



Species of Concern

NOAA National Marine Fisheries Service

Dusky shark

Carcharhinus obscurus

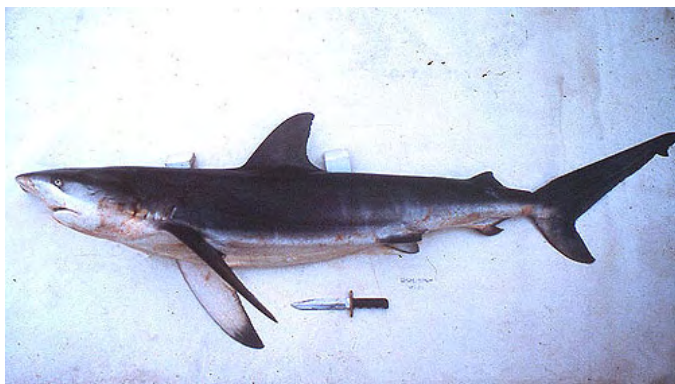


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KEY INFORMATION

Areas of Concern

Western Atlantic: Gulf of Mexico and South Atlantic.

Year Identified as “Species of Concern”
1997

Factors for Decline

- Recreational fishing
- Bycatch (especially from long-line gear)

Conservation Designations

IUCN: Near Threatened – Globally except the U.S. population in the Northwestern Atlantic and Gulf of Mexico was ranked as Vulnerable.

American Fisheries Society: Vulnerable

Brief Species Description:

The dusky shark is also known as the bronze whaler or black whaler. It is a large, fairly slender shark with a low ridge between the dorsal fins. The rounded snout is shorter or equal to the width of the mouth. The first dorsal fin originates over or near the free rear tips of the pectoral fins. The color is bronzy gray to blue gray above with white ventrally (Castro 1983; Last and Stevens 1994). This species prefers warm temperate to tropical waters. It occurs from the surf zone to well offshore, and from the surface to depths of 1300 feet (400 m; Compagno 1984). Long migrations associated with temperature change are observed for this species (northward in summer and southward in fall). The dusky shark is not commonly found in [estuaries](#) due to its avoidance of low salinity (Compagno 1984, Musick et al. 1993). The average size is about 11.8 feet (360 cm) TL and about 400 pounds (180 kg). Males attain sexual maturity at 9.15 feet (279 cm) TL (about 19 years); females mature at 9.3 feet (284 cm) TL (about 21 years). This long lived shark (maximum age about 40 years) is viviparous (placental live bearer) with litter sizes ranging from 6 to 14. Young are born at 33 to 39 inches (85-100cm). They reproduce every 3 years either between June and July or December and January. Their diet includes bony fishes, cartilaginous fishes, and squid.

In the western Atlantic, where it is a species of concern, it extends from southern New England to the Caribbean and Gulf of Mexico to southern Brazil (Figure 1). However, its distribution off Central America is poorly known. Its occurrence is uncertain in the eastern North Atlantic, but it has been recorded around oceanic islands off western Africa. These records and others from tropical insular areas may be misidentifications of a sibling species (*C. galapagensis*) (J. Musick,

pers. comm.). In the western Indian Ocean, it occurs off South Africa, Mozambique, Madagascar, and possibly in the Red Sea. It is found in the waters of Japan, China, Vietnam, Australia, and New Caledonia in the western Pacific. In the eastern Pacific, the dusky extends from southern California to Gulf of California, Revillagigedo Islands, and possibly Chile (Castro 1983, Compagno 1984).

The dusky shark undertakes long temperature-related migrations. On both coasts of the U.S., dusky migrate northward in summer as the waters warm and retreat southward in fall as water



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temperatures drop. Seasonal migrations (north in winter and south in summer) also occur off South Africa (Bass et al. 1973). In Western Australia, adolescents and adults move inshore during the summer and fall, with neonates occupying separate inshore areas (Last and Stevens 1994). In the Indian Ocean, the young are known to aggregate in dense assemblages when feeding (Compagno 1984).

