

ACTIONS REQUESTED

Because ocean noise is a form of pollution that threatens whales, dolphins, fish and many other species, nations must act together to protect marine environments from increasing noise. We consequently call upon the United Nations and its Member States to:

- **Acknowledge the need** for international and regional regulation of underwater noise.
- **Urge relevant UN bodies**, including the UNEP Governing Council and Regional Seas Programmes, UNCLOS, UNICPOLOS and UN-Oceans to take the lead in organizing a Multinational Task Force to develop international agreements regulating noise levels in the world's oceans.
- **Include within the mandate for the above bodies**, active consideration of all measures necessary to prevent, reduce and control pollution of the marine environment from intense noise sources with the goal of developing effective mitigation procedures and alternative technologies for reducing the hazards of intense ocean noise.
- **Apply the Precautionary Principle** with regard to the marine environment to significantly reduce, mitigate or cease activities resulting in the production of intense underwater noise until effective guidelines are developed.

This call to the United Nations to act on ocean noise is expressed by over 120 NGOs across the globe represented by:

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IT'S TIME FOR INTERNATIONAL REGULATION OF OCEAN NOISE POLLUTION



...WHILE WE STILL HAVE WHALES AND FISHERIES

Why is Ocean Noise a Problem?

Anthropogenic (or "human-generated") noise levels in the marine environment are increasing at an alarming rate. Ocean noise levels in some areas have doubled every decade for the past 60 years. There is mounting concern that noise proliferation poses a significant threat to the survival of marine mammals, fish and other ocean wildlife.

Marine animals use sound to navigate, find food, locate mates, avoid predators and communicate with each other. Flooding their world with intense sound interferes with these activities with serious consequences. A growing body of scientific research confirms anthropogenic noise can induce a range of adverse effects in marine mammals and other ocean creatures, from disturbance to injury and death.

Impacts of Ocean Noise on Marine Mammals

- Mortality or serious injury caused by hemorrhaging around the brain, air cavities, lungs and other organs
- Mortality or serious injury caused by the formation of nitrogen bubbles in the bloodstream, leading to embolism
- Temporary or permanent loss of hearing, which impairs an animal's ability to communicate, avoid predators and detect and capture prey
- Stranding caused by the above or other effects
- Avoidance behavior, which can lead to abandonment of habitat or migratory pathways and disruption of mating, feeding or nursing
- Aggressive or agonistic behavior, which can result in injury
- Masking of biologically meaningful sounds, such as the call of predators or potential mates
- Depletion of prey species

Impacts of Ocean Noise on Fisheries

Three decades of controlled scientific studies indicate intense ocean noise damages fish, and consequently, fisheries. The hearing organs of fish and marine mammals are similar in structure and are used for similar purposes, so they are similarly impacted by intense noise.

- Damage to fish ears and hearing
- Reduction in cod catches off Norway by as much as 70 percent from seismic shooting
- Impact on sandeels from airguns
- Avoidance behavior in capelin and eels

Since anthropogenic ocean noise can travel hundreds of miles from the source, the potential impact to fisheries from domestically unregulated foreign noise activities is immense. This could have significant economic impact on national economies, commercial fisheries and local fishing communities.

What is the Source of all the Noise?

Sources of anthropogenic ocean noise include the use of explosives, oceanographic experiments, geophysical research, underwater construction, ship traffic, intense active sonars and air guns used for seismic surveys for oil and related activities.

Explosives

Explosives are detonated in the ocean by the military, scientific researchers and the oil and gas industry for destruction purposes, seismic exploration or testing equipment, such as ship-shock trials. Explosions are created by chemical devices, cause extremely high noise levels in the wideband frequency range and are characterized by rapid rise times.

Seismic Airguns

Airgun arrays are used primarily for oil and gas exploration and research purposes. The airguns produce sound by introducing air into the water at high pressure, usually directed toward the sea floor with up to 20 guns being fired in synchrony, while "streamers" of hydrophones listen for echoes. A single airgun pulse lasts about 20-30 milliseconds, occurs every 10-12 seconds and surveys can last weeks at a time.

