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## Opinion and Commentary

Underwater sound is not something most people think about, but they would if they lived in the ocean. Since the dawn of industrialization, levels of background sound in the ocean, called ambient noise, have steadily increased. By far the most significant increase is thought to be caused by man's growing use of the ocean for shipping. The number of commercial vessels plying the world's oceans doubled between 1965 and 2003. Shipping industry analysts forecast that the amount of cargo shipped will again double or triple by 2025.

There is still no definitive evidence of exactly how and when increases in background sound may harm marine species. However, there is general scientific consensus that at some point there are negative consequences for marine animals that use sound as their primary sense. One of the possible affects is that some manmade noise interferes with and masks whale songs and other marine animal communication signals used in feeding, mating and navigating.

The low frequencies associated with ship sounds are very similar to sounds made by whales, some seals and sea lions, and fish that use low-frequency sound to communicate. Exacerbating the potential problem is the fact that loud, low-frequency sounds from large ships can travel hundreds of miles and become integrated into the general din of ambient noise.

The National Oceanic and Atmospheric Administration is leading an investigation into how best to reduce chronic sound sources. This past week, NOAA's Ocean Acoustics Program hosted a dialogue between scientists and vessel designers, builders, ship owners and operators on vessel-quieting techniques.

U.S. military and NOAA Fisheries research vessels have begun to use an array of quieting devices to try to cut down on noise. These include modifications to propellers to allow them to more efficiently cut through the water, mounting engines on cushions to reduce noise, and painting hulls with specially designed coatings for dampening sound. In some cases, quieting techniques may have the added bonus of allowing vessels to operate more efficiently, using less fuel and saving on energy costs.

Given the success of these efforts, there is an interest in applying some of these technologies on large commercial ships. The business community has shown interest in cooperating with NOAA scientists to investigate changes that may

decrease noise levels from vessels, especially if this effort boosts the efficiency of ships. Leaders of industry also recognize the positive message that proactive measures could send to a general public more and more concerned with protecting the environment.

“We’re interested in any problem in which future regulations may impact our normal operations,” said Kathy Metcalf, the director for Maritime Affairs for the Chamber of Shipping of America, an organization that represents owners, operators and charters of vessels flagged under the U.S. and other nations. “We want to be part of the solution.”

We believe that successful cooperation between the public and private sector can be a model of how to be better stewards of the ocean environment and the marine resources that are our common heritage.

**William T. Hogarth**

*Dr. Hogarth is the director of NOAA Fisheries Service*

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