

SUBMARINES, SONAR, AND THE DEATH OF WHALES: ENFORCING THE DELICATE BALANCE OF ENVIRONMENTAL COMPLIANCE AND NATIONAL SECURITY IN MILITARY TRAINING

JOEL R. REYNOLDS*

Few of us would dispute the critical role of the military in our society. Recognition of the importance of defense readiness is ubiquitous, from Presidential oratory to the national budget to daily media reports. It is no great surprise, then, that the military services would emphasize this special role, even without an applicable statutory national security exemption, in defending virtually any of their actions challenged through our legal system, both in administrative agency proceedings and in the courts.¹ Perhaps the height of judicial abdication in the face of such a claim came in *Korematsu v. United States*,² upholding the U.S. Army's infamous internment of Japanese Americans during World War II, but that case is not unique in the Pentagon's reliance on national security as an overriding justification for judicial deference.

Similar claims have been asserted consistently—but with less success—by the U.S. Navy in defending its compliance with our environmental laws. Most recently, for example, the courts have considered this justification in connection with the Navy's contribution to the growing problem of undersea noise pollution.³ Legal challenges have sought to

* Joel R. Reynolds is a Senior Attorney with the Natural Resources Defense Council ("NRDC") and Director of its Marine Mammal Protection Project, based in Los Angeles, California. This article is an expansion of a presentation by the author at William and Mary Law School on February 10, 2007. The author gratefully acknowledges the work of Michael Jasny, Senior Policy Analyst with NRDC and principal author of its report on undersea noise, *SOUNDING THE DEPTHS II: THE RISING TOLL OF SONAR, SHIPPING AND INDUSTRIAL OCEAN NOISE ON MARINE LIFE* (2005), available at <http://www.nrdc.org/wildlife/marine/sound/sound.pdf>, cited repeatedly below.

¹ See generally Stephen Dycus, *Osama's Submarine: National Security and Environmental Protection After 9/11*, 30 WM. & MARY ENVTL. LAW & POL'Y REV. 1 (2005).

² *Korematsu v. United States*, 323 U.S. 214, 218, 223 (1944) ("We cannot reject as unfounded the judgment of the military authorities . . . that there were disloyal members of that [Japanese American] population, whose number and strength could not be quickly and precisely ascertained.").

³ See MICHAEL JASNY ET AL., *SOUNDING THE DEPTHS II: THE RISING TOLL OF SONAR, SHIPPING AND INDUSTRIAL OCEAN NOISE ON MARINE LIFE* 28 (2005), available at <http://www.nrdc.org>

address the environmental effects of testing and training by the Navy with heavy explosives and high-intensity active sonar used for long-range detection of submarines throughout the oceans of the world.⁴

This article will survey the series of cases filed by the Natural Resources Defense Council ("NRDC") and others since 1994. First, it will describe the gathering scientific consensus on the range of impacts associated with exposure to high-intensity ocean noise. Second, it will consider efforts, both domestically and around the world, to identify and reduce those impacts, even in the face of claims by the U.S. Navy that the potential impacts are exaggerated and, in any case, a necessary, legal, and acceptable consequence of securing our national defense. In particular, it will focus on the use of high-intensity active sonar by the U.S. Navy and on the federal courts' response to the ongoing efforts of conservation groups, primarily through litigation, to compel the Navy to protect the marine environment by (1) complying with federal and state environmental laws and (2) mitigating the adverse impacts associated with the use of this technology.

I. THE RISE OF OCEAN NOISE POLLUTION

Because light does not penetrate far below the surface of the oceans, many marine species have evolved to depend on sound, much like humans depend on sight, as they avoid predators, hunt for prey, find mates, navigate the oceans, and communicate.⁵ Over the past century, however, their marine world has been transformed by human activity and clouded by a growing acoustic smog. Noise has become a pervasive form of ocean pollution, generated by oil exploration, seismic surveys, ship traffic, underwater explosives, high-powered sonar, anti-predator devices, shoreline development, and a host of other commercial, military, and industrial sources, from massive air cannons to countless jet skis.⁶

Over the past decade, a rapidly accumulating body of evidence has shown that the energy generated by these sources of noise can kill and physically injure marine mammals, fish, and other ocean life. Noise pollution can cause marine mammals to abandon their habitat or alter their behaviors and can mask natural sounds, such as the calls of mates

/wildlife/marine/sound/sound.pdf.

⁴ *Id.*

⁵ *Id.* at 2.

⁶ *Id.* at 5.

and predators, that may be critical for them to hear.⁷ Several dramatic and widely-reported mass beaked whale strandings in recent years associated with high-intensity sonar have shown that noise pollution can also cause more direct mortality of marine mammals.⁸ Studies also suggest that intense noise may cause similar effects, including habitat abandonment, in a variety of commercially-harvested species of fish and may be linked to giant squid and snow crab mortality.⁹ In isolation, or together with other stressors on the marine environment, the rise of undersea noise presents a significant and growing long-term threat to the health of our oceans.¹⁰

Of the three leading contributors to the problem—military active sonar, high-energy seismic surveys,¹¹ and commercial shipping¹²—active sonar systems have attracted the greatest notoriety. These systems, developed by the U.S. Navy and other navies of the world, use powerful sound

⁷ *Id.* at 13, 16.

⁸ *See infra* notes 24-43 and accompanying text.

⁹ JASNY ET AL., *supra* note 3, at 15-16.

¹⁰ In deep water, background noise seems to be growing by about three to five decibels per decade in the band occupied by commercial ships. In some areas near the coast, the sound is persistently several orders of magnitude higher than in less urbanized waters, raising concerns about chronic impacts on marine life.

Id. at iv. *See generally* L.S. Weilgart, *The Impacts of Anthropogenic Ocean Noise on Cetaceans and Implications for Management*, 85 CAN. J. ZOOLOGY 1091 (2007).

¹¹ High-energy seismic surveys are used by industry to detect oil and gas deposits beneath the ocean floor. Surveys typically involve firing airguns every few seconds at intensities that, in some cases, can drown out whale calls over tens of thousands of square miles. The industry conducts more than 100 seismic surveys each year off the coast of the United States, and that could increase significantly with the passage of the Energy Policy Act of 2005, which mandates an inventory of the entire U.S. outer continental shelf. Global hotspots . . . include the Gulf of Mexico, the North Sea, and the west coast of Africa.

JASNY ET AL., *supra* note 3 at iv-v.

¹² The low-frequency rumble of engines, propellers, and other commercial shipping noise can be heard in virtually every corner of the ocean. Over the last 75 years, the number of merchant ships has tripled, and their cargo capacity (which relates roughly to the amount of sound they produce) has increased steadily. Some believe that the biggest ships will become faster and larger still, possibly tripling in capacity, and that their numbers will double over the next 20 to 30 years. Increasingly, short hauls between ports could take cargo ships nearer to shore—directly through coastal habitat for many marine species.

Id. at iv.

waves to detect submarines and other undersea objects of interest. Mid-frequency tactical sonar, widely deployed by the U.S. Navy for decades (currently on over fifty percent of its vessels),¹³ has been linked to numerous whale strandings throughout the world. Low-frequency sonar, deployed by the U.S. Navy only within the past decade for extended-range submarine detection principally in the deep ocean, can affect marine mammals across hundreds of miles because of the power and intensity of the sound waves.¹⁴ Both types of sonar are proliferating worldwide and are used increasingly in coastal waters.¹⁵

There is no longer a serious scientific debate about the connection between sound and marine mammal mortality. A range of experts, from the International Whaling Commission's ("IWC") Scientific Committee to the U.S. Navy's own commissioned scientists, have agreed that the evidence linking mass strandings to mid-frequency sonar is "convincing" and "overwhelming."¹⁶ Consultants retained by the Navy concluded that "the evidence of sonar causation is, in our opinion, completely convincing and that therefore there is a serious issue of how best to avoid/minimize future beaching events."¹⁷ Potentially related strandings have occurred repeatedly around the world, with stranded animals found with bleeding around the brain, emboli in the lungs, and lesions in the liver and kidneys, symptoms resembling a severe case of decompression sickness, or "the bends."¹⁸ Because these injuries occurred in the water, before the animals stranded, scientists are concerned that whales turning up on shore may represent only the tip of the iceberg, with substantially larger numbers dying offshore. Other sources of noise, such as the airguns used in seismic surveys, may have similar effects.¹⁹

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

¹³ United States Navy, Whales and Sonar, Understanding Sonar, http://www.whalesandsonar.navy.mil/understanding_sonar.htm (last visited Apr. 6, 2008).

¹⁴ JASNY ET AL., *supra* note 3, at iv.

¹⁵ *Id.*

¹⁶ INT'L WHALING COMM'N, 2004 REPORT OF THE SCIENTIFIC COMMITTEE 12 (2004), available at http://de.wdcs.org/laerm/download/IWC2004_Sci_Comm_Report.pdf.

¹⁷ H. LEVINE ET AL., ACTIVE SONAR WAVEFORM 1 (2004), available at <http://www.fas.org/irp/agency/dod/jason/sonar.pdf>.

¹⁸ See P.D. Jepson et al., *Gas-Bubble Lesions in Stranded Cetaceans*, 425 NATURE 575 (2003).

¹⁹ See *id.*

of mid-frequency sonar.²⁰ For example, in March 2000 sixteen whales from at least three different species stranded over 150 miles of shoreline along the northern channels of the Bahamas.²¹ These beachings occurred within twenty-four hours of U.S. Navy ships using mid-frequency sonar (AN/SQS-53C and AN/SQS-56) in those same channels.²² Post-mortem examinations found, in every whale 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 debilitating and potentially severe.²³ 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 coinciding with military activities and active sonar that have now been documented:

- Between 1985 and 1989, at least three separate mass strandings of beaked whales occurred in the Canary Islands, as reported in *Nature*.²⁴ 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. It was reported that mass live strandings occurred each time exercises took place in the area.²⁵
- In 1996, twelve Cuvier's beaked whales stranded along 38.2 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.²⁶ A subsequent NATO

²⁰ JASNY ET AL., *supra* note 3, at 6.

²¹ See U.S. DEP'T OF COMMERCE & SEC'Y OF THE NAVY, JOINT INTERIM REPORT, BAHAMAS MARINE MAMMALS STRANDING EVENT OF 15-16 MARCH 2000, at 16 (2001) [hereinafter COMMERCE & NAVY INTERIM REPORT], available at http://awionline.org/oceans/Noise/Interim_Bahamas_Report.pdf.

²² *Id.* at iv.

²³ *Id.* at 16.

²⁴ M. Simmonds & L. Lopez-Jurado, *Whales and the Military*, 337 NATURE 448 (1991).

²⁵ *Id.*

²⁶ A. Frantzis, *Does Acoustic Testing Strand Whales?*, 392 NATURE 29 (1998).

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.²⁷

- In January 1998, according to a National Marine Fisheries Service ("NMFS") biologist, a beaked whale "stranded suspiciously" at Vieques as naval exercises were about to commence offshore.²⁸ Another beaked whale stranded mysteriously in the same area and under similar circumstances in May 2000.
- 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."²⁹
- 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.³⁰
- In April 2002, a beaked whale and a humpback whale stranded near Vieques while a battle group training exercise was taking place offshore.³¹
- In September 2002, at least fourteen beaked whales from three different species stranded in the

²⁷ *Id.*

²⁸ Personal communication of Eric Hawk, Biologist, NMFS, to Ken Hollingshead, NMFS (Feb. 12, 2002).

²⁹ Personal communication of Dr. David Nellis, Biologist, U.S. Virgin Island Dep't of Fish & Game, to Eric Hawk, Biologist, NMFS (Oct. 1999); E-mail from Ken Hollingshead, NMFS, to John Mayer (Mar. 19, 2002) (on file with author).

