

## **Position Statement on Ocean Noise to the Seventh meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea**

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### **Problem Statement**

Many species of fish and marine mammals rely on sound to navigate, find food, locate mates, avoid predators, and communicate with one another. As we continue to industrialize our seas, however, we increasingly generate underwater noise that is a newly recognized, harmful, and largely unregulated form of pollution.

A combination of noise sources, including shipping, oil and gas exploration and production, dredging, oceanographic experiments, construction, and military activities, has resulted in ocean noise levels doubling every decade for the last several decades in some areas.<sup>1</sup> Over the last ten years, growing evidence shows that ocean noise can kill, injure and deafen a wide range of ocean species, from whales and other marine mammals to invertebrates and fish.<sup>2</sup> In particular, exposure to military sonar and, potentially, seismic surveys has been repeatedly linked with a dismaying series of marine mammal strandings and mortalities.<sup>3</sup>

Intense noise also has been shown to have adverse effects on a variety of commercially harvested species of fish, causing habitat abandonment, reduced reproductive performance and hearing loss.<sup>4</sup> These effects may have important consequences for the health of fisheries. For example, commercial fish catch rates

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<sup>1</sup> See Andrew, R. K., Howe, B. M. and Mercer, J. A. 2002. Ocean ambient sound: Comparing the 1960s with the 1990s for a receiver off the California coast. *Acoustic Research Letters Online* 3(2): 65-70; International Whaling Commission, 2004 Report of the Scientific Committee at Annex K, § 6.4.

<sup>2</sup> For reviews of research on behavioral and auditory impacts of undersea noise on marine mammals and other species, see, e.g., W.J. Richardson et al., Marine Mammals and Noise (1995); National Research Council, Ocean Noise and Marine Mammals (2003); 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); Whale and Dolphin Conservation Society, Oceans of Noise (2004); and M. Jasny, Sounding the Depths II: The Rising Toll of Sonar, Shipping, and Industrial Ocean Noise on Marine Life (2005).

<sup>3</sup> See, e.g., A. Fernández et al., "'Gas and Fat Embolic Syndrome' Involving a Mass Stranding of Beaked Whales (Family Ziphiidae) Exposed to Anthropogenic Sonar Signals," 42 *Veterinary Pathology* 446 (2005); 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); Jepson, P. D. et al., "Gas bubble lesions in stranded cetaceans," *Nature* 425: 575-576 (2003); International Whaling Commission, 2004 Report of the Scientific Committee, Annex K at Tab. 1; Jasny, Sounding the Depths II at Tab. 1-3.

<sup>4</sup> See, e.g., McCauley, R., J. Fewtrell, and A.N. Popper. 2003. High intensity anthropogenic sound damages fish ears. *Journal of the Acoustical Society of America* 113: 638-42; Bart, A. N., Clark, J., Young, J. and Zohar, Y. 2001. Underwater ambient noise measurements in aquaculture systems: a survey. *Aquacultural Engineering* 25: 99-110; Engås, A., S. Løkkeborg, E. Ona, and A. V. Soldal. 1996. Effects of seismic shooting on local abundance and catch rates of cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*). *Canadian Journal of Fisheries and Aquatic Sciences* 53:2238-2249.

have been seen to decrease by 45-70% while air guns are being used for oil and gas exploration in the area.<sup>5</sup> Air guns produce some of the loudest sounds made by humans except for explosives.

Like other forms of marine pollution, ocean noise pollution is transboundary. Powerful sources of ocean noise, such as some military sonars and seismic air guns, can propagate over hundreds or thousands of kilometers.<sup>6</sup> The wide-ranging effects and impacts of ocean noise pollution suggest that a multilateral, ecosystems-based approach to regulation is necessary.

### **Recognition of the Need to Act**

In response to this growing problem, many major intergovernmental bodies have recently recognized ocean noise as a threat to the marine environment and have called for action to manage noise-producing activities in the world's oceans. This growing international consensus has been embodied in, inter alia, the following conclusions and resolutions:

- In February 2006, the United Nations Informal Working Group that was established to study sustainable use of marine biodiversity beyond areas of national jurisdiction convened its first meeting, where it recognized ocean noise as a “growing human pressure” that “require[s] urgent action through international cooperation and coordination.”<sup>7</sup>
- In November 2005, the U.N. 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.”<sup>8</sup>
- In July 2005, the U.N. 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 lists anthropogenic underwater noise as one of five “current major threats to some populations of whales and other cetaceans,” and also includes noise as one of the ten “main current and foreseeable impacts on marine biodiversity” on the high seas.<sup>9</sup>
- In 2004, the World Conservation Union (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 entreats 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 U.N. “to develop mechanisms for the control of undersea noise.”<sup>10</sup>

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<sup>5</sup> Engås, A., S. Løkkeborg, E. Ona, and A. V. Soldal. 1996. Effects of seismic shooting on local abundance and catch rates of cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*). *Canadian Journal of Fisheries and Aquatic Sciences* 53:2238-2249.

<sup>6</sup> See S.L. Nieuwkerk, K.M. Stafford, D.K. Mellinger, R.P. Dziak, and C.G. Fox, “Low-Frequency Whale and Seismic Airgun Sounds Recorded in the Mid-Atlantic Ocean,” 115 *J. Acoust. Soc. Am.* 1832 (2004).

<sup>7</sup> Report of the 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, ¶ 38 (March 2006).

<sup>8</sup> General Assembly Resolution, Oceans and the Law of the Sea, ¶ 84 (A/60/30) (November 2005).

