



NATURAL RESOURCES DEFENSE COUNCIL

**By Certified Mail, Electronic Mail and Facsimile
Return Receipt Requested**

February 9, 2005

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Re: Request for Review of NATO Actions Involving Active Sonar

Dear Sirs and Madam:

On behalf of the Natural Resources Defense Council (“NRDC”), Green Cross International, the International Fund for Animal Welfare (“IFAW”), Humane Society International (“HSI”), the Whale and Dolphin Conservation Society (“WDACS”), the Ocean Futures Society and its founder Jean-Michel Cousteau, and our millions of members, we write to express our serious concern about the use in NATO exercises of high-intensity active sonar throughout the world’s oceans. Our goal in doing so is to help end the needless infliction of harm to marine mammals and other marine species that has repeatedly been associated with the use of such sonar without feasible, effective mitigation measures.

As discussed below, compelling evidence now links the use of high-intensity sonar with strandings and deaths of marine mammals, with serious impacts to fish stocks, and with other harms to marine life. This evidence has led to a growing international consensus that swift action is required to reduce this harm—a consensus demonstrated by the recent European Parliament resolution urging member states “to actively pursue, in the framework of NATO and other international organisations, the adoption of moratoriums and restrictions on the use of high-intensity active sonars in naval operations and the development of alternative technologies.”

In this letter, we summarize the accumulating evidence of the need for action and propose a series of effective, common-sense steps that NATO and its member states could take to reduce the harm from active sonar. We also invite further discussions to help address this problem, believing strongly, as we hope you do, that NATO’s mission of defending its member states can and must be served through practices consistent with the conservation of our natural resources.

I. NATO's Use of High-Intensity Sonar

A. Mid-Frequency Active Sonar

For at least four decades, mid-frequency, high-intensity active sonar has been employed as an element of naval anti-submarine warfare programs. Mid-frequency active sonar systems are conventionally defined as those that emit sound at frequencies between 1 and 10 kilohertz (kHz). They are used for both force protection and tactical prosecution and are deployed from surface ships and submarines, as well as via helicopter, fixed-wing aircraft, and sonobuoys.

Mid-frequency sonar systems employ technology capable of generating sounds well in excess of 215 decibels (dB re 1 μ Pa (RMS)).¹ For example, during the March 2000 mass stranding of whales in the Bahamas discussed further below, source levels from one mid-frequency system operating in the area were reported to exceed 235 decibels, creating a swath of 160 decibel sound extending tens of kilometers away.² Exactly how loud some of these systems operate is not publicly known. What is known is that the use of this technology is geographically extensive, ranging through canyons and other underwater habitat across the world's oceans.

Many navies of NATO-member countries rely heavily on this technology. For example, according to Rear Admiral Steven Tomaszeski, Oceanographer of the U.S. Navy, mid-frequency systems provide the U.S. Navy's "standard method" for localizing submarines.³ U.S. Navy vessels are widely equipped with mid-frequency sonar systems. As of January 2004, 58% of the U.S. Navy's 294 surface ships and submarines were equipped with at least one form of mid-frequency active sonar, and of the 161 ships and submarines planned or under construction, 93 are to be similarly equipped.⁴ The navies of the United Kingdom, Belgium, France, Germany, Spain, Canada, Norway, Italy, the Netherlands, Portugal, Turkey and many other countries also employ mid-frequency sonar, although little information is publicly available about their systems.

Not surprisingly, then, joint NATO military exercises have repeatedly incorporated training with this technology. For example, the multilateral NATO exercise known as DOGFISH, which focuses on anti-submarine warfare techniques, takes place annually in the Ionian Sea and regularly employs mid-frequency active

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

² Dep't of Commerce & Sec'y of the Navy, *Joint Interim Report: Bahamas Marine Mammal Stranding Event of 15-16 March 2000* at 24, 36 (2001) (hereinafter "Commerce & Navy, Joint Interim Report"). The exact source level of this system is classified and was not divulged in the stranding report. *Id.*

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

⁴ *Id.*

sonar. In fact, one of the best-documented whale stranding events linked to naval sonar, the Greek stranding in 1996 discussed further below, was correlated with the movements of a low- and mid-frequency active sonar system operated by NATO during this exercise. More recently, NATO exercises employing sonar off of Morocco were the suspected cause of two whale deaths in the Canary Islands this past July.