³⁰ *Environmental Legislative Proposals: Hearing Before the S. Subcomm. on Readiness and Management Support of the S. Armed Services Comm.*, 108th Cong. 2-3 (2003) (testimony of Dr. Darlene R. Ketten, Assistant Professor, Harvard Medical School), available at <http://armed-services.senate.gov/statemnt/2003/April/Ketten.pdf>.

³¹ E-mail from Ken Hollingshead, NMFS, to Joe Johnson and Clay Spikes (Apr. 11, 2002) (on file with author).

Canary Islands. Four additional beaked whales stranded over the next several days.³² The strandings occurred while a NATO contingent, including at least one U.S. ship equipped with mid-frequency sonar, was conducting anti-submarine warfare exercises in the vicinity.³³

- In May 2003, the U.S. Navy vessel *USS Shoup* was testing its mid-frequency sonar system while passing through Haro Strait, off the coast of Washington State. 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.³⁴ 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.³⁵
- In summer 2004, during the Navy’s conduct of a major training exercise off Hawaii, called RIMPAC 2004, some 150-200 whales from a species that is rarely seen near shore and had never naturally mass-stranded in Hawaii came into Hanalei Bay, on the island of Kaua’i. The whales crowded into the shallow bay waters and milled there for over twenty-eight hours. Though the whales were ultimately assisted into deeper waters by members of a local stranding network, one whale calf was left

³² Vidal Martin et al., *Mass Strandings of Beaked Whales in the Canary Islands in Proceedings of the Workshop on Active Sonar and Cetaceans*, 42 EUR. CETACEAN SOC’Y NEWSL. 33 (European Cetacean Society), Feb. 2004, at 33.

³³ Kenneth R. Weiss, *Sonar Tests a Likely Link to Whale Deaths*, L.A. TIMES, Oct. 1, 2002, at A3.

³⁴ *Navy Sonar Incident Alarms Experts*, MARINE CONNECTION, May 16, 2003, http://www.marineconnection.org/archives/marine_impacts/marine_navy_sonar_incident_alarms_experts.htm.

³⁵ S.A. NORMAN ET AL., MULTIDISCIPLINARY INVESTIGATION OF STRANDED HARBOR PORPOISES (*PHOCOENA PHOCOENA*) IN WASHINGTON STATE WITH AN ASSESSMENT OF ACOUSTIC TRAUMA AS A CONTRIBUTORY FACTOR (2 MAY-2 JUNE 2003), at 50, available at <http://www.nmfs.noaa.gov/pr/pdfs/acoustics/porpoise.pdf>. 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.* at 55. A final report is pending.

behind and found dead the next day. NMFS undertook an investigation of the incident and concluded that the Navy's nearby use of sonar in RIMPAC 2004 was a "plausible, if not likely contributing factor" in the stranding.³⁶

- Also in July 2004, two dead whales floated onto the shores of one of the Canary Islands, potential casualties of nearby sonar activities undertaken as part of a NATO exercise.³⁷ A third whale is believed to have been seen floating offshore. The whales had been dead for a couple of days before beaching, and, according to one environmental expert with the island's local government, "[t]here is a strong suspicion that their deaths were related to the NATO exercises that finished a few days ago."³⁸
- In January 2005, during and just after a U.S. training exercise off North Carolina in which the *USS Kearsarge* Expeditionary Strike Group was engaged in anti-submarine training involving the use of mid-frequency active sonar, at least thirty-seven whales of three different species stranded and died along North Carolina's Outer Banks, including numerous pilot whales (six of which were pregnant), one newborn minke whale, and two dwarf sperm

³⁶ BRIAN L. SOUTHALLE ET AL., NOAA TECHNICAL MEMORANDUM NMFS-OPR-31, HAWAIIAN MELON-HEADED WHALE (*PEPONOCEPHALA ELECTRA*) MASS STRANDING EVENT OF JULY 3-4, 2004, at 2 (2006), available at http://www.nmfs.noaa.gov/pr/pdfs/health/stranding_melon-headedwhales_final_report.pdf.

While causation of this stranding event may never be unequivocally determined, we consider the active sonar transmissions of July 2-3, 2004, a plausible, if not likely, contributing factor in what may have been a confluence of events. This conclusion is based on: (1) the evidently anomalous nature of the stranding; (2) its close spatiotemporal correlation with wide-scale, sustained use of sonar systems previously associated with stranding of deep-diving marine mammals; (3) the directed movement of two groups of transmitting vessels toward the southeast and southwest coast of Kaua'i; (4) the results of acoustic propagation modeling and an analysis of possible animal transit times to the Bay; and (5) the absence of any other compelling causative explanation.

Id.

³⁷ See *Dead Whales Land in Canaries After Naval Exercises*, REUTERS NEWS, July 23, 2004.

³⁸ *Id.*

whales.³⁹ NMFS investigated the incident and found that the event was highly unusual, being the only mass stranding of offshore species ever to have been reported in the region, and that it shared “a number of features” with other sonar-related mass stranding events (involving offshore species which stranded alive and were atypically distributed along the shore).⁴⁰ NMFS concluded that sonar was a possible cause of the strandings and also ruled out the most common other potential causes, including viral, bacterial, and protozoal infection, direct blunt trauma, and fishery interactions.⁴¹

³⁹ A. HOHN ET AL., NOAA TECHNICAL MEMORANDUM. NMFS-SEFSC-537, MULTISPECIES MASS STRANDING OF PILOT WHALES (*GLOBICEPHALA MACRORHYNCHUS*), MINKE WHALE (*BALAENOPTERA ACUTOROSTRATA*), AND DWARF SPERM WHALES (*KOGIA SIMA*) IN NORTH CAROLINA ON 15-16 JANUARY 2005, at iii-iv (2006), available at <http://www.nmfs.noaa.gov/pr/pdfs/health/umese0501sp.pdf>.

⁴⁰ *Id.* at iv, 8.

⁴¹ *Id.* at 4.

[T]he event was associated in time and space with naval activity using mid-frequency active sonar. It also had a number of features in common (e.g., the “atypical” distribution of strandings involving multiple offshore species, all stranding alive, and without evidence of common infectious or other disease process) with other sonar-related cetacean mass stranding events. Given that this event was the only stranding of offshore species to occur within a 2-3 day period in the region on record (i.e., a very rare event), and given the occurrence of the event simultaneously in time and space with a naval exercise using active sonar, the association between the naval sonar activity and the location and timing of the event could be a causal rather than a coincidental relationship. However, evidence supporting a definitive association is lacking, and, in particular, there are differences in operational/environmental characteristics between this event and previous events where sonar has apparently played a role in marine mammal strandings. This does not preclude behavioral avoidance of noise exposure.

No harmful algal blooms were present along the Atlantic coast south of the Chesapeake Bay during the months prior to the event. Environmental conditions, including strong winds, changes in upwelling-to-downwelling-favorable conditions, and gently sloping bathymetry, were consistent with conditions which have been correlated with other mass strandings.

... [W]e cannot definitively conclude that there was or was not a causal link between anthropogenic sonar activity or environmental conditions (or a combination of these factors) and the strandings.

Id. at iv.

- In 2006, four Cuvier's beaked whales stranded on the Almerian coast of southern Spain, with the same suite of bends-like pathologies seen in the whales that stranded in the Canary Islands in 2002 and 2004. Investigators have confirmed the use of mid-frequency sonar in the area.⁴²
- As reported in the Scientific Committee of the IWC, 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 sixty-four 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.⁴³

Though a prominent focus of public concern and reporting in the media, these stranding events represent only one manifestation of injury related to exposure to intense noise.⁴⁴ Indeed, it is the cumulative impact that these stressors have on the behavior of marine mammals, particularly in already-depleted populations, that may pose the greatest threat: what has been called a "death of a thousand cuts."⁴⁵ Because marine

⁴² COMMANDER, HAW. RANGE COMPLEX, U.S. PAC. FLEET, HAWAII RANGE COMPLEX: DRAFT ENVIRONMENTAL IMPACT STATEMENT/ OVERSEAS ENVIRONMENTAL IMPACT STATEMENT 4-90 to 4-91 (2007).

⁴³ R.L. Brownell, Jr. et al., *Mass Strandings of Cuvier's Beaked Whales in Japan: U.S. Naval Acoustic Link*, IWC Doc. SC/56E37 (June 2004) (paper submitted to the IWC Scientific Committee, Sorrento, Italy) (on file with author). 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. *Id.*

⁴⁴ Letter from Joel Reynolds, Senior Attorney & Dir., Marine Mammal Protection Project, NRDC, to the Honorable Gordon R. England, Sec'y of the Navy, Dep't of the Navy 7 (July 2, 2004) [hereinafter NRDC Letter], available at <http://www.nrdc.org/media/docs/040714.pdf>.

⁴⁵ JASNY ET AL., *supra* note 3, at iv, v (quoting Dr. Sylvia Earle and stating that "preliminary attempts at modeling the 'energetics' of marine mammals (the amount of energy an animal has to spend to compensate for an intrusion) suggest that even small alterations in

mammals depend on sound to navigate, find food, locate mates, avoid predators, and communicate with each other, flooding their habitat with high-intensity, anthropogenic noise poses a substantial risk of interference with these and other activities.⁴⁶

In addition to strandings and non-auditory injuries, the harmful effects of high-intensity sound may include:

- temporary or permanent loss of hearing, which impairs an animal's ability to communicate, avoid predators, and detect and capture prey;
- 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.⁴⁷

Although marine mammals have received most of the attention, there are increasing signs that noise, like other forms of pollution, is capable of affecting the entire web of ocean life. Pink snapper exposed to airgun pulses have been shown to suffer virtually permanent hearing loss,⁴⁸ and an air gun survey across an expansive area in the Barents Sea correlated

behavior could have significant consequences for reproduction or survival if repeated over time").

⁴⁶ NRDC Letter, *supra* note 44, at 7.

⁴⁷ NRDC Letter, *supra* note 44, at 7-8. For a review of research on behavioral and auditory impacts of undersea noise, see W. JOHN RICHARDSON ET AL., MARINE MAMMALS AND NOISE (1995); NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., OCEAN NOISE AND MARINE MAMMALS (2003); Peter L. Tyack, Woods Hole Oceanographic Inst., Presentation to the U.S. Marine Mammal Commission Advisory Committee on Acoustic Impacts on Marine Mammals, Behavioral Impacts of Sound on Marine Mammals (Feb. 4, 2004), available at http://www.mmc.gov/sound/plenary1/pdf/plenary%201_tyack.pdf. Dramatic behavioral responses to mid-frequency sonar have been documented in orcas, minke whales, and harbor porpoises. See *Navy Confirms Using Sonar in Haro Strait*, SEATTLE TIMES, May 15, 2003; Elizabeth Gillespie, *Navy Sonar May Have Spooked Orcas, Porpoises*, SEATTLE TIMES, May 9, 2003.

⁴⁸ Robert McCauley et al., *High Intensity Anthropogenic Sound Damages Fish Ears*, 113 J. OF THE ACOUSTICAL SOC'Y OF AM. 638, 641 (2003).

with a plummet in the catch rates of haddock and cod.⁴⁹ Indeed, fishermen in various parts of the world have complained of declines in catch after intense acoustic activities, like oil-and-gas surveys and sonar exercises, moved onto their grounds, suggesting that noise is seriously altering the behavior of commercial species.⁵⁰ There are several other species that are potentially vulnerable, including brown shrimp, snow crabs, and the giant squid, which has already had mass strandings near airgun surveys.⁵¹

As evidence mounts of the harm caused by high-intensity sound to marine mammals and other ocean life, so do the calls for action to mitigate this harm, both in the United States and around the world.

II. EMERGING RESPONSE

A.

