

MELON-HEADED WHALE (*Peponocephala electra*): Western North Atlantic Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

The melon-headed whale is distributed worldwide in tropical to sub-tropical waters (Jefferson *et al.* 1994). A group of melon-headed whales was sighted during both a 1999 (20 whales) and 2002 (80 whales) vessel survey of the western North Atlantic off of Cape Hatteras, North Carolina in waters >2500 m deep (Figure 1; Anon. 1999; Anon. 2002). Melon-headed whales are assumed to be part of the cetacean fauna of the tropical western North Atlantic. The paucity of sightings is probably due to a naturally low number of groups compared to other cetacean species.

Sightings in the more extensively surveyed northern Gulf of Mexico occur in oceanic waters (Mullin *et al.* 1994; Mullin and Fulling in review). Sightings of melon-headed whales in the northern Gulf of Mexico were documented in all seasons during aerial surveys of the northern Gulf of Mexico between 1992 and 1998 (Hansen *et al.* 1996; Mullin and Hoggard 2000). The western North Atlantic population is provisionally being considered one stock for management purposes. Additional morphological, genetic and/or behavioral data are needed to provide further information on stock delineation.

POPULATION SIZE

Abundances have not been estimated from the 1999 and 2002 vessel surveys in western North Atlantic (Anon. 1999; Anon. 2002); therefore the population size of melon-headed whales is unknown.

Minimum Population Estimate

The minimum population estimate for the western North Atlantic stock of melon-headed whales unknown.

Current Population Trend

There are insufficient data to determine the population trends for this species.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

Current and maximum net productivity rates are unknown for this stock. For purposes of this assessment, the maximum net productivity rate was assumed to be 0.04. This value is based on theoretical modeling showing that cetacean populations may not grow at rates much greater than 4% given the constraints of their reproductive history (Barlow *et al.* 1995).

POTENTIAL BIOLOGICAL REMOVAL

Potential biological removal level (PBR) is the product of the minimum population size, one half the maximum net productivity rate, and a recovery factor (MMPA Sec. 3.16 U.S.C. 1362; Wade and Angliss 1997). The minimum population size is unknown. The maximum productivity rate is 0.04, the default value for cetaceans. The "recovery" factor, which accounts for endangered, depleted, threatened stocks, or stocks of unknown status relative to optimum sustainable population (OPS), is assumed to be 0.5. PBR for the western North Atlantic stock of melon-headed whales is unknown.

ANNUAL HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

There has been no reported fishing-related mortality of a melon-headed whale between 1997 and 2001 (Yeung 1999; Yeung 2001).

Fisheries Information

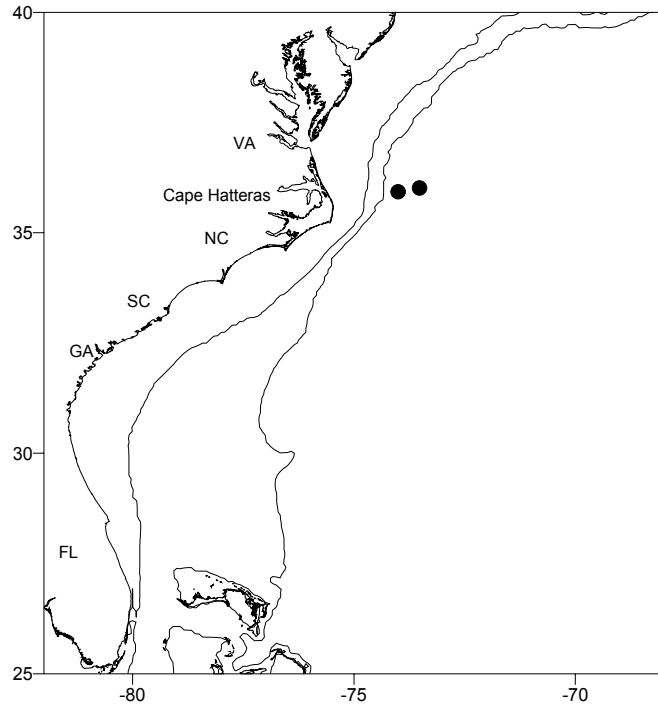


Figure 1. Distribution of melon-headed whales from SEFSC vessel surveys during 1998-2002. All sightings are shown. Solid lines indicate the 200 and 2000 m isobaths.

The level of past or current, direct, human-caused mortality of melon-headed whales in the western North Atlantic is unknown. There has historically been some take of this species in small cetacean fisheries in the Caribbean (Caldwell *et al.* 1976). Pelagic swordfish, tunas, and billfish are the targets of the longline fishery operating in the western North Atlantic. There were no reports of mortality or serious injury to melon-headed whales by this fishery.

Other Mortality

There was one reported stranding of a melon-headed whale in the western North Atlantic between 1997 and 2002, though there was no evidence of human interaction for this stranded animal. Stranding data probably underestimate the extent of fishery-related mortality and serious injury because not all of the marine mammals which die or are seriously injured in fishery interactions wash ashore, not all that wash ashore are discovered, reported or investigated, nor will all of those that do wash ashore necessarily show signs of entanglement or other fishery-interaction. Finally, the level of technical expertise among stranding network personnel varies widely as does the ability to recognize signs of fishery interactions.

STATUS OF STOCK

The status of melon-headed whales in the western North Atlantic, relative to OSP, is unknown. The species is not listed as threatened or endangered under the Endangered Species Act. There are insufficient data to determine the population trends for this species. The total fishery-related mortality and serious injury for this stock is unknown, but assumed to be less than 10% of the calculated PBR and can be considered to be insignificant and approaching zero mortality and serious injury rate. This is not a strategic stock.

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