B. Low-Frequency Active Sonar

In the last decade or so, a number of countries have begun testing and deploying a new generation of active sonar systems that operate in the low frequencies, below 1000 Hz. Like mid-frequency systems, these new systems are used for anti-submarine warfare. Because low-frequency sound waves travel very efficiently in seawater, sound from these systems has an even greater geographic reach than mid-frequency sonar and, thus, an even greater potential for environmental harms.

Perhaps the best known of these systems was developed by the U.S. Navy and is known as SURTASS LFA. It produces sound so intense and so far-reaching that it can be heard at 165 dB as far as 35 miles in all directions from its source – a level that, even according to the Navy’s estimates, will cause a “significant change in biologically important behavior” in half of the marine mammals exposed.⁵ Despite the potential for serious harm associated with this new technology, the Navy proposed to test and train with it throughout much of the world’s oceans. In 2002, several of the signatories of this letter brought suit in U.S. court challenging this proposed deployment on environmental grounds—and won. Citing “the certain harassment and possible injury of marine mammals and other sea creatures, many of them endangered,” that would result from “the extremely loud and far traveling LFA sonar,” the court issued a permanent injunction limiting the Navy’s training with such sonar to certain areas of the western Pacific ocean, pending further environmental review. *See Natural Resources Defense Council v. Evans*, 279 F.Supp.2d 1129, 1188-92 (N.D. Cal. 2003). This restriction remains in force today.

A number of European navies with similar systems, however, including Britain, France, and the Netherlands, are beginning to deploy them without geographic or other limitation.⁶ In 2002, the British system known as Sonar 2087, which uses both the low and mid-frequencies, was tested at sea in the Bay of Biscay and was proposed for deployment in the Mediterranean Sea.⁷ Additional sea trials of Sonar 2087 have been

⁵ U.S. Navy, Final Overseas Environmental Impact Statement and Environmental Impact Statement for Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) Sonar, Vol. I (Jan. 2001); 67 Fed. Reg. 46712, 46761 (July 16, 2002).

⁶ Joris Janssen Lok, *Green issues loom larger in future blue-water active sonar operations*, *Jane’s International Defense Review*, Aug. 2004, at 44-47.

⁷ Review of Sonar 2087 trials on the UK Ministry of Defence website, available at http://www.mod.uk/dpa/projects/S2087_Trials.htm (last visited February 8, 2005); Royal Navy,

conducted in the deep and shallow waters of the northwest approaches to the UK, and the next sea trial is planned for the same area in July 2005.⁸ If successful, the system will then be entered into service.⁹

NATO itself has also trained with low-frequency sonar, sometimes with disturbing results, as was seen in the 1996 Greek stranding during the multilateral NATO exercise known as DOGFISH. This training is ongoing despite the growing international consensus that high-intensity active sonar poses a significant threat to marine life.

II. Impacts of High-Intensity Sonar on Marine Mammals and Other Species

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

By far the most widely-reported and dramatic of these effects are the mass strandings of beaked whales and other marine mammals that have been associated with military sonar use. In March 2000, for example, sixteen whales from at least three species—including two minke whales—stranded over 150 miles of shoreline along the northern channels of the Bahamas. These beachings occurred within 24 hours of U.S. Navy ships using mid-frequency sonar (AN/SQS-53C and AN/SQS-56) in those same channels.¹⁰ Post-mortem examinations found, in all whales examined, hemorrhaging in and around the ears and other tissues related to sound conduction or production, such as the larynx and auditory fats, some of which was debilitating and potentially severe.¹¹ It is now accepted that these mortalities were caused, through an unknown mechanism, by the Navy's use of mid-frequency sonar.

The Bahamas event is one of numerous strandings coincident with military activities and active sonar that have now been documented, several of which implicate NATO exercises:

- (1) 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

Environmental Impact Assessment in Support of the Procurement of Sonar 2087 (Oct. 2002)
(Mediterranean Sea).

⁸ Review of Sonar 2087 trials on the UK Ministry of Defence website, available at http://www.mod.uk/dpa/projects/S2087_Trials.htm (last visited February 8, 2005).

⁹ *Id.*

¹⁰ Commerce & Navy, *Joint Interim Report* at iii, 16.

