

Spatial distribution of Blainville's beaked whales, Cuvier's beaked whales, and short-finned pilot whales in Hawai'i using dorsal fin-attached satellite and VHF tags: implications for management and conservation

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Studying spatial distribution and movement patterns of oceanic cetaceans has many inherent challenges, yet such information is imperative to the conservation and management of populations. Attaching small telemetry devices to track movements of individuals over periods of weeks to months can greatly increase our knowledge of distribution and habitat use, particularly for difficult-to-study oceanic species. Due to cryptic behavior and long dive times, beaked whales are notoriously difficult to locate and thus often missed by visual surveys. In order to better track medium-term (weeks to months) movement of three species of odontocetes in Hawai'i, remotely deployed dorsal fin-attached ARGOS satellite tags were applied to one Cuvier's and three Blainville's beaked whales and one short-finned pilot whale in 2006.. These medium-term tags were anchored into the connective tissue of the dorsal fin or dorsal ridge by two small darts on either end of the tag, with the tag itself remaining external. Satellite transmissions for the Blainville's beaked whales were received for up to 23 days (mean=18 days), while transmissions for the Cuvier's were received for three days. Tagged west of the island of Hawai'i, all three Blainville's remained associated with the island but moved out of the study area into the Alenuihaha Channel, between the island of Hawai'i and Maui, with one moving to the east side of the island. The satellite-tagged pilot whale also moved into waters adjacent to the channel. This channel is a site of current Navy training exercises, including the use of mid-frequency sonar. Odontocetes, beaked whales in particular, are believed to be susceptible to impacts from the use of mid-frequency sonar. Application of these medium-term tags also shows promise for monitoring movement patterns of individuals during naval activities to test for a shift in distribution.