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An Update on Some Issues Surrounding Noise Pollution

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An Update on Some Issues Surrounding Noise Pollution

I. INTRODUCTION

This Information Paper builds on and updates previous ASOC recommendations to the ATCM and CCAMLR in 2003 concerning impacts of anthropogenic marine noise on marine life in the Antarctic region, based mainly on research undertaken in other regions.

II. OVERVIEW

ASOC eagerly awaits the proceedings of the Conference on the Impacts of Acoustics on Marine Organisms, held in Berlin during March 2002 and which looked specifically at the impacts of noise pollution on Southern Ocean marine species.

ASOC also looks forward to the results of the SCAR specialist acoustic working group's workshop on noise pollution impacts on marine life in the Antarctic, to be held in Cambridge in May 2004.

Since ATCM XXVI, in which the issue of anthropogenic acoustic pollution was introduced by Spain (2003),[1] noise pollution has been recognised at an international level by the recent formation of the US Advisory Committee on the Impacts of Marine Noise Pollution on Marine Mammals. The purpose of the Advisory Committee is to identify and pursue methods to fill some of the important gaps that remain about the emerging issue of noise pollution in the next 10–15 years. The prominence of the issue is also being recognised in the wider scientific cetacean community, not least in recent publications regarding pathologic studies of animals that have died in unusual circumstances. These reports include incidents around the Bahamas, the Canary Islands (Martin *et al.* 2004), Madeira archipelago (Freitas, 2004) and the UK (Jepson *et al.* 2003), where deaths appeared, at first, to be natural. Also, a second atypical mass stranding of Cuvier's beaked whales occurred in the Greek Ionian Sea during military activities (Frantzis, 2004).

The Proceedings of the Workshop on Active Sonar and Cetaceans (Evans and Miller, 2004), from the 17th Annual European Cetacean Society, particularly detail the regional interest in noise pollution. The Proceedings acknowledge many important considerations, including the need for data-basing of marine mammal distributions in order to assist planners in avoiding high densities of sensitive animals (Carron, 2004).

Despite this, there are currently no protection measures in place for cetaceans beyond the national legislation of a few states, regardless of whether they are operating in these regions. For example, while the US and Australia currently have environmental legislation that applies globally to their citizens wherever they operate in the world, this approach is the exception. Legislation in the US is currently being reviewed, and with the changes that are occurring as part of the US Department of Defense demand for a broad set of exemptions from environmental laws (Kaiser, 2003), the implementation of such measures and, therefore, the future of cetacean protection in relation to noise pollution, remain uncertain.

Further progress on mitigation of noise pollution is indicated through the review of the *JNCC Guidelines for Minimising Acoustic Disturbance to Marine Mammals from Seismic Surveys* and *Marine Mammal Observer (MMO),* which have recently been completed in the UK, and review of the

[1] Spain (2003): "Ruidos y descargas sónicas antropogénicas y su impacto en las poblaciones de mamíferos marinos". XXVI ATCM/WP034.

Guidelines on the application of the EPBC Act to interactions between offshore seismic operations and whales (large cetaceans), which are underway in Australia.

Clearly, in order to be truly effective, efforts to answer questions about noise pollution and to deal with issues surrounding it must take place both within domestic jurisdictions and internationally, including on the high seas. In addition, such seismic guidelines should be expanded to include all forms of intense acoustic pollution, including, where appropriate, the activities associated with oil and gas extraction and production, marine construction and military activities, including use of explosives and active sonar (both mid-frequency and low-frequency sonars). They could even be developed to address, and monitor, the increasing use of acoustic devices for fisheries uses, shipping and other marine activities.

It is important not only for us to answer questions about the sound sources, but also about impacts on marine mammals themselves. Cetacean and ecosystem research must be well-resourced and ongoing, ensuring that conservation and protection remain the priority objectives.

III. LEGAL PROCEEDINGS IN THE UNITED STATES

In ASOC's Information Paper for the 2003 ATCM, we outlined the status of several legal proceedings concerning marine acoustic threats. There have been some significant developments, which we would like to bring to the attention of the Parties.

1. In Natural Resources Defense Council v. Evans, No. C-02-33805 EDL, the Northern District court in California issued a Preliminary Injunction on October 31, 2002 against the National Marine Fisheries Service (NMFS). NMFS granted a permit to the Navy to deploy its Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active Sonar (LFAS) globally, excluding the polar regions, within 22 kilometres of land and some small seasonal offshore biologically-important areas. The court's preliminary injunction required the Navy to reduce the area of application of LFAS and placed various other restrictions. The area of operation was reduced to a large part of the Pacific Ocean focused around the Mariana Islands - an estimated area of one million square miles.

   On August 26, 2003 this decision was confirmed when the US federal judge ruled that the Navy's plan to deploy a high-intensity sonar system violates numerous federal environmental laws and could endanger whales, porpoises and fish. In a 73-page opinion, Judge Elizabeth Laporte barred the Navy's planned around-the-world deployment, and ordered the Navy to reduce the system's potential harm to marine mammals and fish by negotiating limits on its use with conservation groups who had sued over its deployment.

