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MINKE WHALE (*Balaenoptera acutorostrata scammoni*): Hawaiian Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

The International Whaling Commission (IWC) recognizes 3 stocks of minke whales in the North Pacific: one in the Sea of Japan/East China Sea, one in the rest of the western Pacific west of 180°N, and one in the "remainder" of the Pacific (Donovan 1991). The "remainder" stock only reflects the lack of exploitation in the eastern Pacific and does not imply that only one population exists in that area (Donovan 1991). In the "remainder" area, minke whales are relatively common in the Bering and Chukchi seas and in the Gulf of Alaska, but are not considered abundant in any other part of the eastern Pacific (Leatherwood et al. 1982; Brueggeman et al. 1990). In the Pacific, minke whales are usually seen over continental shelves (Brueggeman et al. 1990). In the extreme north, minke whales are believed to be migratory, but in inland waters of Washington and in central California they appear to establish home ranges (Dorsey et al. 1990).

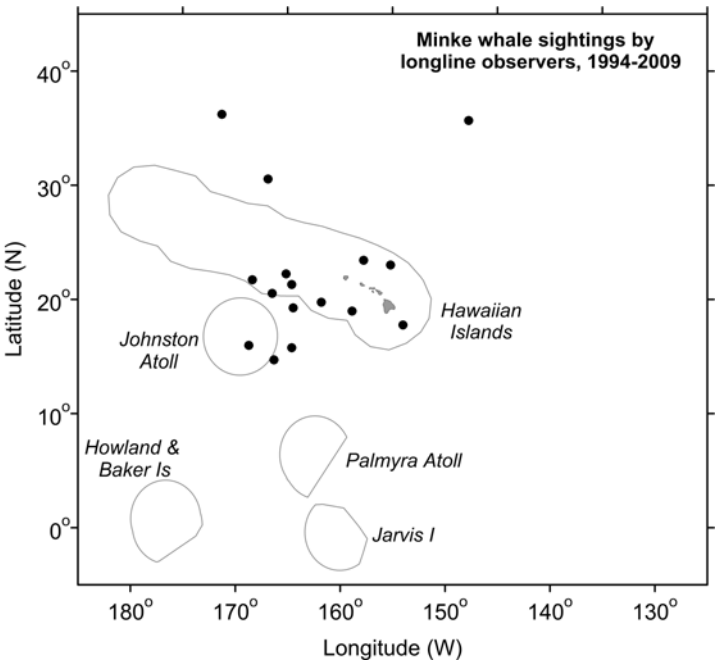

Figure 1. Locations of minke whale sightings from longline observer records (diamonds; NMFS/PIR, unpublished data), and sighting (closed circle) and acoustic detections (open circles) made during the 2002 shipboard survey of U.S. EEZ waters surrounding the Hawaiian Islands (Barlow 2003; see Appendix 2 for details on timing and location of survey effort). Solid lines represent the U.S. EEZ.

Minke whales have only been recently confirmed to occur seasonally around the Hawaiian Islands (Barlow 2003, Rankin and Barlow, 2005), and their migration routes or destinations are not known. Minke whales were observed within 22km of Kauai during a nearshore survey in February 2005 (Rankin et al. 2007) and four reliable sightings of minke whales were made by observers in the Hawaii-based longline fishery during the months of December-March, 2000-2002 (Figure 1; NMFS/PIR unpublished data). One confirmed sighting of a minke whale was made in November 2002 during a survey of waters within the U.S. Exclusive Economic Zone (EEZ) of the Hawaiian Islands (Barlow 2003), and additional acoustic detections of this species' distinctive call (known as the 'boing') were made that could not be visually verified (Figure 1). There are no known stranding records of this species from the main islands (Nitta 1991; Maldini et al. 2005). For the Marine Mammal Protection Act (MMPA) stock assessment reports, there are three stocks of minke whale within the Pacific U.S. EEZ: 1) a Hawaiian stock (this report), 2) a California/Oregon/ Washington stock, and 3) an Alaskan stock. The Hawaiian stock includes animals found both within the Hawaiian Islands EEZ and in adjacent international waters; however, because data on abundance, distribution, and human-caused impacts are largely lacking for international waters, the status of this stock is evaluated based on data from U.S. EEZ waters of the Hawaiian Islands (NMFS 2005).

POPULATION SIZE

A summer/fall 2002 shipboard line-transect survey of the entire Hawaiian Islands EEZ resulted in one 'off effort' sighting of a minke whale following the acoustic detection of a so-called 'boing' (Barlow 2003; Rankin and Barlow, 2005). This sighting was not part of regular survey operations and, therefore, could not be used to calculate an estimate of abundance (Barlow 2003). Furthermore, the majority of this survey took place during summer and early fall, when the Hawaiian stock of minke whale would be expected to be farther north. There currently is no abundance estimate for this stock of minke whales, which appears to occur seasonally (about November - March)

around the Hawaiian Islands.

Minimum Population Estimate

There is no minimum population estimate for the Hawaiian stock of minke 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 for Hawaiian minke whales.

POTENTIAL BIOLOGICAL REMOVAL

No PBR can be calculated for this stock at this time.

HUMAN CAUSED MORTALITY AND SERIOUS INJURY

Fishery Information

Information on fishery-related mortality and serious injury 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 cetaceans (Perrin et al. 1994). Interactions with cetaceans have been reported for all Hawaiian pelagic fisheries (Nitta and Henderson 1993), but none of these interactions are known to have involved minke whales (Forney 2009). There are currently two distinct longline fisheries based in Hawaii: a deep-set longline (DSLL) fishery that targets primarily tunas, and a shallow-set longline fishery (SSLL) that targets swordfish. Both fisheries operate within U.S. waters and on the high seas. Between 2004 and 2008, no minke whales were observed hooked or entangled in the SSLL fishery (100% observer coverage) or the DSLL fishery (20-28% observer coverage) (McCracken & Forney 2010).

STATUS OF STOCK

The status of minke whales in Hawaiian waters relative to OSP is unknown, and there are insufficient data to evaluate trends in abundance. It is not listed as "threatened" or "endangered" under the Endangered Species Act (1973), nor as "depleted" under the MMPA. Although information on minke whales in Hawaiian waters is limited, this stock would not be considered strategic under the 1994 amendments to the MMPA because there has been no reported fisheries related mortality or serious injury within the Hawaiian Islands EEZ. Insufficient information is available to determine whether the total fishery mortality and serious injury for minke whales is insignificant and approaching zero mortality and serious injury rate. The increasing levels of anthropogenic sound in the world's oceans has been suggested to be a habitat concern for whales (Richardson et al. 1995).

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