

OCEAN CONSERVATION RESEARCH



Science and technology serving the sea

The Honorable Wilbur Ross
Secretary
U.S. Department of Commerce
1401 Constitution Ave NW
Washington, DC 20230

National Oceanic and Atmospheric Administration
Silver Spring Metro Campus Building 4 (SSMC4), Eleventh Floor
1305 East West Highway
Silver Spring 20910

Re: NOAA-NOS-2017-0066: Review of Monuments and NMS Expansions.

Dear Mr. Ross,

We find it ironic that the current public review period for the reduction of the boundaries of our National Marine Sanctuaries has been proposed through Executive Order 13795¹ under the rubric of a purported shortcoming in the “analysis of the adequacy of any required federal, state, and tribal consultations conducted before the designations or expansions.” This is particularly the case where often years were put into consulting, crafting, and tailoring the sanctuary boundaries with extensive cost-benefits analysis done to assure that American citizens were provided Marine Sanctuaries and Monuments that benefited the broadest public and the most commercial enterprises within the reach of the sanctuaries.

Meanwhile we have been given only 30 days to review and comment on the boundaries of thirteen sanctuaries in seven global regions – ostensibly to protect them from private exploitation by non-sustainable extractive industries. In light of this inadequacy in public, “federal, state, tribal, and public benefit organization consultations,” we respectfully request an additional 60 days to review the particulars of each of the sanctuaries to make sure that any decisions arrived at to redraw boundaries are done with full consideration of the impacts to all stakeholders, and the sustainability of the living habitats held within these boundaries.

Ocean Conservation Research is a scientific research and policy development organization focused on understanding the impacts of, and finding solutions to the growing problem of anthropogenic noise on marine habitats and the animals that reside in them. Due to the turbidity and opacity of seawater (and the darkness of the ocean brought on by nightfall), pretty much all

¹ Executive Order 13795, 82 Fed. Reg. 28827 (June 26, 2017).

animal life in the ocean have evolved and adapted to their habitat through the use of sound. Creatures from the smallest zooplankton up to the largest whale depend on sound to find food, avoid predators, establish and cultivate breeding relationships, and navigate through the ocean. The sheer variety of zoological adaptations to sound is stunning – as fish, marine mammals, marine invertebrates, fishes, sharks, and rays all have figured out some way to exploit the natural sounds of their environment.²

As human populations increase, we are driving our resource needs deeper into the ocean. This expansion is bringing with it an increasing din of mechanical and industrial noise. The ocean is ten times louder now than it was just fifty years ago due to shipping noise alone.³ Adding to this are the exponential growth military, industrial, and recreational use of sonars, underwater digital communications equipment, navigation aids, and the ubiquitous noise of seismic airgun surveys. All of these noises are having a deleterious effect on marine life by masking important biological cues,⁴ disrupting commercial fishing,⁵ compromising growth⁶ and biological recruitment,⁷ disrupting communication,⁸ interfering with marine mammal migration⁹ and feeding,¹⁰ and generally compromising marine habitat to the detriment of most marine life.¹¹

² Stocker, M. (2002) Fish, Mollusks and other Sea Animals' use of Sound, and the Impact of Anthropogenic Noise in the Marine Acoustic Environment." *The Journal of the Acoustical Society of America* 112(5) · November 2002

³ Ross, D. (1976). "Mechanics of Underwater Noise" Pergamon Press, New York. p.280-285

⁴Christine Erbe, Colleen Reichmuth, Kane Cunningham, Klaus Lucke, Robert Dooling (2015) "Communication masking in marine mammals: A review and research strategies" *Marine Pollution Bulletin* (2015), <http://dx.doi.org/10.1016/j.marpolbul.2015.12.007>

⁵ Edmonds, N.J., et al.(2016). A review of crustacean sensitivity to high amplitude underwater noise: Data needs for effective risk assessment in relation to UK commercial species, *Marine Pollution Bulletin* (2016), <http://dx.doi.org/10.1016/j.marpolbul.2016.05.006>

⁶ Natacha Aguilar de Soto, Natali Delorme, John Atkins, Sunkita Howard, James Williams & Mark Johnson (2013) "Anthropogenic noise causes body malformations and delays development in marine larvae" *Nature Publ. Scientific Reports* | 3 : 2831 | DOI: 10.1038/srep02831