<sup>9</sup> Report of the Secretary General, Oceans and the Law of the Sea, ¶ 159 (A/60/63/Add.1) (July 15 2005).

<sup>10</sup> IUCN/World Conservation Union 2004: Resolution 053, “Underwater Noise Pollution” (Nov. 2004).

- In 2004, the European Parliament overwhelmingly adopted a resolution calling on its twenty-five member states to immediately restrict the use of high-intensity active sonars in waters under their jurisdiction. The resolution also calls upon Member States to set up a Multinational Task Force to develop international agreements regulating noise levels in the world's oceans.<sup>11</sup>
- In 2004, the International Whaling Commission's (IWC) Scientific Committee concluded that compelling evidence implicates ocean noise as a potential threat to marine mammals and their populations at regional and ocean-scale levels. Its report calls for multinational cooperation to monitor ocean noise and develop basin-scale and regional noise budgets, and also for "the inclusion of anthropogenic noise assessments and noise exposure standards within the framework of national and international ocean conservation plans."<sup>12</sup>
- In 2004, the 16 member states of the Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS) recognized manmade ocean noise as a pollutant that can have adverse impacts on marine life ranging from disturbance to injury and death. 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.<sup>13</sup>
- In 2004, the Antarctic Treaty Consultative Meeting addressed the problem of underwater noise pollution in response to a recommendation from the Antarctic and Southern Ocean Coalition that "the best mitigation strategy would be to avoid introducing noise into the Antarctic marine environment to the greatest extent possible, and that those Antarctic waters where biologically important activities occur should be entirely protected from the effects of high-intensity underwater sound, through a measure or other suitable form of regulation."<sup>14</sup>
- In August 2003, the Parties to the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) passed a resolution requesting steps to reduce the impact of noise on cetaceans from seismic surveys, military activities, shipping vessels, acoustic harassment devices and other acoustic disturbances.<sup>15</sup>

The international community is calling for multilateral efforts to address ocean noise as a harmful pollutant in the marine environment. We believe that it is incumbent upon relevant U.N. bodies, especially Parties to the Convention on the Law of the Sea (UNCLOS), to build upon this momentum and take a leadership role in regulating ocean noise.

### **Managing Harmful Ocean Noise within an Ecosystems Approach**

There are many ways to prevent or reduce the harmful impacts of ocean noise on the marine environment, including the use of operational and technological measures to reduce noise at its source, geographical and seasonal restrictions on noise-producing activities, and the development of alternative technologies. Given

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<sup>11</sup> European Parliament 2004: Resolution B6-0018/2004 (October 21, 2004).

<sup>12</sup> International Whaling Commission 2004: Report of the Scientific Committee, at § 12.2.5 and Annex K – Report of the Standing Working Group on Environmental Concerns.

<sup>13</sup> ACCOBAMS 2004: Second Meeting of Parties, Res. 2.16, "Assessment and Impact Assessment of Man Made Noise."

<sup>14</sup> Arctic Treaty Consultative Meeting 2004: Informational Paper 056, "An Update on Some Issues Surrounding Noise Pollution," at 7.

<sup>15</sup> ASCOBANS 2003: Fourth Meeting of Parties, Res. 5, "Effects of Noise and of Vessels."

the rapid rise in ocean noise pollution and its potential for pervasive impacts on marine life, a precautionary approach to managing underwater noise is necessary. Nations and intergovernmental bodies should include elimination and mitigation of noise sources in their ecosystems-based management of marine areas, prioritizing sensitive habitats and species.

For example, Marine Protected Areas (MPAs) are one of the most effective means to protect cetaceans and their habitat from noise impacts, especially cumulative and synergistic impacts, and States and intergovernmental bodies should regulate for noise levels within MPAs and other sensitive habitats. Noise impacts should also be considered in the creation of future MPAs. Such areas must be large enough to safeguard essential habitat and migration corridors and to accommodate highly mobile species. Alternatives to MPAs, such as diverting shipping lanes and area/time closures for noise sources, may be appropriate, though may not adequately safeguard the ecosystem.

States and intergovernmental bodies should assess and adaptively manage for noise and strive to remove noise sources from habitats of sensitive populations. They should consider both noise impacts and noise mitigation measures in compulsory and transparent Environmental Impact Assessments for all potentially harmful activities, and should work together to monitor ocean noise and develop basin-scale and regional noise budgets. In cases where the co-occurrence of harmful noise-producing activities and sensitive species and habitats is likely, and where options for eliminating or adequately reducing the impacts are not practicable, such activities should be prohibited.

The Law of the Sea provides a solid basis for regulating harmful, human-generated noise as a form of pollution in these ways, by defining 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) (emphasis added).

### **A Call to Action**

Because ocean noise is a form of transboundary pollution that increasingly threatens whales, dolphins, fish and many other species, we consequently call upon the United Nations and its Member States to:

- **Recognize**, in line with the IWC, IUCN, the European Parliament, ASCOBANS, ACCOBAMS and the Secretary General, that anthropogenic ocean noise may have significant consequences for marine biodiversity and would benefit from an integrated ecosystems approach to ocean management;
- **Heed** the call of the Secretary General to better assess the impacts of underwater noise on acoustically sensitive marine species, including both fish and cetaceans, and to consider noise abatement strategies;
- **Urge** States, the General Assembly, UN Oceans and relevant international and national organizations to take all measures necessary to prevent, reduce and control the generation of harmful undersea noise, focusing especially on removing or minimizing harmful anthropogenic noise within MPAs and in important marine mammal and fish habitat, and on establishing new MPAs to protect marine life from the cumulative and synergistic effects of noise and other stressors; and
- **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.