Domestic Statutes

Although there is no domestic or international law to deal comprehensively with ocean noise, several federal environmental laws provide a basis for regulation of at least some anthropogenic noise sources. In planning for and implementing noise-generating activities subject to domestic regulatory jurisdiction, therefore, it is critical that generators consider at least the following relevant statutes:

- The Marine Mammal Protection Act⁵² (“MMPA”) requires all federal agencies, including the Navy, to obtain a permit or other authorization from NMFS or the 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.⁵³ Congress found that these species needed additional protection because of their cultural and ecological significance,

⁴⁹ JASNY ET AL., *supra* note 3, at 15; *see also* McCauley et al., *supra* note 48, at 640.

⁵⁰ *See* JASNY ET AL., *supra* note 3, at 30-35.

⁵¹ *Id.* at v, 15-16; *see also* A. Guerra et al., *A Review of Records of Giant Squid in the North-Eastern Atlantic and Severe Injuries in Architeuthis dux Stranded After Acoustic Exploration* (Sept. 22, 2004) (paper presented to the Annual Science Conference of the International Council for the Exploration of the Sea, Vigo, Spain).

⁵² Marine Mammal Protection Act, 16 U.S.C. §§ 1361-1471 (2000).

⁵³ *See, e.g.*, NRDC v. Evans, 279 F. Supp. 2d 1129, 1141-42 (N.D. Cal. 2003); NRDC v. U.S. Dep't of the Navy, 857 F. Supp. 734, 737-38 (C.D. Cal. 1994) (requiring NMFS to consider reasonable alternatives that would minimize takings).

their potential vulnerability, and the exceptional difficulty of measuring the impacts of human activities on marine mammals in the wild.⁵⁴ Congress amended the MMPA in 2003 through the National Defense Authorization Act.⁵⁵

- The Endangered Species Act⁵⁶ (“ESA”) requires federal agencies to obtain an Incidental Take Permit before they engage in an activity that may “take” any threatened marine mammal or an endangered species. These permits must be obtained through formal consultation with NMFS or the Fish and Wildlife Service and apply additionally to any “adverse modification” of critical habitat.⁵⁷ Under NMFS’s regulations, formal consultation *must* be requested and reinitiated where an agency discovers unforeseen effects on any listed species or critical habitat.⁵⁸
- The National Environmental Policy Act⁵⁹ (“NEPA”) 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

⁵⁴ 16 U.S.C. § 1361.

⁵⁵ National Defense Authorization Act for Fiscal Year 2004, Pub. L. No. 108-136, 117 Stat. 1433 (2003).

⁵⁶ Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884.

⁵⁷ *See, e.g.*, 16 U.S.C. § 1536(a)(2) (2000); *Romero-Barcelo v. Brown*, 643 F.2d 835, 856-57 (1st Cir. 1981), *rev’d on other grounds*, *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982). Under the ESA, the action agency must first consult informally with the appropriate wildlife agency to determine if there are endangered species at the site of the proposed project. 16 U.S.C. § 1536(a)(2). If endangered species may be present, the action agency prepares a Biological Assessment (“BA”) to identify any endangered or threatened species that are likely to be affected by the proposed action. *Id.* at § 1536(c). If the BA suggests that listed species may be affected, the Fish and Wildlife Service or NMFS prepares a Biological Opinion explaining how the proposed action will affect listed species or their critical habitat and suggesting alternatives for the action agency to take to avoid the adverse impact. *Id.* at § 1536(b)(3)(A). If the agency agrees to take measures to avoid jeopardizing or adversely affecting the endangered species and critical habitat, the wildlife agency can issue an Incidental Take Statement, allowing the action agency to proceed with its proposed project. *Id.* at § 1536(b)(4).

⁵⁸ 50 C.F.R. § 402.16 (2006).

⁵⁹ National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970).

not needlessly or carelessly destroy or harm the affected environment or species.⁶⁰ This act also applies extraterritorially when federal agencies are taking actions with a significant environmental impact.⁶¹

- The Coastal Zone Management Act ("CZMA") was enacted in 1972 "to preserve, protect, develop and whenever possible restore the resources of the coastal zone of the United States."⁶² The intent of the legislation is to "enhance state authority by encouraging and assisting the states to assume planning and regulatory powers over their coastal zones."⁶³ The CZMA requires that each federal agency activity "within or outside the coastal zone that affects" a state's coastal zone "shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs."⁶⁴

⁶⁰ See, e.g., *NRDC v. U.S. Dep't of the Navy*, 857 F. Supp. 734, 739 (C.D. Cal. 1994); *Tongass Conservation Soc'y v. Cheney*, 924 F.2d 1137 (D.C. Cir. 1991). The main purpose of the NEPA process is to ensure that agencies incorporate environmental considerations into their decisionmaking. 40 C.F.R. § 1500.1 (2006). To comply with NEPA, an agency prepares an Environmental Assessment ("EA") of the proposed action to determine whether further analysis is needed. *Id.* § 1501.4(b). If the agency determines that its action will not have a significant impact on the environment, it issues a Finding of No Significant Impact ("FONSI"). *Id.* § 1508.13. If it appears that the action may significantly affect the environment, the agency is required to prepare an Environmental Impact Statement ("EIS") in which it must consider, among other things, any unavoidable adverse effects of the proposed project, any reasonable alternatives to it, and whether the action would involve any irreversible and irretrievable commitments of resources. 42 U.S.C. § 4332(2)(C)(ii), (iii), (v) (2000). In considering possible alternatives to the proposed action, agencies are required to consider a "no action alternative," "other reasonable courses of action," and mitigation measures other than those contained in the proposed action. 40 C.F.R. § 1508.25(b) (2006).

⁶¹ *NRDC v. U.S. Dep't of the Navy*, No. CV-01-07781, 2002 U.S. Dist. LEXIS 26360, at *40 (C.D. Cal. Sept. 17, 2002). Similar requirements for extraterritorial activities are imposed by Executive Order. See Exec. Order No. 12114, 44 Fed. Reg. 1957 (Jan. 4, 1979), *reprinted in* 42 U.S.C. § 4321 (2000).

⁶² 16 U.S.C. § 1452(1) (2000).

⁶³ S. REP. NO. 92-753, at 1 (1972), *as reprinted in* 1972 U.S.C.C.A.N. 4776, 4776.

⁶⁴ 16 U.S.C. § 1456(c)(1)(A) (2000). Implementing regulations define "consistent to the maximum extent practicable" as "fully consistent with the enforceable policies of management programs *unless full consistency is prohibited by existing law* applicable to the Federal agency." 15 C.F.R. § 930.32(a)(1) (2006) (emphasis added). In other words, "Federal

*B.**Domestic Enforcement*

1.

Ship-Shock

The first application of these federal statutes to ocean noise pollution came in a 1994 lawsuit—*Natural Resources Defense Council v. U.S. Department of the Navy*—challenging a proposed five-year underwater explosives program proposed for waters in and around the Channel Islands National Marine Sanctuary off the southern California coast.⁶⁵ The proposed “ship-shock” program consisted of 54 detonations annually for 5 years, using explosives up to 10,000 pounds, in an area of recognized marine mammal aggregation and species diversity.⁶⁶ Because of the program’s potential to cause incidental harm to marine mammals, the Navy sought permission from NMFS under the “small take” authorization of the MMPA which, among other things, requires methods for conducting the tests with the “least practicable impact” on marine mammals and their habitat.⁶⁷ NMFS prepared an Environmental Assessment (“EA”) under NEPA, finding that the program would have no significant impact on the environment, and issued a Final Rule under the MMPA approving the five-year testing program and requiring the Navy, as a precondition to the testing, to obtain a Letter of Authorization for each test. Based on another EA, the Navy then sought and gained a Letter of Authorization for a ship-shock test of the *USS John Paul Jones*.⁶⁸

NRDC and a coalition of environmental groups challenged NMFS’s Final Rule approving the five-year testing program, its authorization of the first ship-shock test, and the Navy’s decision to conduct the test. In granting the plaintiffs’ motion for a preliminary injunction, the court held that NMFS had violated the MMPA and NEPA in promulgating its regulation and issuing the Letter of Authorization for the ship-shock test, because it failed to consider any alternatives to the marine mammal-rich site proposed by the Navy.⁶⁹ Although NMFS interpreted the MMPA as not requiring it to consider alternative sites, the court found that “the

agencies shall consider the enforceable policies of [State] management programs as requirements to be adhered to in addition to existing Federal agency statutory mandates.” *Id.* § 930.32(a)(2).

⁶⁵ *NRDC v. U.S. Dep’t of the Navy*, 857 F. Supp. 734.

⁶⁶ *Id.* at 736.

⁶⁷ 16 U.S.C. § 1371(a)(5)(A) (2000).

⁶⁸ *NRDC v. U.S. Dep’t of the Navy*, 857 F. Supp. at 736.

⁶⁹ *Id.* at 738, 740.

statute unambiguously establishes that NMFS interpretation is incorrect and that, even if the statute were ambiguous, NMFS interpretation is unreasonable.”⁷⁰ It further noted that “[a]ny other interpretation of the MMPA would allow NMFS to authorize projects that would result in the taking of an unnecessarily high number of marine mammals.”⁷¹ The court likewise found that the Navy violated NEPA by failing to consider alternative sites.⁷²

With regard specifically to the Navy’s claim that an injunction would result in “substantial costs in terms of money and defense preparedness,” the court cited two factors in finding that the balance favored the plaintiffs:

First, the plaintiffs are much more likely to prevail on the merits so that it is quite likely that an improper environmental harm will occur if the injunction is denied. . . . Second, NMFS and the Navy were notified several months ago that a challenge might be brought to the testing program if alternative sites were not considered. The Navy’s projected harm is the direct result of the Navy’s refusal or inability to recognize, at an earlier date, the propriety of that challenge.⁷³

Because the plaintiffs showed “a sufficient likelihood that an alternative site would result in less harm to marine mammals,” the court enjoined the Navy from conducting the ship-shock test, and enjoined NMFS from issuing any other Letters of Authorization pursuant to the Final Rule.⁷⁴

⁷⁰ *Id.* at 738.

⁷¹ *Id.*

⁷² *Id.* at 740. The Navy relied upon “a site selection survey that was constructed in an arbitrary and capricious manner and that excluded reasonable alternatives that met the requirements of the proposed action.” *Id.*

⁷³ *Id.* at 741 n.13.

⁷⁴ *Id.* at 741. Subsequently, NRDC and the Navy entered into a settlement agreement that required the Navy to prepare an EIS for future ship-shock tests. The agreement provided conditions regarding how and when the Navy would conduct the single ship-shock test for the *USS John Paul Jones*. This included conducting it in an area with lower marine mammal abundance, to be determined by aerial surveys, and having a scientist observer and an NRDC observer present during the test. *NRDC v. U.S. Dep’t of the Navy*, No. CV 94-2337-SVW(CTx), 1994 WL 715704, at *1, *2 (C.D. Cal. May 6, 1994).

2. Low-Frequency Active Sonar

Public awareness of ocean noise began to grow in 1995 when, after urging from NRDC, the Navy disclosed the development of a new high-intensity submarine detection system called SURTASS Low Frequency Active Sonar (“LFA”). Its transmitters, fixed to a central cable and lowered into the water through a slot in the ship’s hull, can produce sound with a received level above 140 decibels more than 300 miles away.⁷⁵ After a five-year administrative review process, including a programmatic Environmental Impact Statement (“EIS”), a Navy-sponsored scientific research program using the LFA system at significantly reduced source levels, and tens of thousands of public comments opposed to the proposed deployment, NMFS issued a Final Rule.⁷⁶ This rule granted a “small take” permit pursuant to the MMPA allowing the Navy to seek and obtain annual authorization to use LFA in 75% of the world’s oceans.⁷⁷

NRDC and others once again sued.⁷⁸ In October 2002, the federal court issued a preliminary injunction and,⁷⁹ in August 2003, a permanent injunction blocking global deployment under the permit.⁸⁰ Applying the MMPA, the court found a series of violations, from the geographic scope of the permit⁸¹ to the numbers of marine mammals affected⁸² to the mitigation required.⁸³ Although the court agreed with the plaintiffs that NMFS had acted arbitrarily and capriciously in interpreting “harassment” of

⁷⁵ JASNY ET AL., *supra* note 3, at 21.

