

PYGMY SPERM WHALE (*Kogia breviceps*): Western North Atlantic Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

The dwarf sperm whale (*Kogia breviceps*) and the pygmy sperm whale (*K. simus*) appear to be distributed worldwide in temperate to tropical waters (Caldwell and Caldwell 1989). Sightings of these animals in the northern Gulf of Mexico occur primarily along the continental shelf edge and over the deeper waters off the continental shelf (Mullin *et al.* 1991; Southeast Fisheries Science Center unpublished data). Pygmy sperm whales and dwarf sperm whales are difficult to distinguish and sightings of either species are often categorized as *Kogia* spp. There is no information on stock differentiation for the Atlantic population.

POPULATION SIZE

Estimates of abundance were derived through the application of distance sampling analysis (Buckland *et al.* 1993) and the computer program DISTANCE (Laake *et al.* 1993) to sighting data collected during a 1992 winter, visual sampling, line-transect vessel survey of the U.S. Atlantic Exclusive Economic Zone (EEZ) waters between Miami, Florida, and Cape Hatteras, North Carolina. Abundance was estimated for both species combined because the majority of sightings were not identified to species, and both species are known to occur in the area. The estimated abundance of dwarf sperm whales and pygmy sperm whales combined for the 1992 surveys was 420 animals (coefficient of variation, CV = 0.60) (Hansen *et al.* 1994). Pygmy sperm whale abundance alone cannot be estimated due to uncertainty of species identification of sightings.

Minimum Population Estimate

A best and minimum population size could not be estimated because of the uncertainty in species identification.

Current Population Trend

No information was available to evaluate trends in population size.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

Current and maximum net productivity rates are not known 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 life history (Barlow *et al.* 1995).

POTENTIAL BIOLOGICAL REMOVAL

Potential Biological Removal (PBR) is the product of minimum population size, one-half the maximum productivity rate, and a “recovery” factor (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 (OSP) is assumed to be 0.5 because this stock is of unknown status. PBR for the western North Atlantic pygmy sperm whale was unknown because the minimum population estimate cannot be estimated.

ANNUAL HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

The level of past or current, direct, human-caused mortality of pygmy sperm whales in the U.S. Atlantic EEZ is unknown. Available information indicates there is likely little, if any, fisheries interaction with pygmy sperm whales in the U.S. Atlantic EEZ.

There were no documented strandings of pygmy sperm whales along the U.S. Atlantic coast during 1987-present which were classified as likely caused by fishery interactions. 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 may wash ashore, 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 interaction.

Fisheries Information

Data on current incidental takes in U.S. fisheries are available from several sources. In 1986, NMFS established a mandatory self-reporting fisheries information system for large pelagic fisheries. The Northeast Fisheries Science Center (NEFSC) Sea Sampling Observer Program initiated in 1989, and since that year several fisheries have been covered by the program. In late 1992 and in 1993, the SEFSC provided observer coverage of pelagic longline vessels fishing off the Grand Banks (Tail of the Banks) and provides observer coverage of vessels fishing south of Cape Hatteras.

There have been no observed mortalities or serious injuries by NMFS Sea Samplers in the pelagic drift gillnet, pelagic longline, pelagic pair trawl, New England multispecies sink gillnet, mid-Atlantic coastal sink gillnet, and North Atlantic bottom trawl fisheries.

Other Mortality

At least 142 pygmy sperm whale strandings were documented along the U.S. Atlantic coast between Cape Hatteras, North Carolina, and Miami, Florida, during 1987-1994. Two of the stranded animals had plastic, or a plastic bag or bags in their stomachs, and one additional animal had possible propeller cuts on its flukes.

STATUS OF STOCK

The status of this stock relative to OSP in the U.S. Atlantic EEZ is unknown. This species is not listed as endangered or threatened under the Endangered Species Act. There is insufficient information with which to assess population trends. It is not known whether total fishery-related mortality and serious injury for this stock is less than 10% of PBR and therefore, cannot be considered insignificant and approaching zero mortality and serious injury rate, because PBR cannot be calculated. Upon the advice of the Atlantic Scientific Review Group this stock has been designated a strategic stock because PBR cannot be determined and there is an unknown amount of possible human-caused mortality from the ingestion of marine debris such as plastic bags and from possible boat strikes.

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