¹¹ *Id.*

of a NATO exercise.¹² A third whale is believed to have been seen floating offshore.¹³ 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."¹⁴

(2) Also in July 2004, a pod of melon-headed whales exhibited unusual and troubling behavior just off the shoreline of Kaua'i, Hawai'i, within range of Japanese and U.S. Navy ships participating in the biennial Rim of the Pacific (RIMPAC) tactical naval exercises there. Two hundred of the normally deep-water whales crowded into shallow waters very near shore, an event that apparently had never before been seen in Kaua'i. According to a biologist observer associated with NMFS, the pod appeared quite stressed. In the ensuing chaos, one juvenile member of the pod stranded and died. After learning of this unusual whale behavior, the Navy temporarily restricted its active sonar operations in the area.¹⁵

(3) 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.¹⁶ Fourteen harbor porpoises—an abnormally high number given the average stranding rate of six per year—were found beached along nearby shores.¹⁷

(4) In September 2002, at least fourteen beaked whales from three different species stranded in the Canary Islands. Four additional beaked whales stranded over the next several days.¹⁸ The strandings occurred while a Spanish-led naval exercise that included the participation of a NATO contingent and at least one

¹² See Reuters, *Dead Whales Land in Canaries after Naval Exercises*, ABC News, July 23, 2004.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ This account incorporates details as reported by Jan TenBruggencate in *Whale Dies After Pod Returns to Sea*, Honolulu Advertiser, July 7, 2004. See also Marc Kaufman, *Whales' Flight Revives Sonar Theory*, Washington Post, July 11, 2004 at A1 (detailing incident).

¹⁶ Christopher Dunagan, *Navy Sonar Incident Alarms Experts*, Bremerton Sun, May 8, 2003.

¹⁷ National Marine Fisheries Service, *Preliminary Report: Multidisciplinary Investigation of Harbor Porpoises (*Phocoena phocoena*) Stranded in Washington State from 2 May – 2 June 2003 Coinciding with the Mid-Range Sonar Exercises of the USS Shoup 2* (2004). Unfortunately, according to the preliminary report prepared by NMFS, freezer artifacts and other problems incidental to the preservation of tissue samples made the cause of death in most specimens difficult to determine; but the role of acoustic trauma could not be ruled out. *Id.* A final report is pending.

¹⁸ Vidal Martin *et al.*, *Mass Strandings of Beaked Whales in the Canary Islands*, in *Proceedings of the Workshop on Active Sonar and Cetaceans* 33 (P.G.H. Evans & L.A. Miller eds., 2004).

ship equipped with mid-frequency sonar was conducting anti-submarine warfare exercises in the vicinity.¹⁹

(5) 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.”²⁰

(6) In April 2002, a beaked whale and a humpback whale stranded near Vieques while a battle group training exercise was taking place offshore.²¹

(7) 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.”²²

(8) In January 1998, according to a NMFS biologist, a beaked whale “stranded suspiciously” at Vieques as naval exercises were about to commence offshore.²³ Another beaked whale stranded in the same area and under similar circumstances in May 2000.

(9) In 1996, twelve Cuvier's beaked whales stranded along 35 kilometers of the west coast of Greece. These strandings were correlated, by an analysis published in the journal *Nature*, with the movements of a low- and mid-frequency active sonar system operated by NATO during the DOGFISH exercise.²⁴ A subsequent NATO investigation found the strandings to be closely timed with the movements of the NATO vessel sonar, and ruled out all other physical environmental factors as a cause.²⁵

(10) Between 1985 and 1989, at least three separate mass strandings of beaked whales occurred in the Canary Islands, as reported in *Nature*.²⁶

¹⁹ Kenneth R. Weiss, *Whale Deaths Linked to Navy Sonar Tests*, L.A. Times, Oct. 1, 2002, at A3.

²⁰ Testimony of Dr. Darlene Ketten submitted to the U.S. District Court in *NRDC v. Evans*, 279 F.Supp.2d 1129 (N.D. Cal. 2003).

²¹ Email from Ken Hollingshead of the U.S. National Marine Fisheries Service (“NMFS”) to Joe Johnson and Clay Spikes (Apr. 11, 2002).

²² Personal communication of Dr. David Nellis, biologist with the U.S. Virgin Island Department of Fish and Game, to Eric Hawk of NMFS (Oct. 1999); email from Ken Hollingshead of NMFS to John Mayer (March 19, 2002).

²³ Personal communication of Eric Hawk, biologist with NMFS, to Ken Hollingshead (Feb. 12, 2002).

²⁴ A. Frantzis, *Does Acoustic Testing Strand Whales?*, 392 *Nature* 29 (1998).