Military Sonar

Active sonar is used by military vessels on exercises and during routine activities to hunt for objects in the path of the vessel. These mid-range and Low Frequency Active (LFA) sonar systems usually emit 100-second-long "pulses" of sound that can be deployed for hours and are designed to focus as much energy as possible in narrow ranges of direction. LFA sonar is a long range surveillance and communication sonar designed to saturate thousands of cubic miles of ocean with sound. Frequencies commonly used by sonar systems range from around 0.1 to 3 kHz with source levels of over 200 decibels.

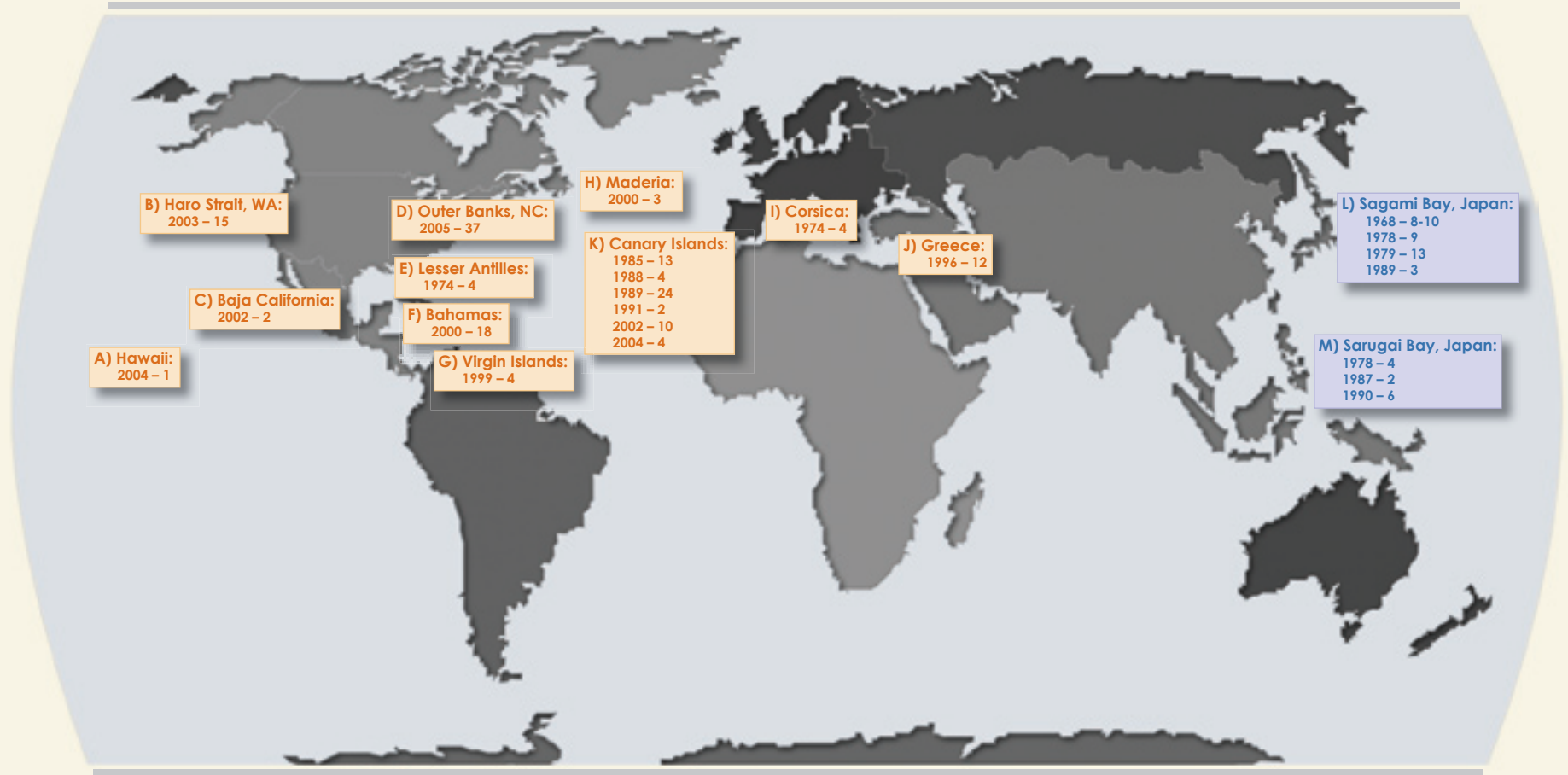
Ship Traffic

Ships produce noise that generally falls in the low frequency band, capable of propagation over immense distances in all directions. These low frequencies coincide with the frequencies used, in particular, by baleen whales for communication and other biologically important activities. Ships generate sound primarily by propeller action, hull mounted machinery and hydrodynamic flow over the hull and flexing of the hull.



