

= Finetooth shark =

The finetooth shark (*Carcharhinus isodon*) is a species of requiem shark , in the family Carcharhinidae , found in the western Atlantic Ocean , from North Carolina to Brazil . It forms large schools in shallow , coastal waters , and migrates seasonally following warm water . A relatively small , slender @-@ bodied shark , the finetooth shark can be identified by its needle @-@ like teeth , dark blue @-@ gray dorsal coloration , and long gill slits . It attains a maximum length of 1 @.@ 9 m (6 @.@ 2 ft) . The diet of this species consists primarily of small bony fishes , in particular menhaden . Like other members of its family , it is viviparous with females giving birth to two to six pups in estuarine nursery areas every other year .

Valued for its meat , the finetooth shark forms an important component of the commercial gillnet shark fishery operating off the southeastern United States . Population assessments suggest that this fishery does not currently pose a threat to U.S. populations of the species . The International Union for Conservation of Nature has therefore listed the finetooth shark under Least Concern , though no fishery data are available for this species off South America . This shark is not known to pose a danger to humans , though it snaps vigorously when captured and should be handled with caution .

= Taxonomy and phylogeny =

The finetooth shark was originally described as *Carcharias* (*Aprionodon*) *isodon* by French zoologist Achille Valenciennes , in Müller and Henle 's 1839 *Systematische Beschreibung der Plagiostomen* . The type specimen is a 65 @-@ cm (26 @-@ in) juvenile male , possibly caught off New York . This species was later moved to the genus *Carcharhinus* . The specific epithet *isodon* means " equal teeth " in Greek , and refers to the similar number of teeth in the upper and lower jaws . This species may also be referred to as the eventooth shark , smoothtooth shark , or night shark (usually used for *C. signatus*) .

As is the case for most *Carcharhinus* species , attempts to analyze the finetooth shark 's phylogenetic relationships have yielded variable results . In 1988 , Leonard Compagno grouped this species with the spinner shark (*C. brevipinna*) , blacktip shark (*C. limbatus*) , graceful shark (*C. amblyrhynchoides*) , and smooth tooth blacktip shark (*C. leiodon*) , on the basis of morphological characters . Gavin Naylor 's 1992 allozyme analysis found that the finetooth shark is the second @-@ most basal member of the genus next to the blacknose shark (*C. acronotus*) . Mine Dosay @-@ Akbulut 's 2008 study , based on ribosomal DNA , suggested that the closest relative of the finetooth shark is the smalltail shark (*C. porosus*) , and that the two species form a clade apart from other *Carcharhinus* species .

= Description =

The body of the finetooth shark is slender and streamlined . The snout is long and pointed , with the nares preceded by short , broadly triangular flaps of skin . The eyes are large and round , with nictitating membranes (protective third eyelids) . The mouth is broad with well @-@ defined furrows at the corners . Twelve to 15 tooth rows occur on either side of the upper jaw and 13 ? 14 tooth rows on either side of the lower jaw . Each tooth is small and needle @-@ like , with a narrow central cusp and smooth to minutely serrated edges . The five pairs of gill slits are long , measuring about half the length of the dorsal fin base .

The first dorsal fin is high and triangular with a pointed apex , originating forward of the free rear tips of the pectoral fins . The second dorsal fin is relatively large and originates over the anal fin . No ridge runs between the dorsal fins . The pectoral fins are small and sickle @-@ shaped , with pointed tips . The dermal denticles are small and overlapping , each bearing three horizontal ridges leading to marginal teeth . Living finetooth sharks are a distinctive dark bluish @-@ gray above and white below , with a faint pale stripe on the flanks and no prominent fin markings . Some individuals from Florida have green eyes . Males average 1 @.@ 6 m (5 @.@ 2 ft) in length and females 1

@. @ 7 m (5 @. @ 4 ft) ; the largest shark on record was 1 @. @ 9 m (6 @. @ 2 ft) long .

= = Distribution and habitat = =

In North American waters , the finetooth shark is common and found from North Carolina to the northern Gulf of Mexico , and very occasionally straying as far north as New York . In Central and South American waters , it is rare , but may occur more widely than presently known , having been reported off Trinidad and Guyana , infrequently from the Caribbean Sea , and off southern Brazil from São Paulo to Santa Catarina . The northwestern Atlantic , Gulf of Mexico , and South America populations are distinct , with little interchange between them . Old records exist of this species in the eastern Atlantic off Senegal and Guinea @-@ Bissau , but these likely represent misidentifications of spinner sharks (*C. brevipinna*) .