²⁵ See SACLANT Undersea Research Center, *Summary Record. La Spezia, Italy, 15-17 June 1998. SACLANTCEN Bioacoustics Panel, SACLANTCEN M-133* (1998).

²⁶ M. Simmonds & L.F. Lopez-Jurado, *Whales and the Military*, 337 *Nature* 448 (1991).

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.²⁷ It was reported that mass live strandings occurred each time exercises took place in the area.²⁸

Though too recent to link definitively to sonar, just last month at least thirty-seven whales of three species beached themselves along the shores of North Carolina in the U.S., after the U.S. Navy used high-intensity sonar off the coast there.²⁹ Very little is yet known about this stranding, but its timing, placement, and multi-species makeup are sufficiently troubling to have triggered a government inquiry into the Navy's involvement.³⁰

Some preliminary observations can be drawn from these incidents. For example, beaked whales, a group of deep-water species that are seldom seen and may in some cases be extremely rare, seem to be particularly vulnerable to the effects of active sonar. A 2000 review undertaken by the Smithsonian Institution supports this conclusion, finding that every mass stranding on record involving multiple species of beaked whales has occurred with naval activities in the vicinity.³¹

But the global magnitude of sonar's effects on beaked whales—or other marine mammals—is not known. First, most of the world lacks networks to identify and investigate stranding events, particularly those that involve individual animals spread out over long stretches of coastline, and therefore the mortalities of beaked whales identified thus far are likely to represent only a subset of a substantially larger problem. Second, until recently, no one knew to look for a potential link between stranding events and nearby naval exercises. Now that such a link is strongly suspected, stranding incidents related to naval exercises are more likely to be recognized as such. This has been borne out by a recent re-examination of records of old strandings conducted by several prominent biologists. As reported in the Scientific Committee of the International Whaling Commission, the re-examination showed a concentration of mass beaked whale strandings along the Japanese coast near Yokosuka, one of the primary bases for U.S. naval activity in the western Pacific, with ten mass strandings reported since the late 1950s; an additional 64 beaked whales were reported to have stranded individually. By comparison, only two other possible mass strandings of beaked whales are known to have occurred over the rest of the entire Pacific coast of

²⁷ *Id.*

²⁸ *Id.*

²⁹ Marc Kaufman, *Whale Stranding in N.C. Followed Navy Sonar Use*, Washington Post, Jan. 28, 2005, at A3.

³⁰ *Id.*

³¹ Marine Mammal Program of the National Museum of Natural History, *Historical Mass Mortalities of Ziphiids 2-4* (Apr. 6, 2000); see also 2 J. Cetacean Res. & Mgmt., Supp., Annex J at § 13.8 (2000) (report of the IWC Scientific Committee, Standing Working Group on Environmental Concerns).

Japan. The authors concluded that a relationship between mass strandings and naval acoustics was “strongly suggest[ed]” by this record.³²

It should be noted that beaked whales are not the only species vulnerable to these severe effects. A wide variety of other cetaceans have shown signs of stranding or significant distress in response to active sonar use. For example, both minke and pygmy sperm whales have stranded in past events.³³ Additionally, as discussed above, there is evidence indicating that melon-headed whales, orcas, and harbor porpoises may all exhibit dramatic behavioral responses to active sonar.³⁴

Furthermore, although the physical process linking sonar to strandings is not well understood, it appears from the record that debilitating, possibly lethal injuries are occurring in whales exposed to sonar at sea—only some of which may then strand. According to a recent report in the journal *Nature*, animals that came ashore during sonar exercises off the Canary Islands in September 2002 had developed large emboli in their organ tissue. The report suggested that the animals had suffered from severe symptoms resembling those of decompression sickness, or “the bends,” either because panic led them to surface too rapidly or because the sound itself precipitated the growth of nitrogen bubbles in the blood, which expanded to devastating effect.³⁵ At this point the evidence is considered “compelling” that acoustic trauma, or injuries resulting from behavioral responses, has in some way led to the deaths of these animals.³⁶

That beaked whales are suffering injury independent of their actually turning up on shore would be consistent with one of the most disturbing findings from the Bahamas, the only stranding event for which baseline survey data on these species are available. Since the March 2000 Bahamas stranding event, the area’s Cuvier’s beaked whales have all but disappeared, leading researchers who have studied the population for years to conclude that nearly all of the animals either died of physical injury or were driven to permanently abandon their habitat.³⁷

³² R.L. Brownell, Jr. *et al.*, *Mass Strandings of Cuvier’s Beaked Whales in Japan: U.S. Naval Acoustic Link* (IWC Doc. SC/56E37). As in the case of many of the other incidents discussed above, most of the animals involved in these incidents over the years were observed to have stranded live.