⁷⁶ See NRDC v. Evans, 364 F. Supp. 2d 1083, 1089 (N.D. Cal. 2003).

⁷⁷ *Id.* at 1097.

⁷⁸ *Id.* at 1083.

⁷⁹ NRDC v. Evans, 232 F. Supp. 2d 1003, 1054 (N.D. Cal. 2002).

⁸⁰ NRDC v. Evans, 364 F. Supp. 2d at 1143.

⁸¹ *Id.* at 1098. (“As written . . . the Final Rule does not limit the Navy’s operations to a specified geographic region.”).

⁸² *Id.* at 1104. (“While defendants are free to reasonably interpret the meaning of ‘small numbers,’ their decision to write this requirement out of the MMPA is flatly inconsistent with the plain language of the statute and is entitled to no deference.”).

⁸³ *Id.* Specifically in response to the contention that NMFS violated the MMPA by failing to adopt measures to ensure the least practicable adverse impact on marine mammals, the court ordered the Navy to implement a number of significant mitigation measures. It found that “strengthening the . . . mitigation measures is necessary to ensure negligible impact.” *Id.* at 1110. Among other things, it ordered the Navy to conduct pre-operation aerial or small craft surveys before using LFA in coastal waters, extended NMFS’s designated “exclusion zone” (the area in which marine mammals cannot be exposed to LFA with a frequency of 180 decibels or higher), and ordered NMFS to designate more Offshore Biologically Important Areas. *Id.* at 1110-15.

marine mammals to mean actual disturbance when the MMPA's plain language requires only the potential for disturbance,⁸⁴ the court denied summary judgment on this claim. In the court's view, the plaintiffs had not shown that this erroneous interpretation caused them harm.⁸⁵

The court also found violations of the ESA—for example, issuing a Biological Opinion without an Incidental Take Statement⁸⁶—and NEPA. As with the inadequate EA in the *Ship Shock* case, the court held that the Navy's EIS violated NEPA because it did not adequately analyze alternatives to the proposed project.⁸⁷ The Navy considered only three options: not using LFA at all, using LFA with no mitigation measures, or using LFA with the limited mitigation measures that it ultimately adopted.⁸⁸ It also failed to consider siting the tests in areas that would pose a lower risk of adverse impacts on marine life and extending mitigation to include the protection of fish.⁸⁹ Although the plaintiffs challenged the Navy's determination that data on strandings caused by mid-frequency sonar were inapplicable to its analysis of LFA, the court chose to defer to the Navy's scientific experts.⁹⁰

Finally, with regard to issuance of an injunction, the court devoted significant attention to a careful balancing of the parties' competing interests. Attempting to balance the interests of the Navy and the public in national security with protection of the marine environment, the court determined that a "carefully tailored" permanent injunction was appropriate.⁹¹

The Court recognizes and respects the very important interests at stake on both sides of this case and, after reviewing the extensive record, believes that both can be safeguarded. On the one hand, there can be no doubt that the public interest in military preparedness and protection

⁸⁴ *Id.* at 1105.

⁸⁵ *Id.* at 1106.

⁸⁶ *Id.* at 1135.

⁸⁷ *Id.* at 1118.

⁸⁸ *Id.* at 1116.

⁸⁹ *Id.* at 1118. The EIS further failed to address several studies demonstrating that ocean noise harms fish, and it was misleading regarding the studies that it did address. *Id.* at 1123.

⁹⁰ *Id.* at 1125.

⁹¹ *Id.* at 1143.

against enemy submarine attacks through early detection is of grave importance.

....

On the other hand, there can also be no doubt that the public interest in protecting the world's oceans and the sea creatures that depend on the oceanic environment to survive is also of the highest importance. The Marine Mammal Protection Act, for example, reflects the public's profound interest in safeguarding whales, dolphins and other magnificent mammals that still live in the ocean.⁹²

The court ordered the parties to meet and confer on the precise terms of an injunction that would extend the exclusion zone⁹³ and require pre-operation aerial surveys.⁹⁴ It explained that “[a]bsent an injunction, the marine environment that supports the existence of these species will be irreparably harmed.”⁹⁵ In 2006, the Ninth Circuit dismissed the Navy's appeal of the ruling.⁹⁶

In the summer of 2007, on the eve of expiration of the 2002 small take permit for LFA, NMFS issued a new five-year permit to the Navy, once again for global deployment of the system.⁹⁷ One month later, on September 17, 2007, the plaintiff groups sought review of the new permit⁹⁸ and, on October 12, 2007, filed a motion for preliminary injunction. On February 6, 2008, the court issued an order granting their motion in part and, once again, directed the parties to meet and confer to determine the scope of the injunction.⁹⁹

⁹² *Id.* at 1090.

⁹³ *Id.*

⁹⁴ *Id.* at 1143. The parties successfully negotiated agreements for the Navy's testing and training with LFA, first to determine the scope of the preliminary injunction in 2002 and again to determine the scope of the permanent injunction in 2003. In both cases, the agreed-upon operations area was limited to portions of the western North Pacific Ocean near the eastern seaboard of Asia.

⁹⁵ *Id.* at 1140.

⁹⁶ *NRDC v. Gutierrez*, 457 F.3d 904, 906 (9th Cir. 2006) (explaining that the defendants “have no standing” to challenge the district court's legal rulings without seeking modification or reversal of the relief).

⁹⁷ The Final Rule and Letter of Authorization were issued concurrently on August 16, 2007.

⁹⁸ Complaint, *NRDC v. Gutierrez*, No. C-07-4771 (N.D. Cal. Sept. 17, 2007).

⁹⁹ *NRDC v. Gutierrez*, No. C-07-4771 EDL, 2008 WL 360852 (N.D. Cal. Feb. 6, 2008). The plaintiffs' motion relied on many claims similar to those upheld by the court in the first LFA lawsuit, including violations of the MMPA, NEPA, and the ESA. The parties successfully negotiated an agreement on the terms of the preliminary injunction on

3.

LWAD

On September 10, 2001, NRDC challenged the Navy's Littoral Warfare Advanced Development Program ("LWAD"), a series of tests for the development of a broad range of high-intensity active sonar devices.¹⁰⁰ The plaintiffs alleged that the Navy violated NEPA, the ESA, and the MMPA by treating each test as a separate, individual activity, rather than analyzing the environmental impact of the series as a programmatic whole.¹⁰¹ In response to the NEPA claims, the Navy argued, first, that the LWAD program was not subject to NEPA because the tests took place, or had an effect, in waters of the United States Exclusive Economic Zone ("EEZ"); and, second, that even if subject to NEPA the individual tests did not comprise a larger action subject to comprehensive programmatic review.¹⁰²

Addressing the application of NEPA to individual LWAD tests, the court rejected the Navy's argument because the United States exercises certain "sovereign rights" in that area of the ocean:

[I]t is undisputed that with regard to natural resource conservation and management, the area of concern to which NEPA is directed, the United States does have substantial, if not exclusive, legislative control of the EEZ. Because the United States exercises substantial legislative control of the EEZ in the area of the environment stemming from its 'sovereign rights' for the purpose of conserving and managing natural resources, the Court finds that NEPA applies to federal actions which may affect the environment in the EEZ.¹⁰³

However, the court held that programmatic review of the series of tests was not required because the tests were neither connected nor cumulative

March 26, 2008. Stipulation and Order re: Stipulated Request to Amend Interim Preliminary Injunctive Relief and Stay, NRDC v. Gutierrez, No. C-07-4771 EDL (N.D. Cal. Apr. 14, 2008).

¹⁰⁰ NRDC v. U.S. Dep't of the Navy, No. CV-01-07781, 2002 U.S. Dist. LEXIS 26360 (C.D. Cal. Sept. 17, 2002).

¹⁰¹ *Id.* at *19-*20.

¹⁰² *Id.* at *29-*31.

¹⁰³ *Id.* at *40-*41.

and the Navy's general planning of the program did not itself result in an environmental impact or irreversible commitment of resources.¹⁰⁴

On similar factual grounds, the court also rejected the plaintiffs' claim that the Navy violated the ESA's consultation requirement by applying it to individual tests only and not to the program as a whole. The court held that no programmatic ESA consultation was required because LWAD was not acting pursuant to a programmatic document in planning and overseeing the tests.¹⁰⁵ The court noted that the Navy had chosen to conduct separate EAs and consultations based on the difficulty of treating the series of tests as one program, not in an effort to avoid environmental review.¹⁰⁶

4. Mid-Frequency Active Sonar

In October 2005, litigation focused for the first time on the Navy's failure to comply with NEPA, the MMPA, and the ESA in its testing and training with mid-frequency sonar in a number of exercises around the world.¹⁰⁷ The Navy promptly moved to dismiss the complaint based on lack of standing and ripeness, mootness, and the absence of final agency action,¹⁰⁸ citing *Lujan v. National Wildlife Federation*.¹⁰⁹ When the plaintiffs filed a cross-motion for jurisdictional discovery, the court deferred ruling on the Navy's motion to dismiss and granted NRDC's discovery application.¹¹⁰

The Navy raised broad objections to NRDC's ensuing discovery requests, alleging that they were "overbroad, irrelevant, and exceed[ed] the scope of the court's [o]rder" and,¹¹¹ when the court rejected those objections, eventually invoked the state secrets privilege.¹¹² After extensive

¹⁰⁴ *Id.* at *53-*54.

¹⁰⁵ *Id.* at *78.

¹⁰⁶ *Id.* at *79-*80.

¹⁰⁷ Complaint, NRDC v. England, No. CV05-07513 (C.D. Cal. Oct. 19, 2005), available at <http://www.nrdc.org/media/docs/051019.pdf>.

¹⁰⁸ Order Re: Jurisdictional Discovery at 2-4, NRDC v. Winter, No. CV05-07513 (C.D. Cal. May 15, 2006).

¹⁰⁹ *Lujan v. Nat'l Wildlife Fed'n*, 497 U.S. 871, 894 (1990).

¹¹⁰ Order Re: Jurisdictional Discovery at 6, NRDC v. Winter, No. CV05-07513. (C.D. Cal. May 15, 2006).

¹¹¹ Order Re: Discovery Motions, NRDC v. Winter, No. CV 05-07513 (C.D. Cal. Oct. 19, 2006).

¹¹² *Id.* at 5.

negotiations, the parties reached an agreement addressing both the Navy's objections and its assertion of the privilege.¹¹³ Most recently, based on the information obtained through that agreement, the plaintiffs sought and were granted leave to amend their complaint.¹¹⁴

5. RIMPAC 2006

Natural Resources Defense Council v. Winter, filed in June 2006, challenged the Navy's decision to use mid-frequency sonar ("MFA") and NMFS's decision to approve its use in one of the Navy's largest war games, the Rim of the Pacific (RIMPAC) exercise in the biologically rich waters of Hawaii.¹¹⁵ In seeking a temporary restraining order against the use of sonar in the war games, the plaintiffs asserted two claims. First, they charged that the Navy was obligated, under NEPA, to prepare an EIS for the nearly month-long exercise.¹¹⁶ Second, they charged that the defendants had failed to comply with the requirements of the MMPA in authorizing MFA sonar use during RIMPAC.¹¹⁷ The second of these claims was mooted when, just two days after the plaintiffs' suit was filed, and for the first time in history, the Secretary of Defense invoked an exemption from the requirements of the MMPA for certain MFA sonar training exercises, including RIMPAC.¹¹⁸

Despite the Pentagon's eleventh-hour decision to exempt the Navy from its obligations under the MMPA, the court proceeded to issue a temporary restraining order, blocking the use of sonar, based on defendants' probable failure to comply with NEPA. The court held that in light of the "considerable convincing scientific evidence demonstrating that the Navy's use of MFA sonar can kill, injure, and disturb many

¹¹³ Joint Notice of Agreement Resolving Jurisdictional Discovery Dispute over Invocation of the Military and State Secrets Privilege, *NRDC v. Winter*, CV05-07513 (C.D. Cal. May 30, 2007).

