Cascadia Research Collective
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Phone: (360) 943-7325
FAX: (360) 943-7026
Homepage: www.cascadiaresearch.org

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Tom Clements
PMRF Public Affairs Officer
P.O. Box 128
Kekaha, HI
96752

Dear Mr. Clements,

NEPA puts a premium on scientific integrity in an agency's discussions and analysis regarding potential impacts of activities, and agencies should thus incorporate the best scientific information available in evaluating potential impacts. I am writing primarily to inform you of scientific information that should be taken into account in the Hawai'i Range Complex EIS/OEIS process. Recent research has been undertaken on a number of species of whales and dolphins around the main Hawaiian Islands, involving boat-based surveys, genetic studies, photo-identification, and deployment of time-depth recorders. Some results of these studies have been published in or are currently submitted to peer-reviewed scientific journals, are available in a number of reports to the National Marine Fisheries Service or the U.S. Navy, or have been presented to scientific conferences (see attached list, copies of most available from www.cascadiaresearch.org/robin/hawaii.htm or upon request). In addition to specific information on the biology of different species in Hawai'i, there are several important findings from this research that have broad implications for the Hawai'i Range Complex EIS/OEIS process, and these are emphasized below.

Evidence of population subdivision/structure.

Genetic results from all populations of Hawaiian odontocetes studied to date (i.e., false killer whales, bottlenose dolphins, short-finned pilot whales, spinner dolphins) indicate genetic differentiation between populations around the Hawaiian Islands and those elsewhere in the tropical Pacific (Chivers et al. 2003, Andrews et al. 2006, Martien et al. 2005). While genetic analyses have not yet been undertaken for other species of Hawaiian odontocetes, photo-identification results from a number of species (i.e., rough-toothed dolphin, dwarf sperm whale, Cuvier's beaked whale, Blainville's beaked whale, melon-headed whale, pygmy killer whale) all indicate considerable site fidelity (Baird et al. 2006a, 2006b, 2006e; Huggins et al. 2005; McSweeney et al. 2005, 2006), suggesting that such genetic population structure is also likely. **Such population sub-division/residency has a number of implications for assessing potential impacts: 1) populations are smaller than would be expected if no population structure exists (since estimates of their abundance over the entire Hawaiian EEZ include individuals from multiple populations); 2) individuals may be repeated exposed to anthropogenic impacts; and 3) if individuals in an area are displaced, re-occupancy of that area may not occur quickly.**

Biases and limitations of existing survey data

Information used in previous Navy environmental planning in Hawai‘i (e.g., the incidental harassment authorization application for RIMPAC) has not taken into account the biases and limitations associated with available survey data. For example, neither aerial surveys (Mobley et al. 2000) nor large vessel ship surveys (Barlow 2006) detected dwarf sperm whales *(Kogia sima)* around the main Hawaiian Islands, yet this species is commonly recorded in small vessel surveys (Baird 2005) and there is evidence of a resident population off the island of Hawaii (Baird et al. 2006b). **Rather than accept population density values from published references uncritically, the EIS should take into account survey biases for marine mammals (e.g., difficulty in detecting/identifying some long diving or cryptic species) and accurately reflect existing uncertainty appropriately.** Comparisons of results from different surveys undertaken in the same area should be made with the express goal of determining what results are most robust with respect to different species.

Between-population variability

A comparison of results on habitat use of Hawaiian odontocetes with populations of the same species elsewhere in their range indicated strong differences in habitat use. For example, in the Bahamas, dwarf sperm whales are typically recorded in water less than 200 m deep (MacLeod et al. 2004), yet they have never been documented in such depths in Hawai‘i, and are typically found in water greater than 500 m (Baird 2005, Baird unpublished). Similarly, rough-toothed dolphins have been regularly documented feeding in waters of 5-40 m depth in Brazil (Lodi and Hetzel 1999), yet in Hawai‘i resident populations of rough-toothed dolphins are typically found in depths greater than 700 m off Kaua‘i and Ni‘ihau, and greater than 1,000 m off Hawai‘i (Baird et al. 2006e). **As such, any extrapolation of results from other areas in regards to habitat use for Hawaiian populations should be made with caution, and the potential for between-population variability should be considered.**

I hope these comments are helpful, and I would appreciate being added to your mailing list to receive future notices about the EIS/OEIS.

Sincerely,

Robin W. Baird, Ph.D.
Research Biologist

rwbaird@cascadiaresearch.org

Encl: reference list

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