   The sonar system SURTASS relies on extremely loud, low-frequency sound to detect submarines at great distances. According to the Navy's own studies, a sonar generates sounds up to 140 decibels even more than 300 miles away from the sonar source. Many scientists believe that blasting such intense sounds over large expanses of the ocean could harm entire populations of whales, porpoises and fish. During testing off the California coast, noise from a single LFA system was detected across the breadth of the North Pacific Ocean.

   In her ruling, Judge Laporte found that a permit issued to the Navy by the National Marine Fisheries Service (NMFS) to deploy LFA sonar violates the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA) because NMFS did not adequately assess or take steps to mitigate the risks posed by the system to marine mammals and fish. **She further found that "endangered species, including whales, listed salmon and sea turtles will be in LFA sonar's path. There is little margin for error without threatening their survival….Absent an injunction, the marine environment that supports the existence of these species will be irreparably harmed."**

"The public has a strong interesting in minimising, as much as possible, any disruption or injury to these creatures from exposure to the extremely loud and far-travelling naval sonar system," Judge Laporte wrote in her opinion. "Public concern has been heightened by incidents where exposure to another kind of Navy sonar has led to lethal strandings of whales on the beach, as in the Bahamas in 2000."

2. Following up on the court case, NRDC negotiated with the Navy to obtain a settlement in line with the court's decision. **On October 13, 2003, in an accord with conservation and animal welfare groups, the Navy agreed to scale back deployment of the LFA sonar system.** Under the terms of the agreement, the Navy would limit use of the new sonar system to specific areas along the eastern seaboard of Asia (around North Korea and China), including portions of the Sea of Japan, the East and South China Seas, and the Philippine Sea.[2] The agreement does not allow LFA sonar in the waters off the Hawaiian Islands, where the Navy had previously been permitted to use the system in 2003. In addition to geographical limits, the Navy agreed to certain seasonal exclusions, which conservationists believe will help protect critical whale migrations, and to coastal exclusions ranging from 30 to 60 nautical miles. None of the limits apply during war or heightened threat conditions.[3]

IV. NATO AND THE EUROPEAN PARLIAMENT

Dr. Marsha Green[4] and Sigi Lueber[5] organised a meeting with NATO at their Brussels headquarters on October 13, 2003 to present petitions and discuss the mitigation and regulation of high-intensity active sonars. In addition to Dr. Green and Ms. Lueber, the delegation included Dr. Caroline Lucas and Eija Riitta Anneli Korhola, both members of the European Parliament; Dr. Linda Weilgart, a marine mammal scientist from Dalhousie University; Kjell Sevon, a lawyer from Parliament; Ernst Guelcher, an advisor to Parliament and Ed Lueber from ASMS. The delegation met with Dr. Jamie Shea, Deputy Secretary General for External Relations, and Dr. Michael Carron, Senior Principal Scientist Anti-Submarine Warfare, in charge of Marine Mammal Risk Mitigation for NATO.

Sigi Lueber presented one petition on behalf of The European Coalition for Silent Oceans, which ASMS formed in 2002. This petition contained almost 100,000 signatures from European citizens calling for a moratorium on the deployment of Low Frequency Active Sonar (LFAS) until a transparent Global Environmental Impact Statement can be prepared and evaluated. Dr. Marsha Green presented a second petition signed by 68 environmental and conservation organisations in the US, Canada and Europe representing a total membership of 8.3 million people. This petition requests the Secretary General of NATO to urge member states to rapidly mitigate their use of high intensity active sonar, requests the North Atlantic Council to adopt a moratorium on the deployment of new low-frequency systems by NATO and its member states until a global assessment of their cumulative environmental impacts can be prepared and evaluated, requests the North Atlantic Council through its Policy Coordination Group to consider limits on the transfer of quiet diesel-electric and nuclear submarines to states outside the NATO Alliance (navies using high-intensity sonar argue that newer, quieter submarines are the reason why such active sonars are now required), and requests 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

[2] Note that even allowing that deployment has been widely criticised by environmental organizations in that region, because of the impacts on whales and other wildlife. See David Allen and Chiyomi Sumida, "Environmentalists upset over sonar plans", Stars and Stripes Pacific edition, Saturday, October 18, 2003, quoting members of the Okinawa Zamami Whale Watching Association.

[3] The agreement was negotiated as the Pentagon was successfully lobbying Congress for exemptions to key provisions of the Marine Mammal Protection and Endangered Species Acts, which could reduce safeguards that prevent harm to the marine environment from intense noise but it is too soon to know how the exemption will be used in practice.

[4] Ocean Mammal Institute

[5] ASMS: Swiss Marine Mammal Protection

regulating noise levels in the world's oceans.