¹¹⁴ Order Granting Plaintiffs' Motion for Leave to File Second Amended Complaint, *NRDC v. Winter*, No. CV 05-07513 (C.D. Cal. Apr. 9, 2008).

¹¹⁵ Complaint, *NRDC v. Winter*, No. CV06-4131 (C.D. Cal. June 28, 2006), available at http://docs.nrdc.org/water/wat_06062801A.pdf.

¹¹⁶ *Id.* at 3-5.

¹¹⁷ *Id.* at 5.

¹¹⁸ Temporary Restraining Order at 3, *NRDC v. Winter*, No. CV06-4131 (C.D. Cal. July 3, 2006), available at <http://www.nrdc.org/media/docs/060703.pdf>.

marine species, including marine mammals,”¹¹⁹ NRDC was likely to prevail on the merits of its NEPA claims:

Plaintiffs have demonstrated a likelihood of success in establishing that, in light of the available scientific evidence, Defendants’ failure to prepare an EIS or take a ‘hard look’ at the potential environmental impact of their activities before issuing a Finding of No Significant Impact (“FONSI”) is violative of NEPA. . . . Additionally, Defendants have not demonstrated that the Navy satisfied its obligation under NEPA to give ‘full and meaningful consideration’ to reasonable alternatives.¹²⁰

The court also ordered the Navy to “meet and confer with Plaintiffs to determine if an agreement can be reached on mitigation measures that would avoid the need for further provisional relief in this case.”¹²¹

The defendants immediately moved to stay the temporary restraining order pending an appeal to the Ninth Circuit, which the district court promptly denied,¹²² and then filed an emergency motion for stay in the court of appeals. Meanwhile, the parties met and conferred, pursuant to the court’s order, to discuss possibilities for an agreement on mitigation measures that would alleviate the need for further provisional

¹¹⁹ *Id.* at 2.

¹²⁰ *Id.* at 4-5. With regard to the balance of harms, the court cited the possibility that RIMPAC 2006 would “kill, injure, and disturb many marine species,” and that “[c]onversely, the harm to Defendants if the Navy is temporarily enjoined from proceeding with RIMPAC 2006, as scheduled, until such time as a preliminary injunction hearing can be held, is substantially outweighed by the potential harm to the human environment.” *Id.* at 6.

¹²¹ *Id.* at 7.

¹²² Defendants have not made the requisite showing that they are likely to prevail on the merits on appeal or that they have raised serious questions as to the validity of the Court’s July 3, 2006 Order, which found that Defendants’ failure to take the requisite ‘hard look’ at the potential environmental impact of their activities before issuing a Finding of No Significant Impact (“FONSI”) is violative of NEPA Further, the Court finds that Defendants have not demonstrated that they are likely to prevail on the merits on appeal because they have not demonstrated that the Navy satisfied its obligation under NEPA to give ‘full and meaningful consideration’ to ‘reasonable alternatives.’

Order Denying Defendants’ Ex Parte Applications at 2, *NRDC v. Winter*, No. CV06-4131 (C.D. Cal. July 5, 2006).

relief, and two days later the parties reached an agreement.¹²³ On this basis, the Navy was allowed to proceed with sonar training.

6. Mid-Frequency Sonar—Southern California

In March 2007, in *Natural Resources Defense Council v. Winter*¹²⁴ and *California Coastal Commission v. U.S. Department of the Navy*,¹²⁵ a coalition of environmental groups and the California Coastal Commission (“CCC”) brought separate suits to enjoin a two-year series of fourteen major training exercises planned by the Navy in the waters off the southern California coast, including in and around the Channel Islands National Marine Sanctuary. According to the Navy’s own analysis, these SOCAL exercises would result in a take of approximately 170,000 marine mammals from thirty species, including five species of endangered whales.¹²⁶ In addition to claims by the environmental plaintiffs that the proposal would violate NEPA (no EIS prepared) and the ESA (inadequate Biological Opinion prepared), the CCC and the environmental groups alleged that the Navy had violated the CZMA in failing to coordinate with California—that is, failing to submit a consistency determination to the CCC for review concerning the planned sonar exercises—to ensure that

¹²³ Settlement Agreement, *NRDC v. Winter*, No. CV06-4131 (C.D. Cal. July 7, 2006). Pursuant to this agreement, the Navy agreed to implement additional mitigation measures in order to protect marine mammals and other marine life during the Navy’s RIMPAC exercise. These additional measures included prohibiting the Navy from using sonar within the then-newly-established Northwestern Hawaiian Islands Marine National Monument or within a 25-nautical-mile sonar buffer zone around it; requiring all Navy personnel listening through underwater detection microphones to monitor for marine mammals and report the detection of any marine mammal to the appropriate watch station for action; requiring aerial surveillance for marine mammals during sonar drills and reporting of sightings to a marine mammal response officer; requiring the Navy to have at least one dedicated and three non-dedicated marine mammal observers on every surface sonar vessel during all sonar drills, and to add an additional dedicated marine mammal observer during the three exercises occurring in channels between the islands; and requiring the Navy to publicize in the local Hawaii press a hotline for reporting marine mammal incidents. *Id.* at 3-4.

¹²⁴ Complaint for Declaratory and Injunctive Relief, *NRDC v. Winter*, No. SACV07-0335 (C.D. Cal. Mar. 22, 2007).

¹²⁵ Complaint, *Cal. Coastal Comm’n v. U.S. Dep’t of the Navy*, No. CV07-01899 (C.D. Cal. Mar. 7, 2007).

¹²⁶ Complaint for Declaratory and Injunctive Relief at 2, *NRDC v. Winter*, No. SACV07-0335 (C.D. Cal. Mar. 22, 2007).

federal actions that may affect California's coastal zone are consistent with the state's Coastal Management Program.¹²⁷

The Navy submitted to the CCC a consistency determination with respect to non-sonar aspects of its planned southern California exercises. As a predicate for its approval, however, the CCC imposed a series of twelve conditions intended to mitigate the impacts of sonar use on California's coastal waters and marine species.¹²⁸ The Navy refused to comply with any of the CCC's conditions, claiming that the exercises would nevertheless be consistent with the state's Coastal Management Plan.¹²⁹

In May 2007, the environmental plaintiffs filed a motion for preliminary injunction pending compliance with NEPA, the ESA, and the CZMA; on the same day, the defendants filed a motion to dismiss or stay, claiming the lawsuit was duplicative and vexatious. At an August 6, 2007 hearing, after denying the defendants' motion, the court granted a preliminary injunction, citing violations of NEPA and the CZMA and its finding that based on "numerous scientific studies, declarations, reports, and other evidence before the Court, Plaintiffs have established to a near certainty that use of MFA sonar during the planned SOCAL exercises will cause irreparable harm to the environment."¹³⁰ The court identified, in particular, the defendants' failure to prepare an EIS,¹³¹ to prepare an adequate EA that

¹²⁷ *Id.* at 4; Complaint at 8, Cal. Coastal Comm'n v. U.S. Dep't of the Navy, No. CV07-01899 (C.D. Cal. Mar. 7, 2007). The groups did not bring any claims under the MMPA because, in January 2007, the Department of Defense granted the Navy a two-year exemption from the Act with regard to mid-frequency sonar training exercises. Memorandum from Sec'y of the Navy, National Defense Exemption from Requirements of the Marine Mammal Protection Act for Certain DoD Military Readiness Activities That Employ Mid-Frequency Active Sonar or Improved Extended Echo-ranging Sonobuoys (Jan 23, 2007) (on file with author).

¹²⁸ Complaint at 7, Cal. Coastal Comm'n v. U.S. Dep't of the Navy, No. CV07-01899 (C.D. Cal. Mar. 7, 2007). The CCC's conditions required the Navy to implement larger safety zones; include two trained observers at all times the Navy uses sonar; provide adequate training for the monitors; include Passive Acoustic Monitoring and use it to enforce the safety zone; perform aerial monitoring; avoid effects on grey whales, the National Marine Sanctuaries, and areas with high numbers of marine mammals where possible; implement additional measures for night and low visibility conditions; and conduct thirty minutes of surveillance prior to each sonar exercise. *Id.*

¹²⁹ *Id.*

¹³⁰ Order Denying Defendants' Motion to Dismiss or Stay and Granting in Part and Denying in Part Plaintiffs' Motion for a Preliminary Injunction at 19, NRDC v. Winter, No. 07-cv-00335 (C.D. Cal. Aug. 7, 2007).

¹³¹ *Id.* at 11.

addresses cumulative impacts and considers all reasonable alternatives,¹³² to submit a consistency determination as required by the CZMA, and to include adequate mitigation.¹³³

With regard to the balance of harms and to the public interest, and specifically to the Navy's claim that an injunction would interfere with their readiness activities, the court was unpersuaded:

The Court is also satisfied that the balance of hardships tips in favor of granting an injunction, as the harm to the environment, Plaintiffs, and public interest outweighs the harm that Defendants would incur if prevented from using MFA sonar, absent the use of effective mitigation measures, during a subset of their regular activities in one part of one state for a limited period.¹³⁴

The court's order enjoined the use of mid-frequency sonar in all of the remaining planned exercises in the southern California range through January 2009.¹³⁵

The federal defendants filed an immediate appeal, and, on August 31, 2007, a 2-1 majority of the Ninth Circuit Court of Appeals motions panel granted their request for a stay pending appeal of the district court's order and expedited the appeal.¹³⁶ The majority did not find that the district court abused its discretion, either in holding that the Navy had violated the law or that the plaintiffs had shown a near certainty of irreparable harm to the environment. It concluded that a stay should issue, however, because it found that the district court had failed to consider the "public interest" in having a trained and effective Navy and had failed to explain why an unconditional injunction, rather than conditioning the conduct of those exercises on the adoption of additional mitigation measures, was appropriate.¹³⁷ With regard to the balancing of interests, the majority articulated the focus differently than the district court:

¹³² *Id.* at 8-14.

¹³³ *Id.* at 17. The Navy's "proposed mitigation measures are woefully inadequate and ineffectual." *Id.*

¹³⁴ *Id.* at 19.

¹³⁵ *Id.*

¹³⁶ *NRDC v. Winter*, 502 F.3d 859 (9th Cir. 2007).

¹³⁷ *Id.* at 862-63.

The public does indeed have a very considerable interest in preserving our natural environment and especially relatively scarce whales. But it also has an interest in national defense. We are currently engaged in war, in two countries. There are no guarantees extending from 2007 to 2009 or at any other time against other countries deciding to engage us, or our determining that it is necessary to engage other countries. The safety of the whales must be weighed, and so must the safety of our warriors. And of our country.¹³⁸

On November 13, 2007, after expedited briefing and hearing,¹³⁹

a unanimous merits panel of the Ninth Circuit issued an order vacating the motion panel's stay of the district court's injunction and remanding the case to the trial court with directions to "enter a modified preliminary injunction containing appropriate mitigating conditions."¹⁴⁰ The merits panel found that the plaintiffs had met the necessary burden of proof for preliminary relief, having shown "a strong likelihood of success on the merits," "the possibility of irreparable injury," and "that the balance of hardships tips in their favor if a properly tailored injunction is issued providing that the Navy's operations may proceed if conducted under circumstances that provide satisfactory safeguards for the protection of the environment."¹⁴¹ The court of appeals then referred to the district

¹³⁸ *Id.* at 863-64 (citation omitted). In a dissenting opinion, Judge Milan Smith found that the Navy failed to present "any legally viable defense" to its violations of law; the district court had carefully weighed the public interest in national security and the environment; and the Navy had failed to show that the balance of hardships tipped in its favor. *Id.* at 867-68. On the issue of national security, Judge Smith observed that:

It is the Navy's sharp starboard tack from its recent training practices that has left it in irons fighting environmental laws, not a failure by the district court to consider national security or the public interest.