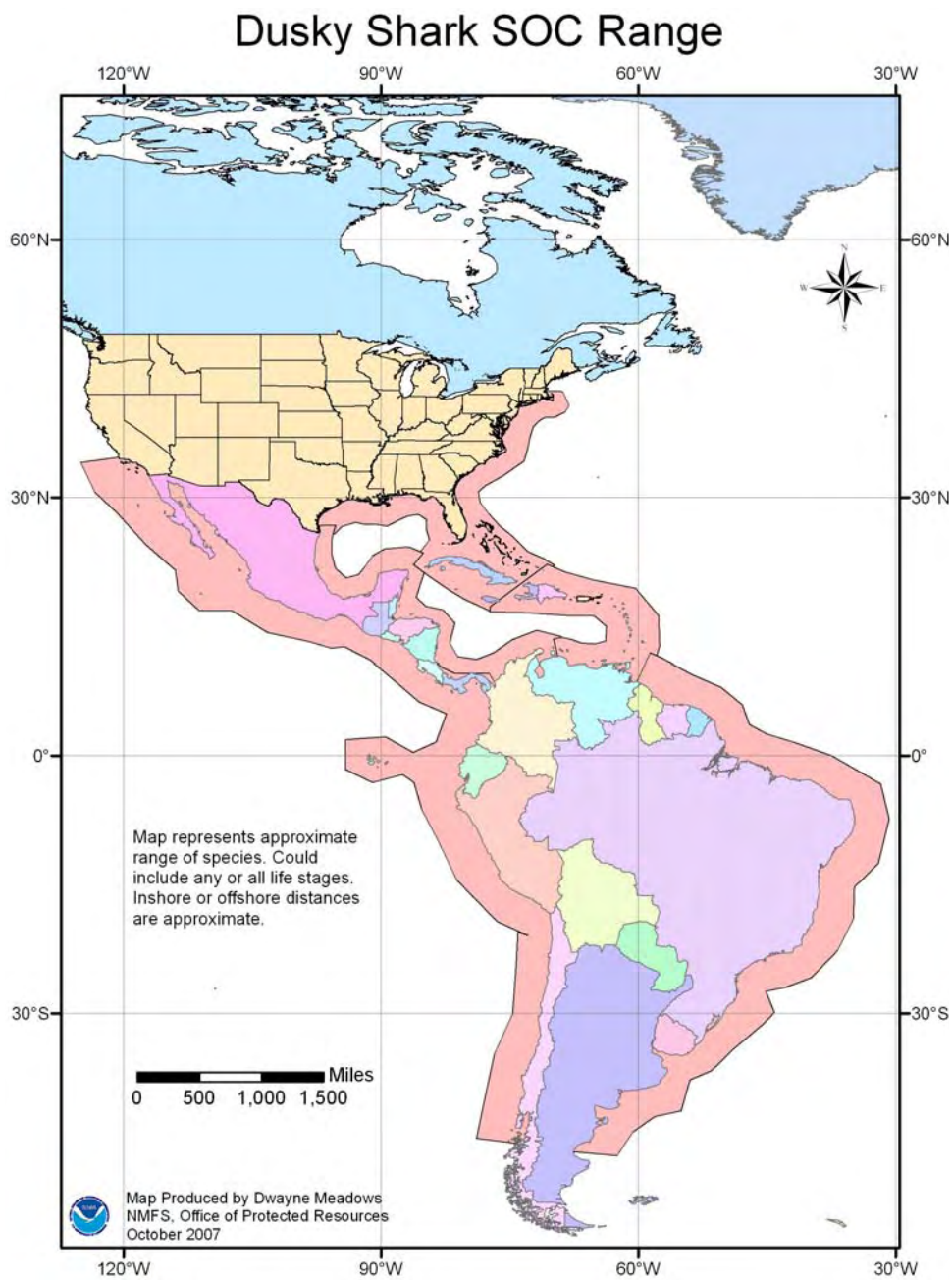


Figure 1. Map of the Western Hemisphere range of the dusky shark.



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Rationale for “Species of Concern” Listing:

Demographic and Genetic Diversity Concerns:

Reviews of catch and landings data for the large coastal shark assemblage in the western Atlantic (including dusky and other requiem sharks) found that by 1986 the abundance of many of the large coastal species had probably declined by 50 to 75% from 1970s levels -- even prior to the expansion of the commercial shark fishery in 1986. Today the dusky shark population in the northwestern Atlantic and Gulf of Mexico is probably at 15 to 20% of its mid-1970s abundance. Recent demographic analyses of *C. obscurus* in the western Atlantic have generated estimates of the annual rate of population increase of 2.8% (Cortes 1996) and 5.57% (Sminkey 1996). Both of these estimates assume no fishing mortality and a two-year reproductive cycle. Current studies indicate that the reproductive cycle might be three years, not two (Musick 1995, GSAFDF 1996). Given this, and the fact that these sharks are caught as [bycatch](#), population increase rates may be even lower than this.

