, 924 F. 2d 1137 (D.C. Cir. 1991); *Natural Resources Defense Council*, 857 F. Supp. at 738-39. These procedures may also apply to federal actions that take place outside U.S. jurisdiction. *Natural Resources Defense Council v. United States Department of the Navy* (C.D. Cal. 2002).[32]

In this context the Navy is required to satisfy NEPA with respect to all future tests or training exercises involving the use of mid-frequency sonar. *Oregon Natural Resources Council v. Lyng*, 882 F.2d 1417, 1421 (9th Cir. 1989). Under the circumstances here, we believe that NEPA will often require the preparation of an EIS or EA for such exercises. As with the ESA and MMPA requirements detailed above, however, the Navy may fulfill its obligations under NEPA in varying ways. In place of conducting full-scale environmental reviews or EAs for each exercise, the Navy may choose to prepare one programmatic EIS for series of tests or exercises that are sufficiently related to constitute a single program. For each individual action within that program, the Navy may then simply "tier" an EA review as appropriate. *See* 40 C.F.R. §§ 1502.20, 1508.28; *see also City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990). Conducting such programmatic reviews would also allow the Navy to account accurately for cumulative effects and avoid piecemealing

[32] Similar requirements for extraterritorial activities are imposed by Executive Order. *See* Exec. Order No. 12114, 44 Fed. Reg. 1957 (1979), reprinted in 42 U.S.C. § 4321; 32 U.S.C. § 187 (implementing regulations).

environmental harms of multiple mid-frequency exercises. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990).

To the best of our knowledge, the Navy routinely conducts training operations using mid-frequency sonar without having reviewed its planned actions for their potential environmental impacts under NEPA, without having consulted NMFS about adverse effects on endangered species under ESA, and without having received the required authorization for "takes" of marine mammals under the MMPA. This was true, for example, of the May 2003 exercise conducted aboard the USS *Shoup* in Haro Strait, a test that clearly had the potential to affect the marine environment and, in particular, to harm cetaceans such as the highly depleted population of orcas that are resident in the area. It is possible that the impacts of that exercise could have been avoided had the *Shoup* trained in marginally different waters or utilized other mitigation measures. We strongly believe that engaging in the regulatory process, as indeed the law requires, would result in real environmental benefits without detracting from military readiness.

As part of its environmental review, for example, the Navy should consider, at a minimum, the following measures for preventing and mitigating the impacts of its mid-frequency exercises:

(1) Carefully avoid beaked whale habitat in the siting of sonar tests and exercises;

(2) Avoid concentrations of other marine mammals – and other marine species that may also be affected – by identifying low-risk areas for use in routine training, consistent with mission demands;[33]

(3) As a supplement to geographic avoidance, establish and monitor a safety zone to the greatest practicable distance around transmit vessels;[34]

(4) Conduct pre-operational surveys of marine mammals and endangered species beyond the safety zone;

(5) Conduct post-operational surveys for dead or injured marine mammals and other species;

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[33] Rather than go through the business of identifying exclusion zones around the world, a task that would be both difficult and capricious given our current state of knowledge about species abundance, we believe it may be far more efficient – and significantly more protective of marine mammals – to establish specific areas for use.

[34] It was recognized at the recent scientific workshop on beaked whales (convened by the Marine Mammal Commission) that established forms of monitoring of these species are ineffective at most sea states. J. Barlow, Presentation to the Marine Mammal Commission Beaked Whale Workshop (Apr. 14, 2004). This only underscores the point that monitoring for marine mammals around a sonar vessel is no substitute for careful siting.

(6) Provide funding to stranding networks in the vicinity of sonar exercises, and investigate any strandings or deaths of marine mammals that may be associated with the use of mid-frequency sonar in a publicly open, inclusive, and transparent manner;

(7) Research ways to alter the characteristics of the sonar signal (a measure that the French Navy is purportedly considering), so as to reduce the likelihood of pathologies such as have been seen in beaked whales;

(8) Reduce the source level of the sonar signal to the maximum extent practicable;

(9) Conduct a review into the practicability of reducing the number or tempo of active sonar exercises; and

(10) Conduct a review into the potential of less intrusive, alternative technologies to substitute for current mid-frequency systems, and provide funding for development of promising alternatives that are identified in this process.[35]

We strongly believe that incorporating these or similar measures into the Navy's sonar exercise protocols, as the law requires, would result in real environmental benefits without detracting from military readiness.

V. Conclusion

Each of the undersigned organizations and their members are committed to ensuring that marine mammals and other ocean species are protected in accordance with federal environmental law, and we firmly believe that this goal can be met without undermining the Navy's ability to train our servicemen and women. And we recognize that the Navy, too, has an interest in addressing any unintended adverse consequences associated with the use of high intensity sonar. Even apart from its commitment to environmental stewardship, the Navy is not well served by the perception that it is needlessly contributing to the death or injury of marine species or the degradation of their habitat by its use of high intensity sonar. We are hopeful, therefore, that, through cooperative effort, we can find ways, consistent with our respective goals, to address this problem.

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[35] National Research Council, *Ocean Noise and Marine Mammals*

We would welcome the opportunity to discuss these matters with you and your staff. In order to avoid the necessity of more formal action in this matter, we invite you once again to contact us to begin such discussions.

Very truly yours,

Joel Reynolds
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Director, Marine Mammal Protection Program
NRDC

Jean-Michel Cousteau
President and Founder
Ocean Futures Society

Frederick M. O'Regan
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