. . . .

There is no 'national security trump card' that allows the Navy to ignore NEPA to achieve other objectives. By declining to write a national security exemption into NEPA, Congress has evidently concluded that it does not jeopardize national security to require the military to comply with NEPA, and the courts have agreed.

Id. at 865, 868.

¹³⁹ The court of appeals granted the CCC's application to intervene in the appellate court. NRDC v. Winter, No. 07-56157 (9th Cir. Oct. 25, 2007) (order granting CCC's motion to intervene).

¹⁴⁰ NRDC v. Winter, 508 F.3d 885, 887 (9th Cir. 2007) (Order).

¹⁴¹ *Id.*

court, informed by the Navy's past use of mitigation and the court's experience with the issue, the task of determining precisely what those safeguards should be:

Having . . . considered the effect that narrowly

tailored mitigation conditions might have on the parties' interests, we conclude that such an injunction would be appropriate. In light of the Navy's past use of additional mitigation measures to reduce the harmful effects of its active sonar during its 2006 exercises in the Pacific Rim, and of the district court's longstanding involvement with this matter and its familiarity with the effectiveness and practicability of available mitigation measures, we vacate the stay and remand this matter to the district court to narrow its injunction so as to provide mitigation conditions under which the Navy may conduct its training exercises. The district court shall determine the appropriateness of whatever conditions may be suggested by either party, or may advance such conditions on its own.¹⁴²

The merits panel, while retaining jurisdiction for "any further motions, requests for relief, or appeals in this matter," remanded and directed the district court to enter a modified "preliminary injunction by January 4, 2008, the earliest approximate date at which the Navy plans its next exercise."¹⁴³

On January 3, 2008, after considering additional briefing and even taking a Navy-guided tour of the destroyer, *USS Milius*, in San Diego, the district court issued a tailored preliminary injunction reaffirming its findings on probability of success under NEPA and the CZMA, balance of hardships, and the public interest and imposing specific additional mitigation measures.¹⁴⁴ These included, *inter alia*, measures requiring the Navy to cease use of MFA sonar when marine mammals are spotted within 2200 yards, power down sonar by 6 decibels when significant surface-ducting conditions are detected, adopt a 12-mile coastal buffer, implement additional monitoring, and avoid an area of particular sonar risk to marine mammals.¹⁴⁵ In doing so, the court explicitly acknowledged

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ NRDC v. Winter, 530 F. Supp. 2d 1110 (C.D. Cal. 2008).

¹⁴⁵ *Id.* at 1118-20.

and deferred to the government's national security concerns and, on that basis, rejected "sweeping geographic exclusions" proposed by the plaintiffs.¹⁴⁶ On January 11, the Navy appealed, and three days later, the district court denied the Navy's application for a stay pending appeal.¹⁴⁷

Meanwhile, on January 10, the Navy sought Executive Branch relief from the statutory requirements underlying the district court's preliminary injunction. Specifically, it requested that the President invoke the waiver provision of the CZMA, which provides:

After any . . . [appealable] order of any Federal court . . . that a specific Federal agency activity is not in compliance with [the statute] . . . , the President may . . . exempt from compliance those elements of the Federal agency activity that are found by the Federal court to be inconsistent with an approved State program, if the President determines that the activity is in the paramount interest of the United States.¹⁴⁸

Acting pursuant to that provision, on January 15, President Bush purported to exempt the Navy's MFA sonar use during its SOCAL training activities that the district court had found to be inconsistent with the CZMA.¹⁴⁹ On a separate track, the Navy also initiated a quasi-judicial *ex parte* proceeding before the Council on Environmental Quality ("CEQ")—part of the Executive Office of the President—attempting to circumvent the district court's application of NEPA. On January 15, CEQ agreed with the Navy that the district court's injunction created "emergency circumstances" and, pursuant to 40 C.F.R. § 1506.11, ordered "alternative arrangements" for the SOCAL exercises.¹⁵⁰

¹⁴⁶ *Id.* at 1118. For example, after considering the Navy's submissions, the court rejected NRDC's call for a 25 nautical mile coastal exclusion and denied many of NRDC's other proposals, including the exclusion of sonar around waters of high marine mammal abundance around the Westfall Seamount and the Tanner and Cortes Banks, the siting of exercises to the maximum extent practicable in waters deeper than 1500 meters, and the powering-down of sonar at night and in low-visibility conditions. *Id.* at 1117 n.6.

¹⁴⁷ NRDC v. Winter, 527 F. Supp. 2d 1216, 1223 (C.D. Cal. 2008).

¹⁴⁸ 16 U.S.C. § 1456 (c)(1)(B) (2000).

¹⁴⁹ Memorandum for the Secretary of Defense and the Secretary of Commerce: Presidential Exemption from the Coastal Zone Management Act, 44 WEEKLY COMP. PRES. DOC. 79 (Jan. 15, 2008).

¹⁵⁰ In particular, CEQ stated that, based on "[d]iscussions between our [i.e., CEQ and Navy] staffs," together with the evidence contained in the Navy's record, it "clearly determined that the Navy cannot ensure the necessary training . . . under the terms of

Later that evening, the Navy filed an emergency motion with the Ninth Circuit Court of Appeals seeking to vacate the preliminary injunction or, alternatively, to partially stay mitigation relating to the 2,200 yard safety zone and power-downs in significant surface-ducting conditions.¹⁵¹ The court of appeals remanded the application on the following day to allow the district court to determine the effect, if any, of the Executive Branch actions on the court's injunction and January 14 order denying a stay.¹⁵²

On February 4, the district court issued a 36-page ruling rejecting the Navy's motion. The court found, *inter alia*, that CEQ's reliance on its "emergency" regulation under the circumstances of this case was inconsistent both with the regulation as written and with NEPA itself.¹⁵³ It also found that both the CEQ regulation and the CZMA waiver, as applied, raise serious constitutional concerns, though it declined to resolve those issues based on the doctrine of constitutional avoidance.¹⁵⁴ With regard specifically to the role of the courts in reviewing decisions of the Executive Branch in matters of national security, the district court noted that, while courts "generally defer,"

[t]his deference must be tempered . . . by '[t]he established principle of every free people . . . that the law alone shall govern, and to it the military must always yield.' Deference therefore does not mean a court must abjure judicial review whenever a party raises the specter of national security. Absent judicial review, there would be no independent means of ensuring the continuing vitality of the bedrock 'doctrine that the military should always be kept in subjection to the laws of the country to which it belongs.' Accordingly, throughout the course of this litigation, the Court has deferred to the Navy's representations of the interests of national security, while avoiding using deference

the injunction orders." Letter from James L. Connaughton, Chairman, CEQ, Executive Office of the President to Donald C. Winter, Sec'y of the Navy 4 (Jan. 15, 2008), available at http://www.whitehouse.gov/ceq/Letter_from_Chairman_Connaughton_to_Secretary_Winter.pdf. CEQ then ordered its own suite of "alternative" measures—measures virtually identical to those previously proposed by the Navy itself. *Id.* at 4-5. The Navy then issued a decision adopting CEQ's "alternative arrangements."

¹⁵¹ *NRDC v. Winter*, 527 F. Supp. 2d at 1224-25.

¹⁵² *Id.*

¹⁵³ *Id.* at 1231.

¹⁵⁴ *Id.* at 1219-20.

to create a judicial exemption from the nation's environmental laws.¹⁵⁵

The Navy filed an appeal of the preliminary injunction two days

later. The Ninth Circuit promptly entered an order *sua sponte* expediting the appeal, and, three weeks thereafter, it issued a unanimous decision affirming the district court's mitigation order.¹⁵⁶ In a 108-page opinion, the panel reviewed in detail the factual evidence of potential harm to the environment, the history of the Navy's own mitigation practice in sonar training, and the specific mitigation measures imposed by the district court in this case; it affirmed the district court's finding that no emergency existed to justify CEQ's approval of alternative arrangements under 40 C.F.R. § 1506.11; it laid out the analysis underlying its November 2007 order affirming the issuance of a preliminary injunction based on probable violations of NEPA and the possibility of irreparable harm; and it considered "with the utmost care" the balance of hardships and, in particular, the Navy's claim of "unacceptable risk" to its ability to train.¹⁵⁷ Noting that the judgment of naval officers, including the Chief of Naval Operations, is entitled to "substantial deference," the court nevertheless affirmed the district court's endorsement of the judicial role:

a court's deference is not absolute, even when a government agency claims a national security interest. The district court therefore did not abuse its discretion when it considered the Navy's declarations along with the evidence contained in the record as a whole. This evidence, much of it submitted by the Navy itself, supports the district court's conclusion that the challenged mitigation measures will not likely compromise the Navy's ability to effectively train and certify its west-coast strike groups.¹⁵⁸

The court cited "significant evidence of the Navy's ability to successfully train and certify its strike groups under the conditions imposed by

¹⁵⁵ *Id.* at 1237 (citations omitted). The court denied once again the Navy's request for a stay pending appeal, citing the risk of unmitigated operation to the marine environment, the Navy's prior use of mitigation measures in its sonar training, and the right of the Navy to proceed with its exercises while its appeal is pending. *Id.* at 1238-39.

¹⁵⁶ NRDC v. Winter, No. 08-55054, 2008 WL 565680 (9th Cir. Feb. 29, 2008).

¹⁵⁷ *Id.* at *3.*38.

¹⁵⁸ *Id.* at *34 (citation omitted).

the district court,”¹⁵⁹ and it reiterated the district court’s finding, based on scientific evidence, that “irreparable harm to marine mammals will almost certainly result should the Navy be permitted to conduct its remaining exercises without appropriate mitigation measures.”¹⁶⁰ Finally, it noted that, “[w]hile we are mindful of the importance of protecting national security, courts have often held, in the face of assertions of potential harm to military readiness, that the armed forces must take precautionary measures to comply with the law during its training.”¹⁶¹ In all respects, the court of appeals held, the district court “neither relied on erroneous legal premises nor abused its discretion.”¹⁶²

Concurrently with its decision on the appeal, the panel issued a separate Order Granting Temporary Stay modifying two of the conditions imposed by the district court, to remain in effect for 30 days to allow the federal appellants to petition the United States Supreme Court for review.¹⁶³ If a petition for a writ of certiorari was filed, the court ordered, the partial temporary stay would remain in effect until the Supreme

¹⁵⁹ *Id.* at *36.

¹⁶⁰ *Id.*

¹⁶¹ *Id.* at *37 (citation omitted).