⁷ Martin Solan, Chris Hauton, Jasmin A. Godbold1, Christina L. Wood, Timothy G. Leighton & Paul White. (2015) "Anthropogenic sources of underwater sound can modify how sediment-dwelling invertebrates mediate ecosystem properties" *Nature Publ. Scientific Reports* | 6:20540 | DOI: 10.1038/srep20540

⁸ Lawrence A. Rabin, Brenda McCowan, Stacie L. Hooper, and Donald H. Owings (2003) "Anthropogenic Noise and its Effect on Animal Communication: An Interface Between Comparative Psychology and Conservation Biology." *International Journal of Comparative Psychology*, 2003, 16, 172-192.

⁹ Castellote, M., Clark, C. W., & Lammers, M. O. (2012). Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise. *Biological Conservation*, 147(1), 115-122. doi: <http://dx.doi.org/10.1016/j.biocon.2011.12.021>

¹⁰ Frances C. Robertson, William R. Koski, Tannis A. Thomas, W. John Richardson, Bernd Würsig, Andrew W. Trites (2013) "Seismic operations have variable effects on dive-cycle behavior of bowhead whales in the Beaufort Sea" *Endangered Species Res.* Vol. 21: 143–160,

¹¹ UNEP Subsidiary Body on Scientific, Technical and Technological Advice (2012) "Scientific synthesis on the impacts of underwater noise on marine and coastal biodiversity and habitats.

These compromises and disruptions are occurring globally. Our concerns are not just sentimental; the impacts of anthropogenic noise are eroding the food chain from the bottom up,^{12,13} which ultimately threatens our very own food supply.

Fortunately one of the ways we can stem this damage is by way of establishing Marine Sanctuaries¹⁴ – areas where resource management and commercial exploitation is determined by the need to protect marine environments for the sustainable use and preservation of biologically diverse, productive, beautiful, and historically important marine areas for ourselves and for future generations.

Ocean Conservation Research is among the hundreds of organizations, and tens of thousands of citizens opposed to the review – and ultimately the proposed reduction in the boundaries of any of our National Marine Sanctuaries and Monuments. Despite the administration’s reasoning under EO 13795 that the establishment or expansion of our National Sanctuaries and Monuments in the past ten years had been executed “without adequate public outreach and coordination with relevant stakeholders,” it is clear from the preponderance of the comments in support of maintaining the existing monument boundaries, that American citizens have spoken up. They have adapted to the sanctuaries in their presence – as sources of business, community, and personal opportunities, which include:

- Tourism and visitor commerce
- Recreational and commercial fishing
- Recreational and commercial diving
- Coastal real estate development
- Scientific research
- Maritime historical research
- Invigoration of physical and spiritual health
- Educational opportunities
- ...and simply through the knowledge that we will be passing all of these assets on to the future generations.

To ignore – and even dismantle all of these benefits derived from our Marine Sanctuaries and Monuments simply to turn the areas over to one industry – the faltering fossil fuel industry, does a huge disservice to the intent of the sanctuary or monument designation. The claim that the designation and expansion of these areas somehow represents “Government over-reach” flies in

¹² Stephen D. Simpson, Andrew N. Radford, Sophie L. Nedelec, Maud C.O. Ferrari, Douglas P. Chivers, Mark I. McCormick & Mark G. Meekan. (2015) “Anthropogenic noise increases fish mortality by predation.” *Nature Communications* | 7:10544 | DOI: 10.1038/ncomms10544

¹³ Robert D. McCauley, Ryan D. Day, Kerrie M. Swadling, Quinn P. Fitzgibbon, Reg A. Watson & Jayson M. Semmens (2017) “Widely used marine seismic survey air gun operations negatively impact zooplankton.” *Nature Ecology & Evolution* 1, Article number: 0195 (2017)

¹⁴ Callum Roberts *Unnatural History of the Sea* Island Press 2007

the face of the evidence. Protecting these areas are specifically in the remit of our Federal Government.