³³ Commerce & Navy, *Joint Interim Report* at iii (minke whales); Martin *et al.*, *Mass Strandings of Beaked Whales* at 35 (pygmy sperm whales); *see also* National Marine Fisheries Service, *Preliminary Report* (harbor porpoises).

³⁴ *See* discussions of Haro Strait 2003 and Hawaii 2004 stranding incidents *supra*, p. 7.

³⁵ *See* P.D. Jepson *et al.*, *Gas-Bubble Lesions in Stranded Cetaceans*, 425 *Nature* 575-576 (2003).

³⁶ Evans and Miller, *Concluding Remarks*, in *Proceedings of the Workshop on Active Sonar and Cetaceans* (P.G.H. Evans & L.A. Miller eds., 2004).

³⁷ Declaration of Kenneth Balcomb, *NRDC v. Evans*, 279 F.Supp.2d 1129 (N.D. Cal. 2003); telephone interview with Kenneth Balcomb, Executive Director and Research Biologist, Center for Whale Research (May 5, 2004).

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

- temporary or permanent loss of hearing, which impairs an animal's ability to communicate, avoid predators, and detect and capture prey;
- 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.³⁸

As evidence of the harm caused by mid-frequency sonar to marine mammals and other ocean life mounts, so do the calls for action to mitigate this harm.

III. Obligations to Mitigate Impacts from High-Intensity Sonar

There is a growing international consensus that the problem of ocean noise must be addressed quickly and multilaterally. In fact, last year saw a remarkable public acknowledgment of the dangers of naval sonar to marine mammals and other ocean life, and several calls to action have been issued of which NATO should take careful note.

First, the International Whaling Commission's (IWC) Scientific Committee, which is the leading international body concerned with the conservation and management of global whale stocks, reviewed the latest evidence on the impacts of anthropogenic noise on cetacean populations at its 2004 meeting and issued findings and conclusions that demonstrate a clear scientific consensus about the dangers of undersea noise.³⁹ According to the report of the Standing Working Group of

³⁸ For a review of research on behavioral and auditory impacts of undersea noise, see, e.g., W. John Richardson *et al.*, *Marine Mammals and Noise* (1995); National Research Council, *Marine Mammal Populations and Ocean Noise* (2005); and P. Tyack, Behavioral Impacts of Sound on Marine Mammals, Presentation to the U.S. Marine Mammal Commission Advisory Committee on Acoustic Impacts on Marine Mammals (February 4, 2004). Dramatic behavioral responses to mid-frequency sonar have been documented in orcas, minke whales, and harbor porpoises. See, e.g., Associated Press, *Navy Confirms Using Sonar in Haro Strait*, Seattle Times, May 15, 2003; and Elizabeth Gillespie, *Navy Sonar May Have Spooked Orcas, Porpoises*, Seattle Times, May 9, 2003.

³⁹ International Whaling Commission, 2004 Report of the Scientific Committee at § 12.2.5.

Environmental Concerns (SWG) summarizing that review, “[t]here [is] now compelling evidence implicating anthropogenic sound as a potential threat to marine mammals. This threat is manifested at both regional and ocean-scale levels that could impact populations of animals.”⁴⁰

With respect to military sonar in particular, the SWG concluded that “[t]he weight of accumulated evidence now associates mid-frequency, military sonar with atypical beaked whale mass strandings. This evidence is very convincing and appears overwhelming.”⁴¹ The SWG further noted the “possible world-wide magnitude of this problem,”⁴² reporting concerns that “assessments of stranding events do not account for animals that are severely affected or died but did not strand.”⁴³ Based on its serious concerns, the IWC has placed noise as a standing priority item on its agenda.

Second, in October 2004 the European Parliament formally called on its twenty-five member states—many of whom are NATO members—to restrict the use of high-intensity active naval sonar until more is known about the harm it inflicts on whales and other marine life.⁴⁴ As each of you knows, decisions of the European Parliament are taken by the democratically elected representatives of over 400 million citizens in Britain, France, Germany, Greece, Spain and other nations.