Strandings of humpback whales have been increasing off the Abrolhos Banks in Brazil, a key humpback area that is now the site of increasing oil and gas exploration.

MARINE MAMMAL STRANDINGS CONNECTED WITH NOISE POLLUTION



EVENTS CONNECTED TO KNOWN SONIC ACTIVITY

<p>A) Hanalei Bay, Hawaii (2004)</p> <ul style="list-style-type: none"> -1 melon-headed whale -abnormal behavior by up to 200 melon-headed whales -US Navy maneuvers 	<p>F) Bahamas (2000)</p> <ul style="list-style-type: none"> -2 minke whales -15 beaked whales -1 spotted dolphin -US Navy exercise using mid-range sonar 	<p>K) Canary Islands:</p> <p>Fuerteventura (1985)</p> <ul style="list-style-type: none"> -13 beaked whales -NATO naval maneuvers <p>Fuerteventura (1988)</p> <ul style="list-style-type: none"> -3 beaked whales -1 Northern Bottlenose whale -NATO naval maneuvers <p>Fuerteventura (1989)</p> <ul style="list-style-type: none"> -24 beaked whales -NATO naval maneuvers <p>(1991)</p> <ul style="list-style-type: none"> -2 beaked whales -Naval maneuvers <p>Gran Canaria (2002)</p> <ul style="list-style-type: none"> -10 beaked whales -NATO Naval Exercise "Neo Tapon" <p>Lanzarote, Fuerteventura (2004)</p> <ul style="list-style-type: none"> -4 beaked whales -NATO Naval Exercise "Majestic Eagle"
<p>B) Haro Strait, WA (2003)</p> <ul style="list-style-type: none"> -15 harbor porpoises -acoustic-induced avoidance by orcas -US Navy exercise using mid-range sonar 	<p>G) Virgin Islands, US (1999)</p> <ul style="list-style-type: none"> -4 beaked whales -Naval sonar reported 	
<p>C) Baja California (2002)</p> <ul style="list-style-type: none"> -2 beaked whales -Seismic survey using airgun array 	<p>H) Maderia (2000)</p> <ul style="list-style-type: none"> -3 beaked whales -Naval maneuvers 	
<p>D) Outer Banks, NC (2005)</p> <ul style="list-style-type: none"> -34 pilot whales -1 minke whale -2 dwarf sperm whales -US Navy exercise 	<p>I) Corsica, France (1974)</p> <ul style="list-style-type: none"> -3 beaked whales -1 Striped dolphin -Warship reported 	
<p>E) Bonaire, Lesser Antilles (1974)</p> <ul style="list-style-type: none"> -4 beaked whales -Naval explosion reported 	<p>J) Kyparissiakos Gulf, Greece (1996)</p> <ul style="list-style-type: none"> -12 beaked whales -NATO exercise testing LFA sonar 	

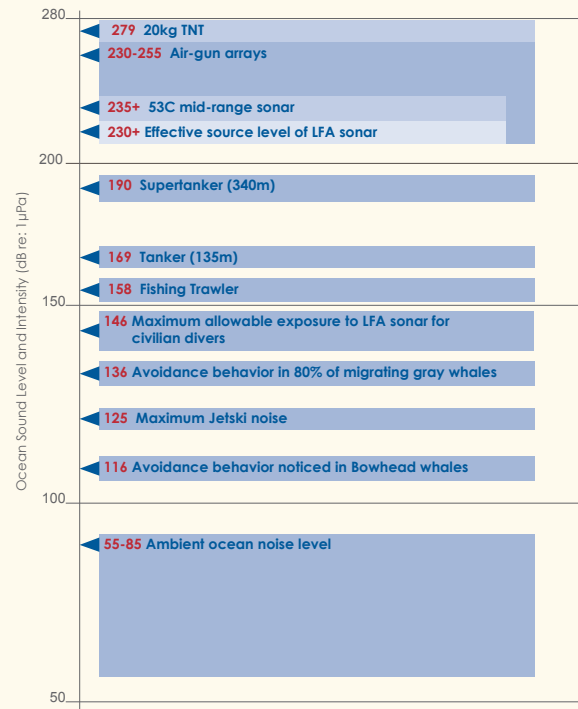
EVENTS IN THE VICINITY OF KNOWN SONIC ACTIVITY