But in light of the Executive Order to perform “an analysis of the acreage affected and an analysis of the budgetary impacts of the costs of managing each National Marine Sanctuary or Marine National Monument designation or expansion,” and evaluate the “opportunity costs associated with potential energy and mineral exploration and production from the Outer Continental Shelf...” needs to be done in consideration of the short-term economic benefits of extracting limited resources (fossil fuel and minerals) versus the continuing economic benefits and quality of life provided by all of the coastal activities listed above - *in perpetuity*. The “budgetary impacts” and “opportunity costs” need to be weighted with the economic, social, and environmental costs and impacts that turning the coasts and outer continental shelf into industrial zones will have on these more economically sound and environmentally sustainable activities.

The “opportunity costs” also need to be weighted with the catastrophic risks that loom over any offshore energy extraction – in terms of the probability of fisheries and habitat compromise from offshore exploration and production. This includes the habitat and environmental costs of exploratory and ongoing production-associated seismic surveys; noise and chemical pollution from installation and operations of offshore extraction and production facilities, and the impacts of the continuous noise generated by thruster-stabilized Floating Production, Storage, and Offloading (FPSO) platforms – along with the noise generated by the lighters, service vessels, and tankers that will constantly be hovering around the FPSOs.

It is little known, even in the regulatory agencies, that offshore production is much more than just having an oil-rig out in the water quietly pumping away at a well-head. These new production facilities are full-blown “subsea” factories with a variety of equipment operating under extremely high pressure. This equipment includes multi-phase pumps, separators, reinjection pumps, and process fluids manifolds. It also includes semi-autonomous service vessels operating within multi-nodal communication networks – which transmit communication signals (noise) right in the bio-sonar frequency range of odontocetes¹⁵ and pinnipeds.¹⁶ The “opportunity costs” need to be weighted with the biological costs – and associated economic costs of colonizing vast areas of odontocete and pinniped habitat with screaming acoustical communication signals from these communication networks, and cluttering fisheries and baleen whale habitat with the noise of subsea production fields packed with roaring production equipment.

¹⁵ R.A. Kastelein, W.C. Verboom, M. Muijsers, N.V. Jennings c, S. van der Heul. (2005) “The influence of acoustic emissions for underwater data transmission on the behavior of harbour porpoises (*Phocoena phocoena*) in a floating pen” *Marine Environmental Research* 59 : 287–307

¹⁶ Ronald A. Kastelein , Sander van der Heul, Willem C. Verboom, Rob J.V. Triesscheijn, Nancy V. Jennings. (2006) The influence of underwater data transmission sounds on the displacement behavior of captive harbour seals (*Phoca vitulina*) *Marine Environmental Research* 61:19–39

And these “opportunity costs” also need to be weighted with the probability of oil spills of any size, and the costs to the taxpayers for clean-up and the impacts on the other more-sustainable coastal activities. As even while the fossil fuel industry insists that their operations are “safe,” the EO 13795 aims to eliminate the well-head control procedures and dilute other safety procedures that were instituted after (and as a consequence of) the Deepwater Horizon blow-out - the most catastrophic oil spill in American History, where these procedures were absent or ignored.

And these “opportunity costs” need to be weighted with the costs to the American taxpayers to cover decommissioning the remaining equipment when the wells go dry. It has been a common practice of the fossil fuel companies to slowly “sunset” their operations through ever smaller operating companies. Once there is no longer any oil, the smallest company on the down-line will abandon the equipment, “go bankrupt,” and leave the clean-up expense to American taxpayers.¹⁷

And finally the “opportunity costs” have to be weighted with the unsurmountable expense that faces us as our continued use of fossil fuel disrupts our planetary climate, wreaks havoc on our living systems, and threatens ALL coastal cities and populations with sea-level rise. If all of these “opportunity costs” are properly weighted, the calculus should be very simple: We derive far more benefits – economic, cultural, social, and spiritual than would warrant reducing the area of our National Commons.

In closing, it is clear that preponderance of American citizens, businesses, millions of American tourists, and I suspect millions of foreign tourists, all derive financial, educational, scientific, health, and spiritual solace from these Marine Sanctuaries and Monuments. Dismantling them for the benefit of the fossil fuel industry is the pinnacle of “Government overreach.”

Sincerely,

A handwritten signature in black ink that reads "Michael Stocker". The signature is written in a cursive, flowing style.

Michael Stocker
Director

¹⁷ Chris Tomlinson “Oil companies could leave taxpayers with abandoned wells” Houston Chronicle, July 1, 2016