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Reducing Noise Pollution from Commercial Shipping in the Channel Islands National Marine Sanctuary: A Case Study in Marine Protected Area Management of Underwater Noise

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1. INTRODUCTION

International concern aboutthe impact of noise pollution in our world's oceans is growing due to the mounting scientific evidence that anthropogenic noise can harm and even kill marine species, including many endangered marine mammals. This evidence calls for a decision on what could and should be done to mitigate the effects of noise pollution.

One important step is to safeguard Marine Protected Areas from anthropogenic noise because these areas are ecologically rich and are often critical habitat for marine mammals and fish. Marine Protected Areas (MPAs) are designated portions of the ocean that are established as a policy tool for many reasons. There are many types of MPAs found all over the world and the potential to use them as a policy tool to regulate underwater noise is significant.[2]

In the United States, the National Marine Sanctuaries Act of 1972 (NMSA) authorizes the designation of National Marine Sanctuaries based on conservational, recreational, ecological, historical, scientific, educational, cultural, archeological, or esthetic qualities; communities of living marine resources it harbors; or its resource or human-use value.[3] While National Marine Sanctuaries are multiple-use areas, the NMSA emphasizes that one of the express purposes of a sanctuary is to "maintain the natural biological

[1] UCLA School of Public Affairs, Master of Public Policy 2005.
[2] For a more comprehensive examination of the potential effectiveness of using MPAs to regulate underwater noise see also Elena McCarthy, *International Regulation of Underwater Sound: Establishing Rules and Standards to Address Ocean Noise Pollution* (Boston: Kluwer Academic Press, 2004).
[3] NMSA §303 (a) (2).

Notes

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NMSA §303 (a) (2).

NMSA §301 (b) (3).

For more information, see original report: Haren, Angela. “Creating a Quiet Sanctuary: Reducing Noise Pollution from the Channel Islands National Marine Sanctuary.” (Applied Policy Project 2005). This report was prepared in partial fulfillment of the requirements for the Master in Public Policy degree in the Department of Public Policy at the University of California, Los Angeles. It was prepared at the direction of the Department and of the Channel Islands National Marine Sanctuary as a policy client. The views expressed are those of the author and not necessarily those of the Department, the UCLA School of Public Affairs, UCLA as a whole, or the client.

Designation of the Channel Islands National Marine Sanctuary 65200 Federal Register Vol. 45, No. 193, hereinafter Designation Document.

Channel Islands National Marine Sanctuary Information, http://channelislands.noaa.gov/drop_down/ mission.html (last visited February 2, 2005).

For a complete description of the regulations, including exemptions, see 15 CFR 922.71.

NMSA § 304 (e).

International Whaling Committee Report of the Scientific Committee August 20, 2004 12.2.5.1 available at http://www.iwcoffice.org/commission/sci_com/screport.htm, accessed 12.20.04.

ibid at 12.2.5.2.

World Conservation Union, Undersea Noise Pollution RESWCC3.068, Congress Reference: CGR3.RES053.Rev1 available at: http://www.iucn.org/congress/members/adopted_res_and_rec/RES/RESWCC3068%20-%20RES053.pdf, accessed 3.1.05. hereinafter IUCN Resolution.

ibid.

See Donald Evans and Gordon England, Joint Interim Report: Bahamas Marine Mammal Stranding Event of 15–16 March 2000, National Oceanic and Atmospheric Administration and the United States Navy 2000. Recent research indicates noise pollution can also disturb fish, for more information see Arthur Popper et al. Anthropogenic Sound: Effects on the Behavior and Physiology of Fishes, Marine Technology Society Journal 37(4); Winter 2003–2004.

John Hildebrand, Impacts of Anthropogenic Sound in J. E. Reynolds et al. (eds), Marine Mammal Research: Conservation beyond Crisis. The Johns Hopkins University Press, Baltimore, Maryland. pp. 101--124 (2005).

Arthur N. Popper. Effects of Anthropogenic Sounds on Fishes. Fisheries 28(10): 24–31 (2003).

Shiva Polefka, Anthropogenic Noise and the Channel Islands National Marine Sanctuary, Environmental Defense Center 2004; and Conservation and Development Problem Solving Team, University of Maryland College Park, Anthropogenic Noise in the Marine Environment Potential Impacts on the Marine Resources of Stellwagen Bank and Channel Islands National Marine Sanctuaries, prepared for NOAA and the Marine Conservation Biology Institute, December 2000.

For a more detailed scientific description the threat of noise pollution from commercial shipping in CINMS see Polefka, 2004.

Ibid.

Robert Gisiner et al. Proceedings of a Workshop on the Effects of Anthropogenic Noise in the Marine Environment. Office of Naval Research, Arlington, Virginia February 10–12, 1998.

National Research Council. Ocean Noise and Marine Mammals. Washington, DC: National Academy Press (2003).

Lori Mazzuca, “Potential Effects of Low Frequency Sound (LFS) from Commercial Vessels on Large Whales,” (Master of Marine Affairs thesis, University of Washington, 2001).

Michael Jasny and Joel Reynolds, Sounding the Depths Supertankers, Sonar and the Rise of Undersea Noise. New York: NRDC 1999.

Donald Croll et al. Bioacoustics: Only Male Fin Whales Sing Loud Songs. Nature 417: 809 (2002).

Christopher Clark. Across the Void, Voices From the Deep, presentation at the American Association for the Advancement of Science, Washington DC, 2.20.05, abstract available at http://php.aaas.org/meetings/abstracts.php?xabs=690. See also Bentley, Molly "Unweaving the Song of Whales," BBC News February 28, 2005 available at: http://news.bbc.co.uk/go/pr/fr/-/1/hi/sci/tech/4297531.stm (last visited March 1, 2005).

