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Naval Facilities Engineering Command Pacific
Attention: HSTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

To whom it may concern,

I am writing to provide comments on the Hawai‘i-Southern California Training and Testing draft Environmental Impact Statement/Overseas Environmental Impact Statement (hereafter HSTT DEIS). While the HSTT DEIS covers both Hawai‘i and southern California, and a number of different stressors, my comments are focused particularly on a number of populations of species resident to Hawaiian waters and mitigation of the effects of mid-frequency active sonar (MFAS).

There are 11 species of resident odontocetes in Hawaiian waters, with individuals displaying restricted movements in comparison to pelagic populations of the same species (Baird 2016). Several of these have multiple resident populations recognized (e.g., common bottlenose dolphin, pantropical spotted dolphin, spinner dolphin, false killer whales), with movements further limited to one or several islands. As has been noted specifically for several resident populations with core areas that overlap with the Pacific Missile Range Facility (PMRF) off Kaua‘i (Baird et al. 2017a), such site fidelity indicates that individuals may be repeated exposed to MFAS over many years. Studies of movements of satellite-tagged individuals of several species exposed to MFAS at PMRF have not revealed large-scale movements away from MFAS sources (Baird et al. 2017b), increasing the likelihood that individuals may be exposed to MFAS levels high enough to lead to temporary threshold shifts (TTS). If individuals are repeatedly exposed to MFAS at levels that may cause TTS, this could lead to permanent threshold shifts (PTS). This has been shown for terrestrial mammals (Kryter et al. 1966, Lonsbury-Martin et al. 1987, Kujawa and Kiberman 2009, Lin et al. 2011, Wang and Ren 2012) and suggested that it may also occur for marine mammals (Kastak et al. 2008, National Marine Fisheries Service 2016). Such potential for PTS occurring within resident populations of odontocetes in Hawai‘i, and the potential individual- and population-level consequences, needs to be addressed in the HSTT DEIS, particularly in light of the ineffectiveness of the proposed mitigation measures (see below).

Proposed mitigation measures for MFAS primarily involve: 1) lookouts to detect marine mammals in a zone around a transmitting MFAS source; 2) some limits on surface ship hull-mounted MFAS in the west-side Hawai‘i Island planning area; and 3) a prohibition on the use of hull-mounted MFAS in the east-side Hawai‘i Island cautionary area (year-round) and the

humpback whale cautionary area (seasonally). There are a number of reasons why using lookouts to detect marine mammals is an ineffective way of mitigating harm. Most importantly, the usual sea states that the Navy typically operates in Hawai‘i, combined with the diving patterns of cetaceans and the cryptic nature of many species, make the probability of visually detecting the majority of cetaceans extremely low. In addition, many training or testing operations occur at night when lookouts are completely ineffective. Lastly, behavioral effects, which may lead to mortality at least on occasion, are likely to occur well beyond the visual horizon of lookouts. For example, Falcone et al. (2017) documented behavioral responses by Cuvier's beaked whales to hull-mounted MFAS at distances of up to approximately 100 km from the source.

Thus the primary proposed mitigation measures that have some potential to provide real environmental benefits to marine mammals are restrictions associated with the planning awareness areas and cautionary areas. The measures incorporated into both the planning awareness area for the west-side of Hawai‘i Island and the cautionary areas for Hawai‘i Island are insufficient to mitigate MFAS effects on a number of resident populations that are known or thought to be susceptible to the impacts of MFAS, in particular Cuvier's beaked whales, Blainville's beaked whales, melon-headed whales, pygmy killer whales and dwarf sperm whales. Importantly, there appear to be no restrictions on the use of helicopter-deployed MFAS. For Cuvier's beaked whales, Falcone et al. (2017) recently showed that behavioral responses were more pronounced to mid-power helicopter-deployed MFAS than high-power surface ship hull-mounted MFAS. The HSTT DEIS needs to both take into account potentially higher behavioral responses to helicopter-deployed MFAS and incorporate measures that may mitigate behavioral effects. In addition, while the planning awareness area and the cautionary areas place some restrictions on the use of surface ship hull-mounted MFAS in theory, the restrictions on the west side of Hawai‘i Island are only applicable to "anti-submarine major training exercise(s)" (p. K-25) and "all other surface ship mid-frequency active sonar by Navy units (e.g., unit level training, maintenance and system checks while in transit) is allowed". For populations that are particularly susceptible to impacts from MFAS (e.g., Cuvier's beaked whales, Blainville's beaked whales), this type of "restriction" is insufficient to provide protection. In the case of the Kohala resident population of melon-headed whales, the entire population may be at risk from a catastrophic event associated with avoidance of sonar, in addition to displacement from their limited habitat (Forney et al. 2017). This population has the most-restricted range of any species of cetacean in Hawaiian waters, and the complete lack of MFAS restrictions in the ‘Alenuihaha Channel, which overlaps with their range, puts this population at particular risk.

Sincerely,

Robin W. Baird, Ph.D.
Research Biologist

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