The same month an article appeared in *Nature* on October 9, 2003, setting the stage for the delegation's NATO visit. This article, "Gas-bubble Lesions in Stranded Cetaceans", discusses physiological evidence of tissue damage in stranded cetaceans from the formation of gas bubbles, such as those that develop in decompression sickness. The eighteen European scientists who co-authored the paper suggest that the presence of these gas bubbles in whales that stranded during a naval exercise using sonar in the Canary Islands (2002) indicates that acoustic factors may be the cause of the gas bubbles. The scientists collectively are calling for environmental regulation and limitations on the adverse impact of sonar on cetaceans.

Dr Shea opened the meeting by saying how significant it was, stating that he would listen to NGO and MEP concerns and then asked Dr. Carron to present the research NATO has been doing on sonar and whales, collaborating with Dr. Peter Tyack and others. The delegation asked for Dr. Carron's reaction to the recent article in Nature regarding bubble lesions in stranded whales and dolphins, and he replied that it is a good and important article.

MEP Korhola then stressed that she and other EU MEPs are interested in a moratorium on the use of LFA sonar. Dr. Shea cautioned that NATO's power in this regard was limited and that each individual country had jurisdiction over which sonars they would use and how. He said that to address this issue requires a political decision by the countries involved. Dr. Carron noted that France in particular uses powerful sonars that have not been open to scrutiny by the public.

The delegation asked to what degree NATO is using mid-frequency tactical sonar and Dr. Carron said that NATO only has a few ships, the *Alliance* among them. Later, however, it became apparent that ships could be under NATO command, even if the ship didn't belong to NATO. MEP Dr. Lucas stated that even if high-intensity sonar use was minimal among NATO ships, NATO had a leadership role to play as an umbrella organisation for NATO countries using harmful sonars. Sigrid Lueber asked whether the *Alliance* had been doing active acoustic tests in the Ligurian whale sanctuary and Dr. Carron denied this. Later, however, he mentioned that they had exposed at least one sperm whale to a 2-3 kHz sonar and the whale didn't stop feeding, which was anything but reassuring to many of the delegation.

Dr. Shea ended the meeting by stating that he would pass the petitions on to the Secretary General of NATO, Lord Robertson, who will respond and will, in turn, pass them on to the NATO commanders. The new Secretary General, taking over in December, also will be briefed.

V. RECOMMENDATIONS

Regarding the ASOC recommendations made at ATCM XXVI, obviously there is some progress on some of them, and in some cases where progress is being made, there is not much information publicly available yet:

1. ASOC's recommended last year that the new SCAR Expert Group commence a thorough investigation of the potential impacts of acoustic activities, to be completed for presentation at ATCM XXVII in South Africa. We urged that this intersessional investigation should involve those with relevant global expertise in marine mammal biology as well as in marine acoustic impacts, and should:

- *Include a thorough and detailed review and analysis of marine species, including predator/prey relationships and ecosystems in the Antarctic Treaty region that may be at risk from noise impacts;*

- *Set out the true extent of actual and potential impacts on those species and their ecosystems from various types of noise in the Antarctic, or coming from waters outside the Southern Ocean into the Antarctic, including the deployment of far-reaching low-frequency active sonars in oceans to the north of the Antarctic Convergence;*

- *Present the Antarctic Treaty System with recommendations about how to coherently make progress in understanding these issues, including what benign research programs are needed to shed light on the many unknowns and uncertainties, and convene a special workshop focused on benign research techniques;*

- *Provide full details on the extent of harmful impacts studied to date, and recommend measures that could be taken to more effectively protect marine life from such impacts in this region.*

As the results from the May workshop in the UK are not yet available, it would be premature to comment on whether these detailed suggestions have been taken on board by the SCAR Working Group.

> *2. ASOC suggested last year that the expert Working Group should recommend specific research programs, including ways to examine the cumulative and synergistic impacts of introduced noise over time.*

There is no indication that the Working Group has taken this up.

> *3. Last year ASOC expressed the view 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.*

There is no indication yet that either the SCAR Working Group or CEP is addressing this policy question.

> *4. Regarding military sonars, and in particular Low-Frequency Active Sonar (LFAS), ASOC recommended last year that all Antarctic Treaty Parties support a cessation for the indefinite future of any further deployment of LFAS that could harm species in the Southern Ocean, and those migrating to and from the Antarctic. On a global basis, ASOC urged all governments to consider appropriate steps to protect the marine environment from deployment of LFAS.*

There is no evidence so far that the ATCPs are taking any steps to weigh in on the globally important questions associated with LFAS either collectively or individually. ASOC notes that several ATCPs have navies that are involved in the deployments off the Chinese coast, or interested in being involved in, deployment of LFAS, and suggests that those countries present information to the ATCM about their involvement with or plans for being involved with LFAS directly or indirectly.[6]

[6] See http://www.tno.nl/instit/fel/div4/feldiv44.html#sonar) regarding Dutch involvement. British Aerospace (formerly Baesema) has advertised on the web that flextensional transducers are currently in full production for LFAS. These are (or were) state-of-the-art underwater loud speakers. The EDO corporation and L-3 Communications are both building LFAS transducers and advertising on the web. See http://www.naval-technology.com/contractors/sonar/index. As noted above, it is well-known that the French maintain an active program, and it is likely that the UK does as well.

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