



Photo credit: Virginia Institute of Marine Science.

### KEY INFORMATION

#### Areas of Concern

Western Atlantic - Gulf of Mexico, south Atlantic and Caribbean.

**Year Identified as "Species of Concern"**  
1997

#### Factors for Decline

- Fishing
- Bycatch

#### Conservation Designations

IUCN: Vulnerable

American Fisheries Society: Vulnerable

#### Brief Species Description:

The night shark is a deep water species found at 900 to 1200 feet (275 - 365 m) during the day that migrates up in the water column at night to depths around 610 feet (185 m). They are found throughout the Atlantic and are a species of concern in the Western Atlantic (Figure 1). They are characterized by a rather stout streamlined body with large eyes and an elongated snout. Their dorsal fins are both low, with the origin of the anterior fin over or slightly behind the free rear tips of the pectoral fins. The second dorsal is very low and much smaller than the first with an origin opposite the anal fin. Eyes of living sharks are green in color. Body color is gray-blue and grayish brown above, with a white to grayish white underbelly; sometimes with black spots. Maximum size is 9.2 feet (280 cm) TL and maximum weight is 169 pounds (76.7 kg). They live up to 17 years. Sexual maturity of a female is at 6.7 feet (200 cm) TL; males are mature at about 6.2 feet (190 cm) TL. Little is known about the reproductive biology of this species: breeding is believed to occur in the summer, and they are viviparous (placental live birth). Litter size ranges from 12-18 pups of 4 to 24 inches (10-60 cm) TL. Night sharks forage primarily on squids, small fishes, and shrimp.

#### Rationale for "Species of Concern" Listing:

##### **Demographic and Genetic Diversity Concerns:**

Historically, night sharks comprised a significant proportion of the artisanal Cuban shark fishery, making up to 60 to 75% of the catch from 1937 to 1941 (Martinez, 1947). However, beginning in the 1970's with the development of the swordfish fishery, anecdotal evidence has demonstrated a substantial decline in the abundance of this species. In addition, sport fishermen in the 1970s would catch night sharks when more desirable species, such as marlins, were not biting. Consequently, this species is rarely captured today along the southeastern coast of the U.S. NOAA surveys have found only 2 out of a total 439 sharks caught in the commercial swordfish and tuna longline catches were night sharks in 1991. Likewise, only a single individual out of 362 in 1993 and 10 of 295 in 1994 were night sharks (Dennis Lee, Southeast Fishery Science Center, pers. comm.). Guitart-Manday (1975) documented a decline in the mean weight per unit of effort for night sharks from 118 pounds (53.4 kg) in 1971 to 47 pounds (21.1 kg) in 1973. Night sharks comprised 26.1% of the shark catch in the [pelagic](#) longline fishery from 1981-1983 (Berkeley and Campos, 1988) but this declined to 0.3% and 3.3% of the shark catch in 1993 and 1994 based on observer data (L. Beerkircher, unpublished data)



and even though shark catch was not changing drastically. Further, photographic evidence from marlin tournaments in south Florida in the 1970's show that large night sharks were caught daily but today are rarely captured (J.I. Castro, personal observation). However, there has been a recent increase in night shark numbers.

Further, quantitative biological information (e.g., age, growth, longevity, age-at-maturity) for stocks off the US east coast and Gulf of Mexico are lacking, which prevents development of any type of demographic models which could be used to predict the productivity of the stock and ensure that they are harvested at sustainable levels.