¹⁶² *Id.* For cases that have held, in the face of assertions of potential harm to military readiness, that the armed forces must take precautionary measures in order to comply with the law during its training, see, e.g., *NRDC v. Winter*, No. CV06-4131 (C.D. Cal. July 3, 2006) (RIMPAC 2006 TRO); *Washington County, N.C. v. U.S. Dep’t of the Navy*, 317 F. Supp. 2d 626, 633 (E.D.N.C. 2004) (finding balance of harm “significantly weighted in Plaintiffs’ favor” despite Navy’s argument that preliminary injunction would “deprive the Navy of its mission to protect the interests of the United States and to train its pilots”); *NRDC v. Evans*, 279 F. Supp. 2d 1129, 1191 (N.D. Cal. 2003) (“A tailored injunction reconciles the very compelling interests on both sides of this case, by enabling the Navy to continue to train with and test LFA sonar as it needs to do, while taking some additional measures to better protect against harm to marine life.”); *Makua v. Rumsfeld*, 163 F. Supp. 2d 1202, 1221 (D. Haw. 2001) (“Although the court recognizes the importance of national security and live-fire training, the potential harm to the Army resulting from a brief preliminary injunction will not be significant.”); *Cal. Coastal Comm’n v. United States*, 5 F. Supp. 2d 1106, 1112 (S.D. Cal. 1998) (granting preliminary injunction despite Navy arguments that the injunction “may 1) imperil national security . . . or 2) result in loss of or injury to seaman”); *McVeigh v. Cohen*, 996 F. Supp. 59, 61 (D.D.C. 1998) (recognizing that “deference to the military does not deprive courts of their authority to grant equitable relief”); *NRDC v. U.S. Dep’t of the Navy*, 857 F. Supp. 734, 741 n.13 (C.D. Cal. 1994) (enjoining Navy from weapons testing, holding that “[w]hile the Navy has shown that substantial costs in terms of money and defense preparedness will result from an injunction, the Court believes . . . the balance of harms . . . favor[s] the plaintiffs”) (vacated by consent decree); *Found. of Econ. Trends v. Weinberger*, 610 F. Supp. 829, 844 (D.D.C. 1985) (“Balancing the environmental considerations of NEPA against these defense concerns, this ruling is narrowly tailored to take those matters into account.” (citation omitted)).

¹⁶³ *NRDC v. Winter*, No. 08-55054, 2008 WL 565682 (9th Cir. Feb. 29, 2008).

Court's final disposition of the application.¹⁶⁴ On March 31, 2008, the Solicitor General filed the federal appellants' petition.

7. Mid-Frequency Sonar—Hawaii

In May 2007, following closely in the wake of the RIMPAC and Southern California *NRDC v. Winter* decisions, an environmental coalition brought suit to enjoin the Navy's use of high-intensity, mid-frequency sonar in the two-year Undersea Warfare Exercises in Hawaiian waters ("USWEX"), including the Hawaiian Islands Humpback Whale National Marine Sanctuary.¹⁶⁵ The Navy, once again having failed to prepare an EIS for its planned exercises, sought to rely on a series of EAs and accompanying FONSI's. The plaintiffs filed a motion for preliminary injunction, and on February 29, 2008, informed both by the Ninth Circuit's November 13, 2007 order and the subsequent January 3, 2008 order of Judge Cooper in *Winter*, the district court granted the plaintiffs' motion.¹⁶⁶

In an eighty-four-page order, the district court found violations of NEPA and the CZMA, but rejected the plaintiffs' claim under the National Marine Sanctuaries Act.¹⁶⁷ Like the *Winter* courts, the district court concluded that a tailored injunction allowing training to proceed subject to mitigating conditions to reduce the risk of harm—conditions similar but not identical to those required in *Winter*—was warranted notwithstanding the Navy's assertion of a conflict with its national security obligations. Having found probability of success on the merits and the possibility of environmental harm in the absence of mitigation, the court weighed the balance of hardships:

¹⁶⁴ The court justified the temporary stay as follows:

In light of the short time before the Navy is to commence its next exercise, the importance of the Navy's mission to provide for the national defense and the representation by the Chief of Naval Operations that the district court's preliminary injunction in its current form will 'unacceptably risk' effective training and strike group certification and thereby interfere with his statutory responsibility under 10 U.S.C. sec. 5062 to 'organiz[e], train[], and equip[] the Navy,' we *sua sponte* partially and temporarily stay the preliminary injunction as adopted by the district court to the extent provided herein.

Id. at *1.

¹⁶⁵ *Ocean Mammal Inst. v. Gates*, No. 07-00254, 2008 WL 564664 (D. Haw. Feb. 29, 2008).

¹⁶⁶ *Id.* at *32

¹⁶⁷ *Id.* at *19-*20.

Whereas irreparable harm to the environment may result if USWEX is allowed to proceed in its current form, the preparedness of the Navy in tending to its defense obligations would clearly suffer great harm if USWEX was curtailed in a way that would prevent effective training. . . . [T]he court finds the threat of irreparable harm to the environment sufficiently compelling to determine that the balance of hardships slightly favors the Plaintiffs here. The Court will account for the potential hardships to both parties when crafting its narrowly tailored injunction.¹⁶⁸

The court dismissed the Navy's argument that mitigation would

“destroy the realism” of training—an argument frequently offered by the Navy in opposing mitigation requirements—because “training can never exactly simulate the conditions of warfare.”¹⁶⁹ With regard specifically to a condition for “ramping up” the sonar signal, the court reasoned:

[A]ny alert that an ‘enemy’ submarine might receive can be ignored for purposes of a practice event, especially in light of the very real threat to marine mammals. To the Court, this seems like a relatively simple and logical measure that is not likely to cause the Navy significant, if any, imposition. Further, it is not the ‘enemy’ submarine’s sonar operators’ training which is critical but rather the Navy’s.¹⁷⁰

Finally, in an acknowledgment of the factual balancing inherent in its decision on mitigation, the court reserved the right to modify the required mitigation measures in light of the results of future exercises, “including impacts on marine mammals, if any, and negative effects on the Navy’s ability to train,” and of the Ninth Circuit’s final decision in *Winter*.¹⁷¹

C. *International Response*

The answer to ocean noise pollution does not rest solely with the United States or any single nation. Increasing undersea noise from military sonar and other anthropogenic sources is a global problem,

¹⁶⁸ *Id.* at *21.

¹⁶⁹ *Id.* at *31.

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

unconstrained by national boundaries. Many of the human activities that produce noise occur outside a country's territorial waters, where jurisdiction may be uncertain, and where both the noise and affected species are wide-ranging. Fortunately, scientific data and public concern are converging, and nations are beginning to recognize the need for an international response. Indeed, a number of international bodies have already acted, including the European Parliament, the IWC and its Scientific Committee, and several regional seas agreements.

International solutions to the problem of ocean noise can take many forms. Possibilities range from a federal regulatory system similar to that of the European Union, to the guidelines or regulations that specialized bodies such as NATO and the International Maritime Organization can propose for certain activities, to the coordination that regional agreements can bring, particularly to matters of habitat protection. Unfortunately, under the current Administration, the United States has adopted a position of blanket opposition to regulating active sonar through international means, thereby weakening its capacity for leadership on the ocean noise problem generally. Principal international actions to date are summarized below.

1. ASCOBANS

The Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas ("ASCOBANS") passed a resolution in 2003 entitled "Effects of Noise and of Vessels."¹⁷² Among other things, this resolution requests that parties take a series of steps to reduce the impact of noise on cetaceans from seismic surveys, military activities, shipping vessels, acoustic harassment devices, and other acoustic disturbances.¹⁷³

Specifically, and *inter alia*, the ASCOBANS resolution of 2003:

Requests Parties and Range States to introduce guidelines on measures and procedures for seismic surveys to

(1) alter the timing of surveys or to minimize their duration;

¹⁷² Effects of Noise and of Vessels, Res. 5, Fourth Meeting of the Parties to the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (Aug. 19-22, 2003) (Esbjerg, Denmark).

¹⁷³ Amendment to the Agreement on the Conservation of Small Cetaceans of the Baltic and North Sea, *opened for signature* Aug. 22, 2003, *amending* Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas, Mar. 17, 1992, 1772 U.N.T.S. 217.

- (2) reduce noise levels as far as practicable;
- (3) avoid starting surveys when cetaceans are known to be in the immediate vicinity;
- (4) introduce further measures in areas of particular importance to cetaceans;
- (5) develop a monitoring system that will enable adaptive management of seismic survey activities;

Invites Parties and Range States to

- (1) develop, with military authorities, effective mitigation measures including environmental impact assessments and relevant standing orders to reduce disturbance of, and potential physical damage to, small cetaceans;
- (2) report before the Advisory Committee meeting in 2005, where possible, on approaches to reduce or eliminate adverse effects on small cetaceans by military activities.¹⁷⁴

2.

OSPAR

The OSPAR Commission grew out of a series of treaties among the European nations to protect the marine environment.¹⁷⁵ In 2003 it named “noise disturbance” among the potentially dangerous effects of human activities that may need to be regulated within or in the vicinity of Marine Protected Areas (“MPA”) in order to achieve the objectives of MPA designation.¹⁷⁶

In 2005, the Commission published its *Case Reports for the Initial List of Threatened and/or Declining Species and Habitats in the OSPAR Maritime Area*. Four marine mammals are listed among the potentially imperiled species: the Bowhead Whale, the Blue Whale, the Northern Right Whale, and the Harbor Porpoise.¹⁷⁷ For each of these marine mammals,

¹⁷⁴ *Id.* at 219.

¹⁷⁵ Convention for the Protection of the Marine Environment of the North-East Atlantic, *opened for signature* Sept. 22, 1992, 32 I.L.M. 1069 (1993); OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic, <http://www.ospar.org/eng/html/welcome.html> (last visited Apr. 6, 2008).

¹⁷⁶ See OSPAR Commission, Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area 4, OSPAR 03/17/1-(A-B)-E/Annex 11 (2003), *available at* <http://www.intfish.net/docs/2003/ospar/03-18e.pdf>.

¹⁷⁷ OSPAR COMMISSION, CASE REPORTS FOR THE INITIAL LIST OF THREATENED AND/OR DECLINING SPECIES AND HABITATS IN THE OSPAR MARITIME AREA 91-102 (2006), *available*

the Commission lists “noise disturbance” as among the potentially harmful effects of human activities posing threats to the species, recognizing that “[a]coustic disturbance from shipping, military and research activities adds to the pressure on [these] species.”¹⁷⁸

In 2005, the OSPAR Commission began work on an assessment of the impact of ocean noise on marine life and is now preparing a report on that topic, with the goal of determining by 2008 whether further regulatory action is warranted.

3. IWC

In the summer of 2004, following a scientific workshop dedicated to examining the impacts of ocean noise on cetaceans, a working group of the Scientific Committee of the IWC¹⁷⁹ issued a strong statement of concern regarding intense underwater noise. The group detailed their “alarming concerns” over harm from noise and unanimously agreed that there is now “compelling evidence implicating anthropogenic sound as a potential threat to marine mammals,” a threat manifested “at both regional and ocean-scale levels that could impact populations of animals.”¹⁸⁰ The scientists expressed particular concern about intense underwater noise from military sonar and from air guns used for oil and gas exploration.¹⁸¹

The Scientific Committee, reviewing these data, agreed that the increase in ocean noise was cause for “serious concern” and called for, among other things, the inclusion of noise exposure standards in national and international ocean conservation plans.¹⁸²

The Scientific Committee continued to call attention to ocean noise in its 2005 session, with particular focus on several additional mass strandings coincident with noise events. They called on noise producers to share information regarding noise source characteristics, recommended a workshop to address impacts from seismic noise, and concluded that noise may be impacting more species than previously understood. The seismic workshop was held in the summer of 2006, and the full

at http://www.ospar.org/documents/dbase/publications/P00276_species%20and%20habitats%20justification%20report%202006.pdf.

¹⁷⁸ *Id.* at 91.

¹⁷⁹ International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716, 161 U.N.T.S. 72.

¹⁸⁰ INT'L WHALING COMM'N, 2004 REPORT OF THE SCIENTIFIC COMMITTEE 12 (2004), available at http://de.wdcs.org/laerm/download/IWC2004_Sci_Comm_Report.pdf.

