

= Nervous shark =

The nervous shark (*Carcharhinus caudatus*) is a species of requiem shark , and part of the family Carcharhinidae , so named because of its timid behavior in regard to humans . It is common in shallow , coastal waters off northern Australia , Papua New Guinea , and the Solomon Islands . A small brownish or grayish shark typically measuring 1 @. @ 0 ? 1 @. @ 3 m (3 @. @ 3 ? 4 @. @ 3 ft) long , this species has a short , blunt snout , oval eyes , and a relatively large second dorsal fin . The leading margins of most fins are finely edged with black , and the lower caudal fin lobe is black @- @ tipped .

Small bony fishes are the main prey of the nervous shark , while crustaceans , molluscs , and snakes may also be eaten . It is viviparous , with the developing embryos nourished through a placental connection . The details of its life history seem to vary depending on latitude ? for example , the timing of the breeding season and the length of the gestation period . Females produce litters of one to six young either annually or biennially . The harmless nervous shark is caught incidentally by coastal gillnet fisheries and perhaps also by line and trawl fisheries . The International Union for Conservation of Nature (IUCN) lacks sufficient data to assess the conservation status of this species except in Australian waters , where its population seems healthy and has been listed under Least Concern .

= Taxonomy and phylogeny =

Australian ichthyologist Gilbert Percy Whitley originally described the nervous shark as a subspecies of *Galeolamna greyi* (a junior synonym of *Carcharhinus obscurus* , the dusky shark) , in a 1945 issue of the scientific journal *Australian Zoologist* . He gave it the name *cauda* , meaning " cautious " in Latin , because of its skittish demeanor when confronted by people . Later authors have recognized this shark as a distinct species , placed in the genus *Carcharhinus* . The type specimen consists of the preserved skin and teeth of a 92 cm (36 in) long female caught in Shark Bay , Western Australia .

Based on morphology , Jack Garrick suggested in 1982 that the nervous shark is closely related to the blacktip reef shark (*C. melanopterus*) . Leonard Compagno in 1988 tentatively grouped these two species with the blacknose shark (*C. acronotus*) , the copper shark (*C. brachyurus*) , the silky shark (*C. falciformis*) , and the night shark (*C. signatus*) . The close relationship between the nervous and blacktip reef sharks was upheld in a 1992 phylogenetic study by Shane Lavery , based on allozymes , and again in a 2011 study by Ximena Vélez @- @ Zuazoa and Ingi Agnarsson , based on nuclear and mitochondrial genes .

= Description =

The nervous shark has a rather stout , spindle @- @ shaped body and a short , broadly rounded snout . The anterior margin of each nostril is extended into a slender nipple @- @ shaped lobe . The moderately large eyes are horizontally oval in shape and equipped with nictitating membranes . The mouth lacks conspicuous furrows at the corners and contains 25 ? 30 upper and 23 ? 28 lower tooth rows . The upper teeth are narrow and angled , with coarsely serrated edges . The lower teeth are more slender and upright in shape , and have finer serrations . The five pairs of gill slits are medium in length .

The pectoral fins are moderately long , narrow , and pointed . The first dorsal fin originates over the free rear tips of the pectoral fins ; it is large and falcate (sickle @- @ shaped) with a pointed apex . The second dorsal fin is positioned opposite the anal fin and is relatively large and high . There is no ridge between the dorsal fins . A crescent @- @ shaped notch is present on the caudal peduncle just before the upper caudal fin origin . The caudal fin is asymmetrical , with a strong lower lobe and a longer upper lobe with a ventral notch near the tip . The dermal denticles are overlapping and bear three horizontal ridges (five in larger individuals) leading to marginal teeth . This species is bronze to gray above and white below , with a white stripe on the flank . A thin black line runs along the

leading margins of the dorsal fins , pectoral fins , and the upper caudal fin lobe , as well as the caudal fin trailing margin ; the lower caudal fin lobe and sometimes the pectoral fins are also tipped in black . The nervous shark typically reaches 1 @. @ 0 ? 1 @. @ 3 m (3 @. @ 3 ? 4 @. @ 3 ft) in length and may grow up to 1 @. @ 5 m (4 @. @ 9 ft) long . Females attain larger sizes than males .

= = Distribution and habitat = =

The nervous shark is found over continental and insular shelves off northern Australia from Shark Bay in the west to Moreton Bay in the east , as well as off Papua New Guinea and around the Solomon Islands . It is among the most common sharks in Darwin Harbor , the Gulf of Carpentaria , and Shark Bay . This species generally inhabits shallow inshore waters , to a depth of at least 45 m (148 ft) . It seems to particularly favor mangrove @-@ lined areas with sandy @-@ muddy bottoms and avoids areas with dense seagrass cover .

= = Biology and ecology = =

The diet of the nervous shark consists mainly of small teleost fishes (including silversides , smelt @-@ whittings , wrasses , and grunters) . Crustaceans (including prawns , crabs , and mantis shrimps) and molluscs (predominantly cephalopods but also bivalves and gastropods) constitute secondary food sources . This shark is also known to occasionally prey on the semiaquatic snakes *Cerberus rynchops* and *Fordonia leucobalia* . A known parasite of the nervous shark is the myxosporean *Kudoa carcharhini* .

Like other requiem sharks , the nervous shark is viviparous : once the embryos exhaust their initial supply of yolk , they are provisioned by the mother through a placental connection formed from the depleted yolk sac . Adult females have a single functional ovary , on the right , and two functional uteruses . The male bites at the sides of the female as a prelude to mating . After mating , the female stores the sperm for approximately four weeks prior to fertilization . In Darwin Harbor , mating occurs from January to March and birthing occurs in October and November following a gestation period of eight to nine months . In Shark Bay , mating occurs from late October to early November and birthing occurs around the same time the following year , following a gestation period of 11 months ; this slower development likely reflects the cooler temperatures of Shark Bay .

Females produce litters on an annual cycle in Darwin Harbor and on a biennial cycle in Shark Bay . The litter size ranges from one to six and is not correlated with the size of the female . The newborns are relatively large , measuring 35 ? 40 cm (14 ? 16 in) long , and are birthed in shallow nursery areas such as Herald Bight in Shark Bay . The juvenile growth rate is high for a shark ; males and females mature sexually at around 84 and 91 cm (33 and 36 in) , respectively , in Darwin Harbour , and 91 and 101 cm (36 and 40 in) , respectively , in Shark Bay . The age at maturity is around four years for males and six years for females ; the maximum lifespan is at least 12 years for males and 16 years for females .

= = Human interactions = =

Shy and difficult to approach , the nervous shark is harmless to humans . It is occasionally marketed for food . This species is susceptible to being caught incidentally in coastal gillnets , such as the barramundi (*Lates calcarifer*) gillnet fishery operating off northern Australia . It may also be caught on line gear and in prawn trawls . The Australian nervous shark population does not appear to be threatened by fishing activities , and there the International Union for Conservation of Nature (IUCN) has assessed it as Least Concern . No data on the impact of fishing are available elsewhere in its range , and thus the IUCN has listed it overall under Data Deficient .