Factors for Decline:

Currently the principal threat to the dusky shark is from recreational shark fisheries. Commercial fisheries contributed to decline but possession was outlawed in 1998. Assessment of the fishery using population models is difficult, and a tagging study was undertaken to determine exploitation rates. Current estimates are that 18 to 28% of neonates were caught in the first year. Dusky sharks are taken as bycatch in directed tuna, swordfish, and shark longline fisheries, and in tuna and swordfish gill net fisheries. With life history traits such as slow growth and late maturity, the dusky shark is susceptible to overfishing. Dusky shark, as part of the large coastal shark management unit, was identified as [overfished](#) in 1993 when the Shark Fishery Management Plan (FMP) was implemented. Ha (unpublished) found that size of dusky sharks decreased between 1961 and 2005 off New Jersey.

Status Reviews/Research Underway:

In 2006, NMFS completed a stock assessment that found the species was at 20 percent of virgin biomass (Cortes et al. 2006).

Data Deficiencies:

Information is needed on stock structure and reproduction as well as better recreational release data.

Existing Protections and Conservation Actions:

Commercial and recreational fishing has been prohibited since 1998 but over 2000 were caught recreationally in 2003. A time/area closure was implemented in off North Carolina in 2005.

References:

- Castro, J.I. 1983. The Sharks of North American Waters. Texas A&M University Press, College Station, 180 p.
- Castro, J. I., C.M. Woodley, and R.L. Brudek. 1999. FAO Fisheries Technical Paper 380. A preliminary evaluation of the status of shark species. FAO, Rome.



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- Compagno, L.J.V. 1984. Sharks of the World. An Annotated and Illustrated Catalogue of Shark Species Known to Date. Part 1 - Hexanchiformes to Lamniformes. FAO Fisheries Synopsis 125, Vol. 4, pt. 1.
- Cortes, E. 1996. Demographic analysis as an aid in shark stock assessment and management. Fish Res.
- Cortes, E., E. Brooks, P. Apostolaki, and C.A. Brown. 2006. Stock assessment of dusky shark in the U.S. Atlantic and Gulf of Mexico. NMFS SE Fish Sci Ctr. Panama City, FL.
http://www.panamalab.noaa.gov/shark/pdf/Dusky_Shark_Assessment.zip
- GSAFDF (Gulf and South Atlantic Fisheries Development Foundation). 1996. Commercial shark fishery observer program. MARFIN Final Report. Tampa, FL, USA. 33 p.
- Last, P. and J. Stevens. 1994. Sharks and Rays of Australia. CSIRO; East Melbourne, Australia, 513 p.
- Musick, J.A., S. Branstetter, and J.A. Colvocoresses. 1993. Trends in shark abundance from 1974 to 1991 for the Chesapeake Bight region of the U.S. Mid-Atlantic coast. NOAA Technical Report NMFS 115.
- Musick, J. 1995. Critically endangered large coastal sharks, a case study: the sandbar shark, *Carcharhinus plumbeus* (Nardo, 1827). Shark News 5:6-7.
- Romine, J.G., J.A. Musick, and G.H. Burgess. 2001. An analysis of the status and ecology of the Dusky shark, *Carcharhinus obscurus*, in the western North Atlantic. The Virginia Institute of Marine Science. 40 p.
- Sminkey, T.R. 1996. Demographic analyses of natural and exploited populations of three large coastal sharks. Document SB-III-8 of the 1996 Report of the Shark Evaluation Workshop. SE Fish Sci Ctr, Miami, FL.

Point(s) of contact for questions or further information:

For further information on this Species of Concern, or on the Species of Concern Program in general, please contact NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301) 713-1401, soc.list@noaa.gov; <http://www.nmfs.noaa.gov/pr/species/concern/>, or Dr. Stephania Bolden, NMFS, Southeast Region, Protected Resources Division, 263 13th Avenue S., St. Petersburg, FL 33701, (727) 824-5312, Stephania.Bolden@noaa.gov.