Noting the growing body of scientific research that confirms such sonar poses “a significant threat to marine mammals, fish and other ocean wildlife,” the resolution calls on the European Union and member states to “adopt a moratorium on the deployment of high-intensity active naval sonars until a global assessment of their cumulative environmental impact” has been completed. It also calls on member states to establish a Multinational Task Force for developing international agreements on sonar and other sources of intense ocean noise; to exclude and seek alternatives to the harmful sonars used today; and to “immediately restrict the use of high-intensity active naval sonars in waters falling under their jurisdiction.” Finally, the resolution targets NATO as a framework within which states should press for the adoption of restrictions on the use of high-intensity active sonars and the development of alternative technologies.

Third, in November 2004 the Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS), which represents 16 European, North African, and Middle-Eastern countries, approved a resolution calling for “extreme caution” in conducting activities that produce intense

⁴⁰ Report of the Scientific Committee, Annex K, at § 6.4.

⁴¹ *Id.*

⁴² *Id.*, Annex K at § 6.3.

⁴³ *Id.*

⁴⁴ Resolution B6-0018/2004 of the European Parliament (October 21, 2004).

underwater noise, including military sonar activities.⁴⁵ Citing evidence linking the use of military sonar to the “strandings and deaths” of whales as well as concern over the general increase in noise levels in the world’s oceans, the parties directed their Scientific Committee to develop common guidelines for the generation of harmful underwater noise in the Mediterranean and Black Seas. Moreover, the parties recommended that activities producing harmful noise, including military sonar activities, ideally “would not be conducted” in those areas pending the development of such guidelines.

Fourth, the IUCN-World Conservation Union recently adopted a resolution calling for urgent action by states to reduce the impacts of high-intensity naval sonar systems on beaked whales and other vulnerable species.⁴⁶ The IUCN is the world’s leading body for conservation policy, consisting of over 70 national governments and more than 400 non-governmental organizations, and the decisions it takes at its quadrennial meetings set the global agenda for conservation over the next four years. The resolution recognizes undersea noise as a form of pollution; calls on states to avoid the use of intense noise sources in the habitat of vulnerable species or where marine mammals and endangered species may be concentrated; and urges states to work through the United Nations Convention on the Law of the Sea to develop mechanisms for the control of this emergent problem.

NATO has been slow to respond to this growing international pressure to address and mitigate the impacts of military active sonar, despite the fact that NATO has been aware of the controversy surrounding sonar technology and its effects on marine life for years. NATO’s own SACLANT Undersea Research Center was heavily involved in analyzing the 1996 Greece strandings and, in fact, itself correlated those strandings with the movements of the NATO vessel involved and ruled out all other physical environmental factors as a cause.⁴⁷ In 1998, under close scrutiny on this issue, SACLANT hosted a bioacoustics panel to address sonar’s threats. It appears, however, that NATO may have considered this panel little more than a publicity shield for ongoing low-frequency active sonar (or “LFAS”) activities. SACLANT’s website describes NATO’s efforts on this issue as follows:

Early in 1998 NATO was under heavy criticism from environmentalists for disregard for mammal life, resulting from LFAS trials, as evidenced by articles in NATURE, TIME magazine, numerous papers and by TV and radio stations. The Centre seized the opportunity and turned the tables by organizing a bioacoustics panel of national experts on the subject, defusing the negative claims. A “Marine Environmental Policy

⁴⁵ ACCOBAMS Resolution 2.16, *Assessment and Impact Assessment of Man-Made Noise*, Second Meeting of the Parties (Nov. 2004).

⁴⁶ IUCN Resolution 053, *Undersea Noise Pollution* (Nov. 2004).

⁴⁷ See SACLANT Undersea Research Center, *Summary Record, La Spezia, Italy, 15-17 June 1998, SACLANTCEN Bioacoustics Panel, SACLANTCEN M-133* (1998).

and Mitigation Procedure” was written by the Centre and endorsed by the relevant NATO subgroup (NG2) and the nations. Leadership by the Centre is formalised in an ongoing, multi-national project to improve and refine understanding of the issues. . . . **The effort has so far received positive press coverage and allows the Centre and NATO to continue working with Low-Frequency sources to address operational shortfalls.**⁴⁸

To the extent that this summary reflects a belief by NATO that concerns over sonar’s effects are either satisfied or limited to low-frequency sonar, it is wrong—as demonstrated by the series of recent international actions listed above. Public pressure to mitigate the harmful effects of military active sonar has increased, not decreased, since 1998. In 2003, for example, NATO was presented with a petition, signed by 85,000 people, calling for six specific actions to address the significant threat posed by active sonar. NATO was also presented with a similar petition by the European Coalition for Silent Oceans, of which several of us are members, signed by seventy environmental groups representing over 8.3 million people. At the time, NATO spokesman Jamie Shea said that the petitions would be considered,⁴⁹ though no action has come of them to date. Neither has NATO responded to the European Parliament’s call for restrictions on the use of active sonar, to the recommendations on undersea noise recently issued by the International Whaling Commission Scientific Committee, or to the resolutions adopted by ACCOBAMS and the IUCN respecting active sonar.