The finetooth shark is often found near beaches and in bays and estuaries . It inhabits extremely shallow waters , no deeper than 10 m (33 ft) in the summer and 20 m (66 ft) deep in the winter . Historically , it was known to venture into rivers in the Gulf Coastal Plain of Texas , though most of paths into this area are now blocked by dams . The northwestern Atlantic population of this species is strongly migratory : juveniles , followed by adults , arrive off South Carolina from late March to early May , when the water temperature rises above 20 ° C (68 ° F) . They remain until September to mid @-@ October , until the water temperature drops and they move south to Florida . The movements of other populations are unknown .

= = Biology and ecology = =

Adult and juvenile finetooth sharks form large schools . This energetic , fast @-@ moving predator feeds mainly on small bony fishes , often entering the surf zone during the day to hunt . The most important prey of this species in the northwestern Atlantic is the Atlantic menhaden (*Brevoortia tyrannus*) , with sharks of all ages off northwestern Florida eat almost nothing else . The menhaden are swallowed whole after the head has been removed . Other known prey species include spot croaker (*Leiostomus xanthurus*) , Spanish mackerel (*Scomberomorus maculatus*) , mullet (*Mugil spp .*) , shrimp , and in one case a juvenile Atlantic sharpnose shark (*Rhizoprionodon terraenovae*) , which may have been scavenged from the bycatch discard of a shrimp trawler . The finetooth shark may be preyed upon by larger sharks . Parasites documented from this species include the tapeworm *Triloculatum geeceaearelensis* , and unidentified species in the genera *Anthobothrium* , *Paraorygmatobothrium* , and *Phoreiobothrium* .

= = = Life history = = =

Like other requiem sharks , the finetooth shark is viviparous : the developing embryos are nourished by yolk for the first 15 weeks , after which the depleted yolk sac develops into a placental connection to the mother . Females produce litters of two to six pups every other year . In the northwestern Atlantic , mating occurs from early May to early June and the young are born at around the same time the following year after a 12 @-@ month gestation period . The males bite at the female to hold her for copulation . The semen exuded by the male congeals into a large , spongy mass inside the female 's uterus , in which the individual spermatozoa are embedded . Called a " spermatozeugma " , the function of this short @-@ lived structure is unknown . Newborn finetooth sharks measure 48 ? 64 cm (19 ? 25 in) long . Shallow bays and estuaries , such as Bull 's Bay in South Carolina , serve as critical nursery areas for newborns and juveniles .

Female finetooth sharks grow much more slowly and to a larger ultimate size than males . Individuals in the northwestern Atlantic population have a larger body size and reach sexual maturation later than those in the Gulf of Mexico population ; males in the two populations grow at similar rates , but northwestern Atlantic females grow more slowly than Gulf of Mexico females . In the northwestern Atlantic , males mature at a fork length (length from snout tip to caudal fin fork) of 99 cm (39 in) and females at 102 cm (40 in) , corresponding to ages of 5 and 6 years ,

respectively . In the Gulf of Mexico , males mature at a fork length of 94 cm (37 in) and females at 99 cm (39 in) , corresponding to ages of 4 and 5 years , respectively . The maximum lifespan has been estimated to be at least 9 years for males and 14 years for females .

= = Human interactions = =

The finetooth shark has never been implicated in an attack on humans . However , when caught , this shark thrashes and snaps at anything within range , and people have been bitten attempting to handle it . Finetooth sharks are used for human consumption fresh or dried and salted . Other than off the southeastern United States , this species is of little commercial importance : it is small and occurs in water too shallow for most commercial and recreational fisheries , and is generally too fast @-@ swimming to be caught by shrimp trawlers . Small numbers are taken incidentally by floating longlines and on hook @-@ and @-@ line . This species is susceptible to overfishing due to its low reproductive rate , and to habitat degradation due to its inshore habits .

Substantial numbers of finetooth sharks are caught in drift gillnets operated by the shark fishery off southeastern United States , which peaked in 1999 at about 117 tons landed . Stock assessments conducted in 2002 suggested that U.S. populations had not yet been overfished , but that the catch rate was unsustainable , whereas assessments conducted in 2007 concluded that catch rates did not exceed sustainable levels and that populations were stable . Fishing for this species in U.S. waters is regulated by the National Marine Fisheries Service 1993 Fisheries Management Plan for Atlantic and Gulf of Mexico sharks ; it is classified as a " small coastal shark " for the purposes of commercial quotas and recreational bag limits . As a result , the IUCN has assessed the finetooth shark as of Least Concern overall and off the U.S. and Mexico . Concern exists for this species in South America , where its numbers seem naturally low and it is potentially under heavy pressure by widespread , intensive coastal fisheries . However , the IUCN does not have sufficient data to assess its status in the region beyond Data Deficient .