¹⁸¹ *Id.*

¹⁸² INT'L WHALING COMM'N, REPORT OF THE SCIENTIFIC COMMITTEE 44-45 (2004), available at http://www.iwcoffice.org/_documents/sci_com/SCRepFiles2004/56SCrep.pdf.

Commission adopted the resulting recommendations as part of the Report of the Scientific Committee.¹⁸³

4. European Parliament

In October 2004, the European Parliament approved a resolution acknowledging the threat to marine mammals and other ocean wildlife posed by high-intensity active sonars and calling for a moratorium on their use pending further study of impacts.¹⁸⁴ The resolution:

- Recognizes that certain intense sounds “pose a significant threat to marine mammals” and “may have a negative impact on commercial fishing and the already depleted fish stocks throughout the world’s oceans;”¹⁸⁵
- States that underwater noise is a form of pollution of the marine environment under the Law of the Sea;¹⁸⁶ and
- Calls on the EU Commission and Member States to develop international agreements regulating noise levels in the world’s oceans, with a view to regulating and limiting the adverse impact of anthropogenic sonars on marine mammals and fish.¹⁸⁷

5. ACCOBAMS

In November 2004, the parties to the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) adopted a resolution on undersea noise¹⁸⁸ that, *inter alia*:

¹⁸³ See *Annex K Report of the Working Group on Environmental Concerns*, 9 J. CETACEAN RESOURCE MGMT. 227, 227-43 (2007).

¹⁸⁴ Resolution on the Environmental Effects of High-Intensity Active Naval Sonars, EUR. PARL. DOC. (B6-0089/04) (2004).

¹⁸⁵ *Id.* at 2.

¹⁸⁶ See *id.* at 3-4.

¹⁸⁷ *Id.* at 3-4.

¹⁸⁸ Assessment and Impact Assessment of Man-made Noise, Res. 2.16, Second Meeting of the Parties to the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (2004), available at http://www.awionline.org/oceans/Noise/IONC/Docs/ACCOBAMS_2-16-2004.pdf.

- Recognizes that “anthropogenic energy, a form of pollution, comprised of energy, that may degrade habitat and have adverse effects on marine life ranging from disturbance to injury and mortality;”¹⁸⁹
- Urges Parties and non Parties to “avoid any use of man made noise in habitat of vulnerable species and in areas where marine mammals or endangered species may be concentrated . . . within the ACCOBAMS area;”¹⁹⁰ and
- Calls for the development of a common set of guidelines on conducting activities known to produce underwater sound with the potential to cause adverse effects on cetaceans.¹⁹¹

6. World Conservation Union (“IUCN”)

Also in November 2004, the IUCN passed a resolution, entitled “Undersea Noise Pollution” that,¹⁹² *inter alia*:

- Recognizes that “anthropogenic ocean water noise, depending on source and intensity, is a form of pollution, comprised of energy, that may degrade habitat and have adverse effects on marine life ranging from disturbance to injury and mortality;”¹⁹³
- Notes that certain intense sources of noise are not now mitigated and that few protected areas are managed for noise impacts;¹⁹⁴
- Entreats IUCN member governments, through the mechanisms available to them under domestic and international law,¹⁹⁵ to require the use of mitigation to reduce the impacts from individual noise sources; and

¹⁸⁹ *Id.* at 1.

¹⁹⁰ *Id.* at 2.

¹⁹¹ *Id.*

¹⁹² Undersea Noise Pollution, Res. 3.068, World Conservation Union (2004), available at http://www.iucn.org/congress/2004/members/Individual_Res_Rec_Eng/wcc3_res_068.pdf.

¹⁹³ *Id.* at 1.

¹⁹⁴ *Id.*

¹⁹⁵ *Id.* at 2.

- Urges member governments that are parties to the UN “to work through the United Nations Convention on the Law of the Sea . . . to develop mechanisms for the control of undersea noise.”¹⁹⁶

7. United Nations Secretary General

In July 2005, the UN Secretary General prominently included the problem of ocean noise in his report to the General Assembly on issues relating to the conservation and sustainable use of marine biodiversity beyond national jurisdiction. The report names anthropogenic underwater noise as one of five “[c]urrent major threats to some populations of whales and other cetaceans,”¹⁹⁷ and also among the ten “main current and foreseeable impacts on marine biodiversity” on the high seas.¹⁹⁸ It states:

The increasing levels of anthropogenic noise in the oceans constitute smog for acoustically active species, obscuring acoustic signals potentially critical to migration, feeding and reproduction. Other observed effects include stranding and displacement from habitat, tissue damage and mortality. Fish are also damaged by noise and this may reduce fish catches. Better assessment of the impacts of underwater noise on acoustically sensitive oceanic species, including both fish and cetaceans, as well as consideration of noise abatement strategies, are needed.¹⁹⁹

8.

United Nations General Assembly

In November 2005, the UN General Assembly recognized the problem of ocean noise in its resolution on Oceans and the Law of the Sea, requesting “further studies and consideration of the impacts of ocean noise on marine living resources.”²⁰⁰

¹⁹⁶ *Id.* at 3.

¹⁹⁷ The Secretary-General, *Report of the Secretary-General on Oceans and the Law of the Sea*, ¶ 147, delivered to the General Assembly, U.N. Doc. A/60/63/Add.1 (July 15, 2005).

¹⁹⁸ *Id.* ¶ 130.

¹⁹⁹ *Id.* ¶ 159 (citation omitted).

²⁰⁰ G.A. Res. 60/30, ¶ 84, U.N. Doc. A/Res/60/30 (Mar. 8, 2006).

9.

Convention of Migratory Species

Also in November 2005, the parties to the Convention on Migratory Species (“CMS”) passed a resolution naming marine noise among six human threats to cetacean populations. The resolution calls on the CMS’s Scientific Council to assess whether marine noise is adequately addressed in the Convention’s threat abatement activities.²⁰¹

10. Ad Hoc Working Group on High Sea Biodiversity

The UN General Assembly established an “Ad Hoc Open-Ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction” (i.e., on the high seas).²⁰² In February 2006 that working group convened its first meeting, where it recognized ocean noise as a “growing human pressure” that “require[s] urgent action though international cooperation and coordination.”²⁰³

III. RECOMMENDATIONS

The accumulating scientific evidence of noise-induced harm, including mass strandings of marine mammals around the world, is a wake-up call to a significant environmental problem. While its complexity precludes a simple or an immediate solution, some progress has already been made, both domestically and globally. But much more is clearly needed now, at a point where meaningful and effective solutions can have an impact *before* the problem proliferates out of control, its causes intractable and its impacts irreversible.

With this in mind, NRDC has recommended the following measures:

- *Develop and implement a wider set of mitigation measures.* The regulatory agencies in the United States, NMFS and the Fish and Wildlife Service,

²⁰¹ *Summary of the Eight Conference of the Parties to the Convention on Migratory Species: 20-25 November 2005*, EARTH NEGOTIATIONS BULL., Nov. 28, 2005, at 5.

²⁰² U.N. General Assembly, *Ad-Hoc Open-ended Informal Working Group on Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction*, U.N. Doc. A/61/65 (Mar. 20, 2006).

²⁰³ *Id.* ¶ 33.

should move beyond the inadequate operational requirements that are currently imposed and develop a full range of options, particularly geographic and seasonal restrictions and technological (or “source-based”) improvements.²⁰⁴

- *Build economies of scale.* Agencies should use programmatic review and other means to develop economies of scale in mitigation, monitoring, and basic population research. In conducting programmatic review of noise-producing activities, the agencies should take care to make threshold mitigation decisions early in the process and to allow public participation at every stage, as the law requires.²⁰⁵
- *Improve enforcement of the Marine Mammal Protection Act.* NMFS should exercise the enforcement authority delegated by Congress under the Act to bring clearly harmful activities, such as military sonar, into the regulatory system and should adopt process guidelines to ensure that an arm’s length relationship is maintained with prospective permittees. And Congress should add a “citizen-suit” provision to the MMPA, which would strengthen the authority of the public to do what, in some cases, the regulatory agencies will not.²⁰⁶
- *Increase funds for permitting and enforcement.* The U.S. Congress should increase NMFS’s annual budget for permitting and enforcement under the MMPA.²⁰⁷
- *Set effective standards for regulatory action.* So that the MMPA can serve the protective role that Congress intended, the Act’s standards for “negligible impact” and behavioral “harassment” should protect the species most vulnerable to noise, ensure that major noise-producing activities remain inside

²⁰⁴ JASNY ET AL., *supra* note 3, at vii.

²⁰⁵ *Id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.*

the regulatory system, and enable wildlife agencies to manage populations for cumulative impacts.²⁰⁸

- *Establish a federal research program.* Congress should establish a National Ocean Noise Research Program through the National Fish and Wildlife Foundation, or similar institution, allowing for coordination, reliability, and independence of funding. A substantial portion of the budget should be expressly dedicated to improving and expanding mitigation measures.²⁰⁹
- *Commit to global and regional solutions.* The United States and other nations should work through specialized bodies such as the International Maritime Organization to develop guidelines for particular activities like shipping noise; through regional seas agreements to bring sound into the management of coastal habitat; and through inter-governmental regimes, like the European Union, to develop binding multinational legislation.²¹⁰

CONCLUSION

From ship-shock to sonar training, the position of the U.S. Navy during the past fourteen years of litigation has consistently been founded on deference—deference to its judgment in determining the level of compliance required by our environmental laws in its testing and training activities. In each case, however, the district courts have affirmed the principle that, absent an explicit statutory exemption, those laws apply not just to the rest of us but also to the military services in their training for our national defense, even in this post-9/11 era. And as settlement agreements have been achieved in those cases—agreements that allow the Navy to continue to train but under terms requiring a higher level of environmental compliance—it has become increasingly difficult to dispute that a balance between military preparedness and environmental protection is achievable if only there is a will to achieve it. There can

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ *Id.*

be no question that the federal courts have been a powerful, indeed essential, motivator toward that goal.

Nor, in the wake of the decisions surveyed in this article, can there be serious doubt about either the willingness of the federal courts to enforce the military's environmental compliance obligations or the practicability of environmental mitigation in sonar training. In the first appellate consideration of the Navy's environmental practices in its training with high-intensity active sonar, the court of appeals in *Natural Resources Defense Council v. Winter*²¹¹ refused to choose between environmental protection and national security—a false choice inherent in the Navy's claim that unquestioning deference to its judgment on environmental compliance in readiness training is required to ensure our national defense. While vacating the stay pending review and affirming the conclusion of the district court that the plaintiffs had met their burden for issuance of an injunction, on both the merits and the balance of harms, the court of appeals went on to direct the district court to craft a solution that enables the Navy to train but requires it to do so in an environmentally responsible manner. The appellate court mandated, in other words, precisely the kind of result that, in previous cases, has been successfully achieved with the Navy's ultimate acquiescence—a balance of effective environmental mitigation and essential military training. And that careful balance—based, among other things, on the Navy's own estimates of potential harm and its history of practicable mitigation in other regions—is precisely what the district court sought to accomplish in its January 2008 modified preliminary injunction.²¹² On February 29, 2008, having reviewed the balance of interests “with the utmost care,” the court of appeals affirmed the district court's decision in all respects.²¹³

In so doing, the court of appeals adhered to the fundamental principle, so central in decades of environmental enforcement of all kinds, that environmental protection and compliance are an indispensable part of legal conduct under our constitutional system of government, even where competing interests are compelling, either to the litigants themselves or the country as a whole. And that is a principle well worth defending.

²¹¹ 508 F.3d 885, 887 (9th Cir. 2007) (Order).

²¹² NRDC v. Winter, 530 F. Supp. 2d 1110 (C.D. Cal. 2008).

²¹³ NRDC v. Winter, No. 08-55054, 2008 WL 565680, at *34 (9th Cir. Feb. 29, 2008).