Thus, although NATO has begun to acknowledge the dangers of active sonar, we are concerned that it has failed to take meaningful action to address those dangers in a manner consistent with its own stated commitment to environmental stewardship.

IV. Opportunities to Mitigate Impacts from High-Intensity Sonar

In light of the developments discussed in this letter, the mass mortalities of whales that have been documented, and the range of other potential harms described above, both the biological impacts of high-intensity sonar and NATO’s protocol for training with these systems must be reassessed.⁵⁰ Effective, common-sense mitigation measures exist that will greatly reduce the harm caused by active sonar to marine life, without sacrificing military readiness. Indeed, several countries have already begun to take actions showing how such a balance can be achieved.

⁴⁸ SACLANT Undersea Research Center website, available at <http://www.saclantc.nato.int/frameset-hl.html> (last visited February 8, 2005) (emphasis added).

⁴⁹ “NATO to consider ban on ‘dolphin-death’ sonar,” press release of Caroline Lucas MEP, October 13, 2003, available at http://www.carolinelucasmep.org.uk/news/LFAS_10102003.html (last visited December 6, 2004).

⁵⁰ This letter does not address NATO’s use of these systems in time of war or heightened threat conditions.

For example, at the end of 2004 the Spanish Ministry of Defense announced a prohibition of all active sonar exercises off the coast of the Canary Islands, the site of many whale strandings coincident with military training exercises.⁵¹ This is the first governmental action of its kind excluding all active naval sonar from waters that have been shown to shelter particularly sensitive species, and it provides a helpful example of the sort of measures that the international community should be striving to adopt. By restricting military sonar training from these waters, the Spanish government appears to have recognized that military training can be undertaken without risking the most vulnerable species and habitats.

Similarly, in the wake of the Bahamas stranding of 2000, the U.S. Navy has agreed to avoid the conduct of multi-ship active sonar operations in the Northwest Providence Channel of the Bahamas. Though this action is not as restrictive as the Spanish government's, it again shows a willingness to acknowledge that certain areas are too sensitive to permit unrestricted sonar training. With respect to its new, low-frequency sonar system, the U.S. Navy has limited training with SURTASS LFA in *all* waters except certain designated areas in the western Pacific, pending further environmental review. By restricting its low-frequency sonar operations to designated training areas, which were chosen in part to avoid particularly sensitive biological resources, the Navy is able to achieve its training objectives while reducing harm to marine mammals and other resources.

NATO and each of its member countries should follow in these footsteps and should consider, as part of the environmental review of planned exercises, the following measures for preventing and mitigating the impacts of mid-frequency training exercises:

- (1) Reduce the number and tempo of training exercises using high-intensity active sonar to the minimum necessary, and investigate all options for reducing the operational need for such exercises;
- (2) Reduce the source level of the sonar signal to the maximum extent practicable;
- (3) Carefully avoid known beaked whale habitat in the siting of sonar tests and exercises;
- (4) Avoid concentrations of other marine mammals – and other marine species that may also be affected – by identifying low-risk areas for use in routine training, consistent with mission demands;⁵²

⁵¹ See Statement of Bono Martinez, Senior Defense Minister of Spain, to the Spanish Parliament on November 3, 2004 (announcing moratorium).

⁵² Rather than go through the business of identifying exclusion zones around the world, a task that would be both difficult and capricious given our current state of knowledge about species abundance, we believe it may be far more efficient – and significantly more protective of marine mammals – to establish specific areas for use, as the U.S. Navy has done with respect to its SURTASS LFA system. See *supra* at p. 15.