## Night Shark SOC Range

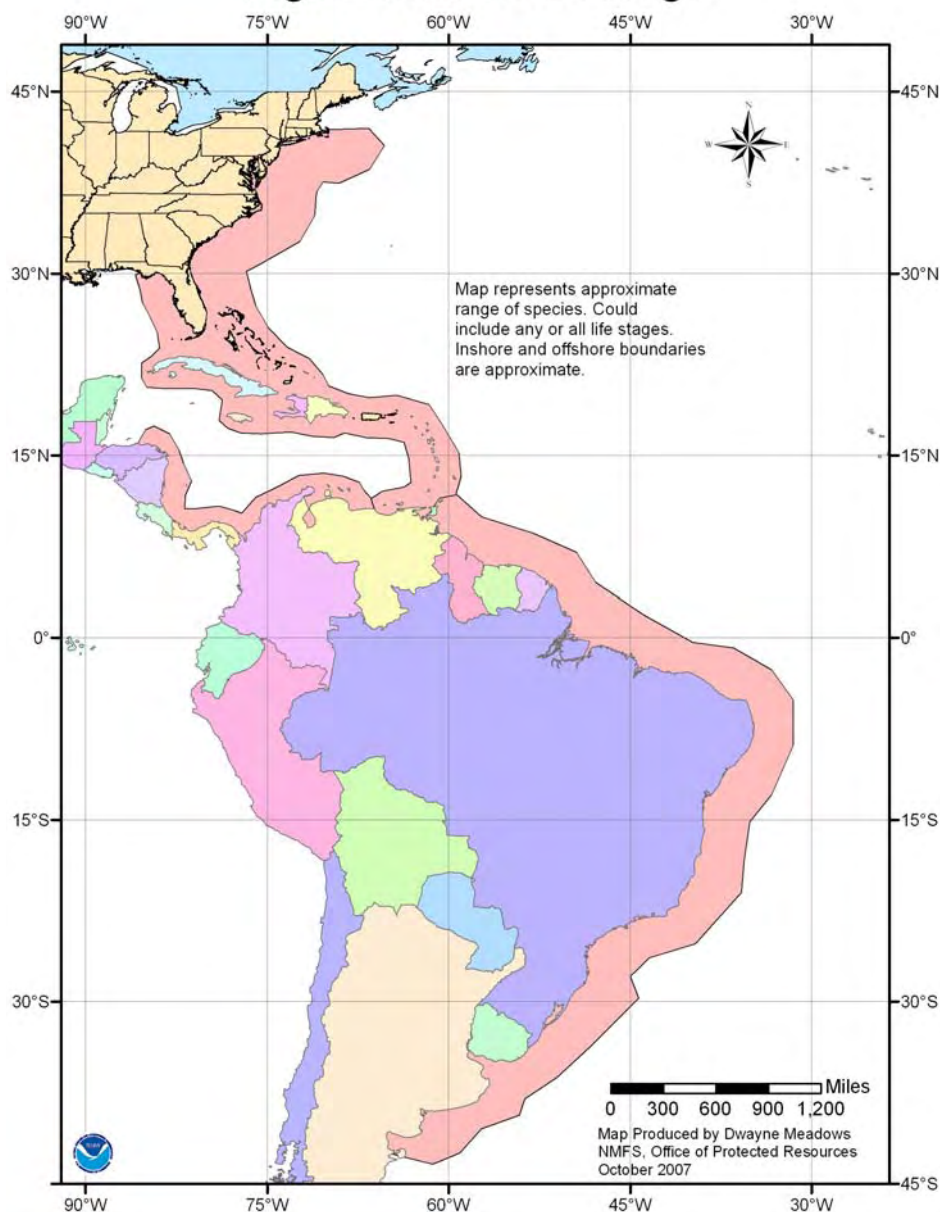


Figure 1. Western Atlantic range of the night shark species of concern.



## Species of Concern

NOAA National Marine Fisheries Service

### **Factors for Decline:**

The night shark is caught mainly on longlines in about 100 fathoms, usually at night as [bycatch](#) from pelagic longline fisheries targeting tunas. While they used to be a common species caught as bycatch, they are presently landed less often. Direct targeting of the shark for its fins and meat value have occurred recently off the northeast coast of Brazil. The night shark has a low rate of population increase which makes it highly susceptible to overfishing. Although information from various fisheries has reported a significant decline in night sharks, it is unclear whether this decline is due to changes in fishing tactics, market, etc.

### **Status Reviews/Research Underway:**

In 2003 Southeast Fisheries Science Center of NMFS began conducting an update on the population status of the night shark. The status review was finalized in 2008 and concluded that the "night shark does not qualify as a species of concern, but should be retained on the prohibited species list as a precautionary approach to management" (Carlson 2008).

**Data Deficiencies:** None identified.

### **Existing Protections and Conservation Actions:**

In 1993, a Fishery Management Plan for Sharks (NMFS 1993) was developed for the management of shark populations in waters of the U.S. Atlantic and Gulf of Mexico. Because species-specific catch and life history information was limited, sharks were grouped and managed under three categories: large coastal, small coastal, and pelagic; this was done based on known life history, habitat, market, and fishery characteristics (NMFS 1993). Under the revised Fishery Management Plan of the Atlantic tunas, swordfish and sharks (NMFS 1999), NMFS further prohibited the retention of 19 species of sharks (Prohibited Species category) based on a precautionary approach for species with little or no biological information and thought to be highly susceptible to overexploitation. Because of the current lack of biological data and its rarity in surveys, the night shark, *Carcharhinus signatus*, is listed as a Prohibited Species. It was originally added to the Candidate Species List under the Endangered Species Act in 1997. The December 24, 2003, Amendment 1 to the FMP for Atlantic tunas, swordfish and sharks also prohibits retention of night sharks.

### **References:**

- Berkeley, S.A. and W.L. Campos. 1988. Relative abundance and fishery potential of pelagic sharks along Florida's east coast. *Marine Fisheries Review* 50:9-16.
- Carlson, J.K. and E. Cortes. 2008. The Status of the United States Population of Night Shark, *Carcharhinus signatus*. In press: *Marine Fisheries Review*. FAO Species Identification Guide for Fishery Purposes. 2002. p. 489 In: K.E. Carpenter (ed). Vol 1: Introduction, molluscs, crustaceans, hagfishes, sharks, batoid fishes and chimeras. FAO, Rome.
- Guitart Manday, D. 1975. Las pesquerias pelagico-oceanicas de corto radio de accion en la region noroccidental de Cuba. *Academia de ciencias de Cuba, Instituto de Oceanologia. Serie Oceanologia* 31. 26 p.
- Hazin, F., F.M. Lucena, T.S. Souza, C.E. Boeckman, M.K. Broadhurst and R.C. Menni. 2000. Maturation of the night shark, *Carcharhinus signatus*, in the southwestern equatorial Atlantic. *Bull Mar Sci* 66:173-185.



## Species of Concern

NOAA National Marine Fisheries Service

Martinez, J.L. 1947. The Cuban Shark Industry. U.S. Fish and Wildlife Service Fishery Leaflet 250. 18 pp.

NMFS. (National Marine Fisheries Service). 1993. Fishery management plan for sharks of the Atlantic Ocean. Silver Springs, MD, 167 p.

NMFS. (National Marine Fisheries Service). 1999. Fishery management plan of the Atlantic Tunas, swordfish and sharks. Volume 1. Silver Springs, MD, 321 p.

**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](mailto:soc.list@noaa.gov); <http://www.nmfs.noaa.gov/pr/species/concern/>, or Dr. Stephania Bolden, NMFS, Southeast Region, Protected Resources Division, 9721 Executive Center Drive N., St. Petersburg, FL 33702, (727)570-5312, [Stephania.Bolden@noaa.gov](mailto:Stephania.Bolden@noaa.gov).