Scalloped Hammerhead Shark *Sphyrna lewini* (Griffith & Smith, 1834)

Taxonomy

Kingdom: Animalia
Phylum: Chordata
Class: Chondrichthyes
Order: Carcharhiniformes
Family: Sphyrnidae
Genus: *Sphyrna*
Species: *S. lewini*

System

Marine

Habitat and Ecology

Marine neritic, marine oceanic.

Range description

Coastal warm temperate and tropical seas.

Geographical Distribution

Essentially circumglobal in coastal warm temperate and tropical seas. Western Atlantic: New Jersey to Brazil, including Gulf of Mexico and Caribbean. Eastern Atlantic from Mediterranean and Senegal to Zaire. Indo-West Pacific: South Africa and Red Sea to Pakistan, India, Burma, Thailand, Indonesia, China (including Taiwan Island), Japan, The Philippines, Australia (Queensland, Western Australia), New Caledonia. Central Pacific: Hawaii and Tahiti. Eastern Pacific: Southern California and Gulf of California to Panama, Ecuador and northern Peru.

Habitat and Biology

It is probably the most abundant hammerhead species, Ranges from the intertidal and surface down to at least 275 m depth. It is a minimal migratory species, forms large true schools at different stages of its life-history (Compagno 1984). The age at maturity varies from region to region. Thomas et al. (2021) estimated the length at maturity for male and female *S. lewini* (171.92 and 239.6 cm TL, respectively); earlier

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reports of length at maturity were in the range 180–210 cm TL from Indian waters (Raje et al. 2007; Kizhakudan et al. 2015); while those from different regions globally were in the range of 200–240 cm TL for females and 129–180 cm TL for males. The gestation period is 9–12 months; reproduces every 2–3 years and the survival of sharks to Age 1 and Age 2 is crucial for the maintenance of viable adult populations (Liu & Chen 1999). Females move inshore for breeding and often use near-shore nurseries (Duncan et al. 2006). The litter size is 1–41 pups (Baum et al. 2007). In Indian waters the breeding season is reported to be from August to October (Raje et al. 2007). The litter size is found to be 38–40, the size at birth ranges 38–57 cm, the maximum number of juveniles recorded from near shore waters was during August to December (CMFRI 2015).

Population & Population size

Unknown.

Generation length

17–21 years (Rigby et al. 2019).

Major threats

Fishery; the *Sphyrna lewini* is the commonest hammerhead in the tropics and is readily available in abundance to inshore artisanal and small commercial fisheries as well as offshore operations; it is caught with pelagic longlines, fixed bottom longlines, fixed bottom nets, and even bottom and pelagic trawls; the young are easily caught on light longline gear (Compagno 1984). The three hammerhead species are taken in targeted fisheries and as bycatch in fisheries for pelagic and demersal species (FAO 2013b). The average global production of hammerhead during 2000–2014 was 4,511 tonnes, where the average catch of S. lewini during 2000–2014 was 322 t, with a maximum of 523 t in 2002 (FAO 2016). The average landing of *S. lewini* along the Indian coast during 2007–2015 was about 621 t, where the maximum catch was 1,070 t in 2007 (Zacharia et al. 2017). India's average annual landings of elasmobranchs was estimated at 48,865 t during 2007–2018, in which hammerhead sharks, with an annual average landing of 639 t, contributed about 1.31%. The landings fluctuated between years, with maximum landings recorded in 2016 (1,172 t) and minimum in 2018 (290 t) of which *Sphyrna lewini* was the dominant species accounting for more than 95% of the hammerhead and are caught throughout the year in all gears and from all regions along the Indian coast (Thomas et al. 2021). The hammerhead sharks are highly sensitive to the fishing gears, where the research from USA shark bottom-longline fishery for the period 1994–2005 indicates that 70–95% of Scalloped Hammerheads are dead prior to being landed on the fishing vessel, depending on the gear soak time (Morgan & Burgess 2007). Baum et al. (2003) estimated an 89% decline in stocks of scalloped hammerheads in the western North Atlantic Ocean. Hayes et al. (2009) concluded that the North-West Atlantic and Gulf of Mexico scalloped hammerhead population has been depleted by approximately 83% since 1981.

Use and trade

The meat is utilized fresh, fresh-frozen, dried salted, and smoked for human consumption; the fins are used to prepare shark-fin soup base; the skins are prepared into leather; the liver oil is used for vitamins; and carcasses for fishmeal (Compagno 1984).

Justification

The species is caught globally as target and bycatch in pelagic commercial and small-scale fisheries, and is retained for the meat and fins. The Scalloped Hammerhead has undergone steep declines in all oceans, the population reductions are observed over 76.9–97.3%, with the highest probability of >80% reductions over three generation lengths (60 years), and is therefore assessed as Critically Endangered (CR) in the category of A2abd+A3bcd.

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