- (5) As a supplement to geographic avoidance, establish and monitor a safety zone to the greatest practicable distance around transmit vessels;⁵³
- (6) Conduct pre-operational surveys for marine mammals and endangered species beyond the safety zone;
- (7) Conduct post-operational surveys for dead or injured marine mammals and other species;
- (8) Provide funding to stranding networks in the vicinity of sonar exercises, and investigate any strandings or deaths of marine mammals that may be associated with the use of mid-frequency sonar in a publicly open, inclusive, and transparent manner;
- (9) Research ways to alter the characteristics of the sonar signal so as to reduce the likelihood of pathologies such as have been seen in beaked whales; and
- (10) Conduct a review into the potential of less intrusive, alternative technologies to substitute for current mid-frequency systems, and provide funding for development of promising alternatives that are identified in this process.

We strongly believe that incorporating these or similar measures into the protocols for sonar exercises by NATO and its member countries would result in real environmental benefits without detracting from military readiness. A few, though not all, of these measures appear in the NATO Undersea Research Centre Human Diver and Marine Mammal Risk Mitigation Rules, which provide for avoidance of whale breeding areas and sanctuaries, monitoring, and safety zones.⁵⁴ These mitigation measures, however, appear to apply only to Undersea Research Centre experimental activities, not to NATO training exercises.⁵⁵ Routine military training is not incompatible with the protection of our natural resources, and NATO should welcome the chance to affirm this principle through the incorporation of meaningful mitigation measures into its training as well as its research.

⁵³ It was recognized at a recent scientific workshop on beaked whales (convened by the United States Marine Mammal Commission) that established forms of monitoring of these species are ineffective at most sea states. J. Barlow, Presentation to the Marine Mammal Commission Beaked Whale Workshop (Apr. 14, 2004). This only underscores the point that monitoring for marine mammals around a sonar vessel is no substitute for careful siting.

⁵⁴ See "NATO URC Human Diver and Marine Mammal Risk Mitigation Rules," Staff Instruction 77, at Annex B (May 10, 2004).

⁵⁵ *Id.* at 2.

We also reiterate the steps that NATO was called upon to take in the petition submitted by the European Coalition for Silent Oceans in 2003. These steps are as follows:

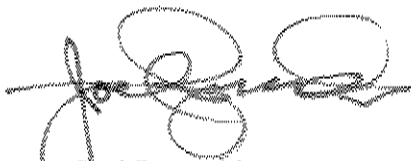
- (1) That the Secretary General use his power and influence to urge member states to effectively and rapidly mitigate their use of high-intensity active sonar;
- (2) That the North Atlantic Council adopt a moratorium on the deployment of new, low-frequency active sonar systems, whether by NATO or by its member states, until a global assessment of their cumulative environmental impacts can be prepared;
- (3) That the Secretary General conduct a review of alternative surveillance technologies and their potential to reduce reliance on active acoustics in anti-submarine warfare;
- (4) That NATO discuss the impact of high-intensity active sonars on the marine environment at the next meeting of the North Atlantic Council and in the NATO Parliamentary Assembly;
- (5) That the North Atlantic Council, through its Political Committee or Policy Coordination Group, consider limits on the transfer of quiet diesel-electric and nuclear submarines to nations outside the NATO Alliance; and
- (6) That the North Atlantic Council commit itself to work with the EU and its member states to initiate the formation of a Multinational Task Force with the goal of developing international agreements regulating noise levels in the world's oceans.

V. Conclusion

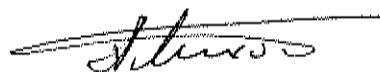
Each of the undersigned organizations and their members are committed to protecting marine mammals and other ocean species, and we firmly believe that this goal can be met without undermining NATO's ability to contribute to member state security. We recognize, too, that NATO has an interest in addressing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

We would welcome the opportunity to engage in a constructive dialogue on this issue and would be happy to talk with you and your staffs at further length about solutions. We would also be happy to provide a briefing on this issue to you or to the North Atlantic Council at your convenience. We invite you to contact us to begin such discussions.

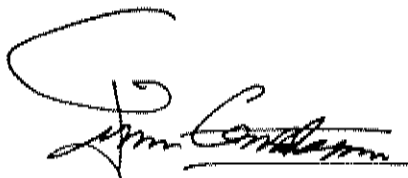
Very truly yours,



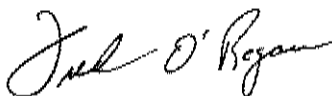
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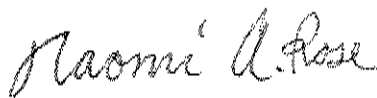
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