<p>L) Sagami Bay, Japan</p> <p>(1968)</p> <ul style="list-style-type: none"> -8-10 beaked whales <p>(1978)</p> <ul style="list-style-type: none"> -9 beaked whales <p>(1979)</p> <ul style="list-style-type: none"> -13 beaked whales <p>(1989)</p> <ul style="list-style-type: none"> -3 beaked whales
<p>M) Saruga Bay, Japan</p> <p>(1978)</p> <ul style="list-style-type: none"> -4 beaked whales <p>(1987)</p> <ul style="list-style-type: none"> -2 beaked whales <p>(1990)</p> <ul style="list-style-type: none"> -6 beaked whales <p>-Sagami and Saruga Bays lie south and west of Yokosuka at the mouth of Tokyo Bay, the Command Base for the US Navy's Pacific Seventh Fleet.</p>

How Loud Are We Talking About?

Sound energy is measured in decibels (dB) relative to the threshold of human hearing. The decibel scale is logarithmic, which means 20dB is not twice as loud as 10dB, but 10 times more sound energy, and 30dB is 100 times more. In the table below, the supertanker produces over 100 times more energy than the tanker.

Comparative Scale of Known Ocean Noises and their Noise Levels



A Growing International Consensus on Regulating Ocean Noise

Although noise is a recognized form of pollution, sources of noise in the marine environment are not regulated at an international level. Recently, however, international institutions have begun to recognize the threat intense ocean noise poses to marine life and have called for precaution in the use of anthropogenic ocean noise.

The UN Convention on the Law of the Sea (UNCLOS) is the most far-reaching treaty governing the global marine environment, and has been partially adopted into common law. UNCLOS already provides a solid basis for treating harmful, human-generated noise as a form of pollution that must be reduced and controlled. The agreement defines the term "pollution" as "the introduction by man, directly or indirectly, of substances or energy into the marine environment..., which results or is likely to result in such deleterious effects as harm to living resources..." Art. 1(1)(4).

August 2003—Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)

ASCOBANS recognized the dangers of underwater noise pollution in 1994 when its *Conservation and Management Plan* was implemented, setting forth mandatory conservation measures to be applied to cetaceans, including "the prevention of...significant disturbance, especially of an acoustic nature." In 2003, ASCOBANS went further by passing a resolution requesting parties to take steps to reduce the impact of noise on cetaceans from seismic surveys, military activities, shipping vessels, acoustic harassment devices and other acoustic disturbances.

June 2004—International Whaling Commission (IWC)

The Scientific Committee of the IWC stated there is now compelling evidence implicating anthropogenic sound as a potential threat to marine mammals, and that this threat is manifested at both regional and ocean-scale levels that could impact populations of animals. The report calls for multinational cooperation to monitor ocean noise and develop basin-scale and regional noise budgets.

October 2004—The European Parliament

The European Parliament voted overwhelmingly to adopt a resolution calling on Member States to urgently restrict the use of high-intensity sonar in waters under their jurisdiction until a global assessment of their cumulative environmental impact on marine mammals, fish and other marine life has been completed. The European Parliament also called upon its Member States to set up a Multinational Task Force to develop international agreements regulating noise levels in the world's oceans.

November 2004—Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)

A resolution was adopted by ACCOBAMS contracting parties recognizing man-made ocean noise as a dangerous pollutant which can disturb, injure and kill whales and other marine species. It called on member nations to avoid any use of man-made noise in habitats of vulnerable species and in areas where marine mammals or endangered species may be concentrated, to intensify national and international research on the issue, to develop alternative technologies and to require the use of best available control technologies and other mitigation measures in order to reduce adverse impacts.

November 2004—The World Conservation Union (IUCN)

The IUCN adopted a resolution recognizing noise as a form of pollution and calling on member governments to apply the precautionary principle in assessing the impacts of noise generated by commercial, military and industrial activities. The resolution also entreated governments to avoid the use of powerful noise sources in habitats of vulnerable species, and in areas where marine mammals or endangered species may be concentrated, and to work through the UN "to develop mechanisms for the control of undersea noise."