

PYGMY SPERM WHALE (*Kogia breviceps*): Hawaiian Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

Pygmy sperm whales are found throughout the world in tropical and warm-temperate waters (Caldwell and Caldwell 1989). Between the years 1949 and 2002, at least 22 strandings of this species were reported in the Hawaiian Islands (Tomich 1986; Nitta 1991; Maldini 2005). A stranded calf was held for several days at Sea Life Park (Pryor 1975:94). Shallenberger (1981) reported three sightings off Oahu and Maui. Two sightings of pygmy or dwarf sperm whales were made between Hawaii and Maui during 1993-98 aerial surveys within about 25 nmi of the main Hawaiian Islands (Mobley et al. 2000). Two sightings were made during a 2002 shipboard survey of waters within the U.S. Exclusive Economic Zone (EEZ) of the Hawaiian Islands (Figure 1; Barlow 2003). Baird (2005) reported one sighting off Ni'ihau and another off the island off Hawaii (R.W. Baird, pers. comm.). Nothing is known about stock structure for this species. For the Marine Mammal Protection Act (MMPA) stock assessment reports, pygmy sperm whales within the Pacific U.S. EEZ are divided into two discrete, non-contiguous areas: 1) Hawaiian waters (this report), and 2) waters off California, Oregon and Washington.

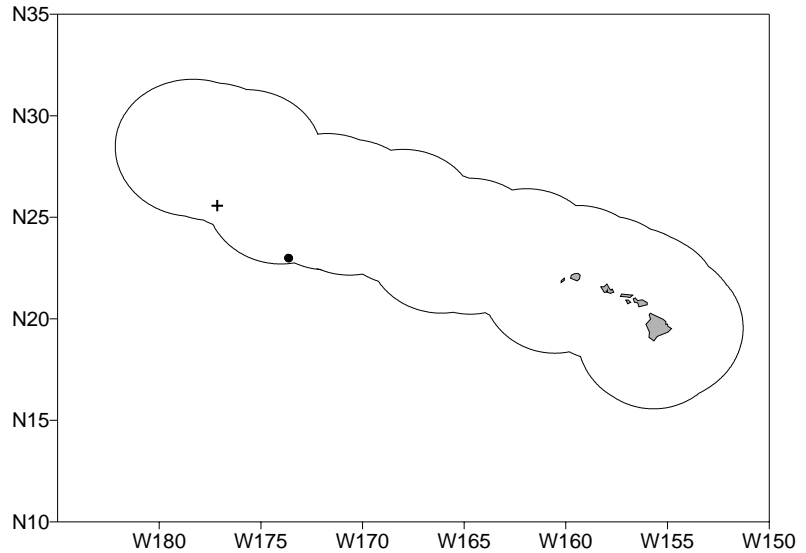


Figure 1. Sighting locations of pygmy sperm whales (filled circle) and unidentified *Kogia* (cross) during the 2002 shipboard cetacean survey of U.S. EEZ waters surrounding the Hawaiian Islands (Barlow 2003; see Appendix 2 for details on timing and location of survey effort). Outer line indicates approximate boundary of survey area and U.S. EEZ.

POPULATION SIZE

As part of the Marine Mammal Research Program of the Acoustic Thermometry of Ocean Climate (ATOC) study, a total of twelve aerial surveys were conducted within about 25 nmi of the main Hawaiian Islands in 1993, 1995 and 1998. Two sightings of five pygmy or dwarf sperm whales were made; however, these sightings were excluded during abundance analyses (Mobley et al. 2000), because they were made during poor observation conditions. A 2002 shipboard line-transect survey of the entire Hawaiian Islands EEZ resulted in an abundance estimate of 7,251 (CV=0.77) pygmy sperm whales (Barlow 2003), including a correction factor for missed diving animals. This is currently the best available abundance estimate for this stock.

Minimum Population Estimate

The log-normal 20th percentile of the 2002 abundance estimate is 4,082 pygmy sperm whales.

Current Population Trend

No data are available on current population trend.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

No data are available on current or maximum net productivity rate.

POTENTIAL BIOLOGICAL REMOVAL

The potential biological removal (PBR) level for this stock is calculated as the minimum population size (4,082) times one half the default maximum net growth rate for cetaceans (½ of 4%) times a recovery factor of 0.50

(for a stock of unknown status with no known fishery mortality or serious injury within the Hawaiian Islands EEZ; Wade and Angliss 1997), resulting in a PBR of 41 pygmy sperm whales per year.

HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

Fishery Information

Information on fishery-related mortality of cetaceans in Hawaiian waters is limited, but the gear types used in Hawaiian fisheries are responsible for marine mammal mortality and serious injury in other fisheries throughout U.S. waters. Gillnets appear to capture marine mammals wherever they are used, and float lines from lobster traps and longlines can be expected to occasionally entangle whales (Perrin et al. 1994). Interactions with cetaceans have been reported for all Hawaiian pelagic fisheries (Nitta and Henderson 1993), but no interactions with pygmy sperm whales have been documented. None were observed hooked in the Hawaii-based longline fishery between 1994 and 2002, with approximately 4-25% of all effort observed (Forney 2004).

STATUS OF STOCK

The status of pygmy sperm whales in Hawaiian waters relative to OSP is unknown, and there are insufficient data to evaluate trends in abundance. They are not listed as “threatened” or “endangered” under the Endangered Species Act (1973), nor as “depleted” under the MMPA. The Hawaiian stock of pygmy sperm whales is not considered strategic under the 1994 amendments to the MMPA because there has been no reported fisheries related mortality or serious injury. Insufficient information is available to determine whether the total fishery mortality and serious injury for pygmy sperm whales is insignificant and approaching zero mortality and serious injury rate. The increasing levels of anthropogenic noise in the world’s oceans has been suggested to be a habitat concern for whales (Richardson et al. 1995), particularly for deep-diving whales like pygmy sperm whales that feed in the oceans’ “sound channel”.

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