National Research Council, 2003 p. 77, see also Mazzuca, 2001, p. 21.

John Westwood, et al. Global Ocean Markets. Canterbury, UK: Douglas-Westwood Associates (2002).

[28] U.S. Maritime Top 25.

See U.S. Department of Transportation Maritime Administration publications on U.S. Waterborne Trade Statistics available at: http://www.marad.dot.gov/Marad_Statistics/index.html accessed 2.28.05.

US Department of Transportation Maritime Administration, Vessel Calls at US Ports 2003, p. 4 available at: http://www.marad.dot.gov/MARAD_statistics/ accessed 2.25.05.

At its closest point to the Sanctuary, the vessel lanes are only 2 km off the coast of Anacapa Island.

Ibid. at table H-10 p. 3.

Ibid at tables S-6 and S-7, pp. 14, 16, respectively.

Ibid at table S-6 p. 12

U.S. Department of Transportation Maritime Administration Total Top 25 US Ports CYs 1998–2003 available at: http://www.marad.dot.gov/MARAD_statistics/ accessed 2.21.05, hereinafter U.S. Maritime Admin Top 25

Polefka, 2004. Although a database of all vessels coming in and out of the LA/Long Beach port is maintained, currently no systematic monitoring of large vessel traffic through the Santa Barbara Channel exists. Estimates of vessel traffic through the Channel are derived from port statistics.

Ronald White. Bracing for a Tighter Fit. Los Angeles Times, November 29, 2004.

Due to lack of data, specific protective measures could not be analyzed and therefore specific recommendations about them were not made. However, one key recommendation was that focused analysis of scientific data collected from an acoustic monitoring program should be undertaken immediately in order to determine the appropriate protective measures. Further, the research project uncovered a potential for a partnership with researchers at the Scripps Institute of Oceanography that offered the Sanctuary a way to start monitoring in summer of 2005 at minimal cost.

Marine Mammal Protection Act 16 U.S.C. §1361 to 1421; Endangered Species Act 16 U.S.C. §§1531 to 1544.

John Richardson et al. Marine Mammals and Noise. San Diego: Academic Press (1995).

The definition of take under the ESA 16 USCA §1532 (19). includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.1 Under the MMPA §1362 sec. 3 (13) “take” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.

MMPA 16 U.S.C. §1362 (18)(A)(i).

MMPA 16 U.S.C. §1362 (18)(A)(ii).

Federal Register Vol. 70, No. 7.

Ibid.

See Mapping Anthropogenic Noise in the Sea—An Aid to Policy Development available at: http://www.whoi.edu/science/MPC/dept/research/ocean_noise/ accessed 1.26.05.

In the time after the original research was done for this project, the NMSP began to lead a collaborative effort to facilitate information sharing between sanctuaries.

15 CFR 922.71 (5).

Designation Document, Article 4 (d).

Not all MPAs have this obstacle to overcome in order to use their own authority to regulate commercial ships.

Under 1982 United Nations Convention on the Law of the Sea Articles 2 and 3, “Territorial Sea” of a State is defined as 12 nautical miles beyond its land.

Lindy Johnson, Coastal State Regulation of International Shipping. Dobbs Ferry, NY: Oceana Publications, Inc. (2004).

At high speeds commercial shipping vessels emit more noise due to cavitation therefore slowing them down would conceivably quiet them. For a further description of cavitation see section 3 under.

Cordell Bank, Flower Garden Banks, Monterey Bay, Stellwagen Bank, Olympic Coast, and Florida Keys National Marine Sanctuaries all have “enter and injure” regulations. See 15 CFR 922 under prohibited activities for respective sanctuaries.

The concept of “enter and injure” could possibly be used in other MPAs that are not expressly denied the authority to regulate commercial shipping.

Convention on the International Maritime Organization hereinafter IMO; see also http://www.imo.org accessed 3/9/05.

IMO resolution A.720 Annex II paragraph 1.2.

Ibid at paragraph 1.5.

Ibid at paragraph 4.4.6.

Ibid at paragraph 2.2.

Ibid at paragraph 7.4.2. (b) For more discussion on PSSA designation to protect against noise pollution, see also Elena McCarthy. International Regulation of Underwater Sound: Establishing Rules and Standards to Address Ocean Noise Pollution. Boston: Kluwer Academic Press (2004).

See “Response to Ambassador Burns’ Request” (Feb. 2005) (setting forth coordinated U.S. government position on international regulation of military active sonar, for use in discussions within NATO) (on file with author); see also Kaufman, Marc. U.S. Set to Oppose Efforts to Restrict Use of Sonar. Washington Post February 28, 2005, Page A05.

IUCN Resolution.

See “Whales Win Right of Way in Atlantic Shipping Lanes.” National Geographic Today, March 3, 2003 available at http://news.nationalgeographic.com/news/2003/03/0305_030305_tvrightwhales.html accessed 4.16.2005.

See “Ships Rerouted to Protect Marine Sanctuaries” CNN, June 5, 2000 available at http://archives.cnn.com/2000/NATURE/06/05/shipsafe.enn/ accessed 4.16.2005.

Donald Ross, Mechanics of Underwater Noise. New York: Pergamon (1976).

The symposium was a forum for science, management, and technology on the issue of shipping noise and marine mammals. To learn more and to retrieve presentations from the symposium, see: http://www.shippingnoiseandmarinemammals.com/, (last visited February 4, 2005).

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