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I am writing to provide comments on the Proposed Rule regarding the U.S. Navy's Atlantic Fleet Active Sonar Training (AFAST). As noted in the Federal Register (73(199):60754-60833) NMFS is proposing regulations to govern the take of marine mammals incidental to the U.S. Navy's Atlantic Fleet Active Sonar Training (AFAST) activities conducted off the Atlantic Coast of the U.S. and in the Gulf of Mexico. I have several concerns regarding the proposed rule.

NMFS concludes that a variety of mitigations measures will allow "the Navy to avoid injuring any marine mammals" as part of MFA/HFA sonar or IEER use (page 60789). This conclusion is unwarranted for several reasons. Although the proposed rule outlines observation protocols to detect marine mammals and allow for powering down sonar when marine mammals are detected within a certain distance (1,000 yards, 914 m), visual observations to detect cetaceans will be ineffective under anything other than calm sea conditions. This limitation of visual detection methods is acknowledged in the proposed rule, in regards to TORPEXs in critical habitat of North Atlantic right whales, where "the TORPEX will be suspended if the Beaufort Sea State exceeds 3..." (page 60783). Given the locations of exercises and the typical sea conditions along the east coast of the U.S., it is likely that a large proportion of exercises will be undertaken in sea conditions of greater than Beaufort Sea State 3, thus greatly limiting the effectiveness of visual detection of marine mammals.

Regardless of sea state, given the typical dive durations of most species of marine mammals and the speed at which vessels typically transit at while operating mid-frequency active (MFA) sonar, the probability of detecting marine mammals at a large enough distance for the power down protocols to be implemented is extremely low. Most species of marine mammals stay submerged for periods exceeding three minutes, and some (e.g., beaked whales) will stay submerged for periods exceeding one hour. A vessel traveling at 10 knots (18.5 km/h) will cover 925 meters (1011 yards) in three minutes, effectively eliminating the possibility of detecting any submerged marine mammal (on even a short dive of three minutes), until that individual is well inside the zone at which temporary or permanent threshold shift, or other injuries, may occur.

Beaked whales, which are known to be particularly susceptible to impacts of MFA-sonar (Cox et al. 2006), are extremely difficult to detect even under ideal sea conditions (Barlow and Gisiner 2006). Given the fact that long-dives may exceed one hour, and when individuals are at the surface they are extremely difficult to detect even under ideal sea conditions, it is clear that mitigation measures proposed will not limit or prevent injury of these species.

The proposed rule suggests that impacts on beaked whales are not likely to occur unless MFA sonar use takes "place in a location having a constricted channel with limited egress similar to the Bahamas" (page 60780). Given that this was not the case for the Canary Islands strandings in 2002 and 2004, it is obvious that this is not a requirement for beaked whale mortality in association with MFA sonar. Since the visual observation measures will be ineffective for

beaked whales, the likelihood of serious injury or mortality of beaked whales associated with these exercises is high.

Given the extreme uncertainty associated with beaked whale population structure, sizes, or trends in the waters off the east coast of the U.S. it is impossible to conclude that potential mortality of beaked whales associated with the AFAST rule will not seriously jeopardize populations. As noted in the most recent NMFS stock assessment reports (Waring et al. 2007), there are no population estimates for individual species of beaked whales along the east coast of the U.S. There is no information on trends for any of the populations, and there is no information available to assess population structure, which is likely to result in small genetically isolated stocks that would be more susceptible to impacts from anthropogenic activities. As noted in Waring et al. (2007), mortalities of several species of beaked whales along the east coast in recent years appear to have occurred due to ship strikes and entanglement in fishing gear.

Mortalities of beaked whales or other species will be virtually impossible to detect. Most species of cetaceans (with the exception of sperm whales and right whales) sink upon death. If animals die in shallow water, decomposition processes may eventually result in the carcass refloating, where after some time has passed it has a chance of being detected; in deep waters, however, increased hydrostatic pressure and differences in gas solubility may prevent carcasses from refloating (Allison et al. 1991). Given that beaked whales and other species most at risk from injury inhabit deep waters, if an individual is killed, the carcass is unlikely to refloat where it could be detected. Thus impacts associated with AFAST will be virtually impossible to detect or quantify.

Lastly, the proposed rule states that takes by ship strikes are unlikely. It is unclear why NMFS and the Navy would determine this given the amount of vessel traffic involved in these exercises and the number of ship strikes of many species of whales and dolphins documented off the east and gulf coast of the U.S. as well as elsewhere in the U.S. and around the world (e.g., Douglas et al. 2008; Waring et al. 2007; Waerebeek et al. 2007).

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