

National Marine Sanctuaries
Joint Management Plan Review
Preliminary Comments from Michael Stocker
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My name is Michael Stocker and I am the Science Advisor for Seaflow, and educational non profit focused on the issues of human generated ocean noise pollution. I am making this short comment tonight but we will be submitting a more comprehensive document by January 5 that will outline the problem in more detail and provide some suggested text for the sanctuaries management plan.

What we will be calling for is an Ocean Noise Criteria to be established in the sanctuaries.

The public and scientific concerns about human generated ocean noise pollution – along with the pollution sources and levels, have been growing exponentially in the past few years. We know that there is a problem because we are increasingly seeing consequences of the impacts of various noises on marine mammals and fisheries. Unfortunately the study of marine bio-acoustics, while not exactly in its infancy, is nonetheless blunt and undeveloped. This is largely due to the research priorities, perceptual assumptions, and the vast and variable scope of acoustical adaptations represented in the marine biota.

It is also lacking in much conclusive evidence because the scope of sound in the sea – capable of transecting thousands of miles and impacting countless habitats – can be far too expansive to notice on a regional scale. Shipping lanes that run right over the sanctuary do not seem to compromise their productivity. But it has been only recently that we have known that the great baleen whales use their low frequency calls to navigate over long distances. Even more recently systematic studies have indicated that these calls may be masked by the noise from ships and marine industry.

Nonetheless, we do not have conclusive evidence that long distance masking is a problem. We can only surmise why the frequencies of the calls or the call lengths have been changing in ways that would suggest an adaptation to a noisier ocean.

In this context, any Ocean Noise Criteria will need to be flexible to account for the most current knowledge on the issue. It may be that while animals have adapted to, or are not molested by some of the anthropogenic noises we have subjected them to, we know that new noises are being introduced into the ocean every day.

These new noises can be much louder than any naturally produced noise – such as the noises from deep water seismic airgun arrays and long distance communication sonar, such as the Low Frequency Active Sonar currently being proposed for global ocean saturation by the US Navy.

These new noises can also be much different than any noises produced by marine animals, and thus pose an adaptation problem for them. These would include some of the mid and high frequency communication sonars used in directing various Autonomous Underwater Vessels and Remotely Operated Vessels, or the mid-frequency active sonars that have been responsible for many of the known whale and dolphin strandings that we have seen in the last decade.

It may be that these noises, while not necessarily being “dangerously loud” according to exposure level thresholds established for various marine animals, they may be significantly more damaging to their perception or biological adaptations. This condition would be suggested by the reaction that humans have to fingernails scratching on a blackboard.

Could you imagine being subjected to the noise of a blackboard being scraped by a hand trowel? Or perhaps this same noise amplified to just below the Temporary Threshold Shift level for human exposure?

We do not have all of the answers to these questions right now, but work is being done to address this lack of data. In our written statement we will be suggesting a flexible Ocean Noise Criteria based on information that we do know, have the flexibility to incorporate what we find out, and a set of precautionary guidelines that will allow for contingencies if we find that some introduced noise source is compromising the sanctuary habitat.

In the mean while we need to work with other stakeholders to assure that we are not unnecessarily burdening any class of people from responsibly and sustainably enjoying and using the Marine Sanctuaries.