

= Australian blacktip shark =

The Australian blacktip shark (*Carcharhinus tilstoni*) is a species of requiem shark , in the family Carcharhinidae , endemic to northern and eastern Australia . Favoring the upper and middle parts of the water column , it can be found from the intertidal zone to a depth of 50 m (160 ft) . Appearance @-@ wise this species is virtually identical to the common blacktip shark (*C. limbatus*) , from which it can be reliably distinguished only by its lower vertebra number and by genetic markers . Generally reaching 1 @. @ 5 ? 1 @. @ 8 m (4 @. @ 9 ? 5 @. @ 9 ft) in length , it is a fairly stout @-@ bodied , bronze @-@ colored shark with a long snout and black @-@ tipped fins .

Primarily piscivorous , the Australian blacktip shark forms large groups of similar size and sex that tend to remain within a local area . It exhibits vivipary , meaning that the unborn young are provisioned through a placental connection . There is a well @-@ defined annual reproductive cycle with mating occurring in February and March . Females bear one to six pups around January of the following year , after a 10 @-@ month gestation period . The Australian blacktip shark is among the sharks most commonly caught by northern Australian commercial fisheries . It is mainly valued for its meat , which is sold as " flake " . This species was an important catch of a Taiwanese gillnet fishery that operated from 1974 to 1986 , and of the Australian Northern Shark Fishery that continues to the present day . As current fishing levels are not thought to threaten this shark 's population , the International Union for Conservation of Nature (IUCN) has assessed it as Least Concern .

= Taxonomy and phylogeny =

The Australian blacktip shark was described by Australian ichthyologist Gilbert Percy Whitley in a 1950 issue of the scientific journal Western Australian Naturalist . He named it *Galeolamna pleurotaenia tilstoni* in honor of Richard Tilston , assistant surgeon at Port Essington , Northern Territory . The type specimen is a 1 @. @ 5 m (4 @. @ 9 ft) long female caught from Van Cloon Reef in Joseph Bonaparte Gulf . Later authors have regarded *Galeolamna* as a synonym of the genus *Carcharhinus* . This shark may also be referred to as blacktip whaler , Tilston 's whaler shark , and Whitley 's blacktip shark .

After Whitley 's initial description , *C. tilstoni* was generally regarded as synonymous with *C. limbatus* , the common blacktip shark . In the 1980s , additional morphological and life history data again favored the recognition of *C. tilstoni* as a separate species , which was eventually confirmed by allozyme studies performed by Shane Lavery and James Shaklee . Several molecular phylogenetic studies based on allozymes , mitochondrial DNA , and nuclear DNA have found that the Australian and common blacktip sharks form a closely related clade with the graceful shark (*C. amblyrhynchoides*) and the smoothtooth blacktip shark (*C. leiodon*) . The interrelationships between them have not been fully resolved , but available data suggest that *C. tilstoni* and *C. limbatus* are not the most closely related species within the clade despite their similarity .

= Description =

Physically , the Australian blacktip shark can only reliably be distinguished from the common blacktip shark by the number of vertebrae (174 ? 182 total , 84 ? 91 before the tail in *C. tilstoni* , 182 ? 203 total , 94 ? 102 before the tail in *C. limbatus*) . It has a moderately robust , spindle @-@ shaped body and a long , pointed snout . The anterior rims of the nostrils are slightly enlarged into low triangular flaps . The large , circular eyes are equipped with nictitating membranes . The furrows at the corners of the mouth are barely evident . There are 32 ? 35 upper and 29 ? 31 lower tooth rows ; each upper tooth has a slender , upright cusp and fine serrations that become coarser near the base , while the lower teeth are narrower and more finely serrated . The five pairs of gill slits are long .

The long and narrow pectoral fins are falcate (sickle @-@ shaped) with pointed tips . The large first dorsal fin is also falcate and originates over or slightly behind the rear of the pectoral fin bases .

The second dorsal fin is moderately tall and positioned about opposite the anal fin . There is no midline 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 roughly diamond @-@ shaped dermal denticles are placed closely together and slightly overlapping ; each bears five to seven (three in juveniles) horizontal ridges leading to marginal teeth . The Australian blacktip shark is bronze above (gray after death) and whitish below , with a pale stripe on the flanks . Some individuals have black tips on all fins , while others have unmarked pelvic and anal fins . It typically reaches 1 @. @ 5 ? 1 @. @ 8 m (4 @. @ 9 ? 5 @. @ 9 ft) long ; the maximum length and weight on record are 2 @. @ 0 m (6 @. @ 6 ft) and 52 kg (115 lb) .

= = Distribution and habitat = =

Inhabiting the continental shelf , the Australian blacktip shark is found from Thevenard Island in Western Australia to Sydney in New South Wales . Within its range , it co @-@ occurs with the common blacktip shark ; the ratio between *C. limbatus* and *C. tilstoni* was once thought to be 1 : 300 , but recent genetic studies have found it to be closer to 50 : 50 . This species has been reported from the intertidal zone to a depth of 150 m (490 ft) ; larger sharks tend to occur in deeper water . Though it occupies the entire water column , it is most common close to the surface or in midwater . Genetic data suggest Australian blacktip sharks across northern Australia are all members of a single population . Tagging studies have found this species mostly moves only short distances along the coastline and rarely enters offshore waters . However , some individuals have been recorded traveling longer distances , up to 1 @, @ 348 km (838 mi) .

= = Biology and ecology = =

The Australian blacktip shark is known to form large groups , segregated by size and sex . It preys mainly on teleost fishes , including ponyfishes , grunters , tunas , and herring . Cephalopods are a secondary food source , which are particularly important around April . This species also occasionally consumes smaller sharks , including snaggleteeth sharks (*Hemipristis pristis*) , spottail sharks (*C. sorrah*) , and sharpnose sharks (*Rhizoprionodon*) . Their diets shift with age : smaller individuals feed on proportionately more bottom @-@ dwelling fish , while larger individuals feed on proportionately more midwater fish and cephalopods . Documented parasites of this shark include the tapeworms *Fossobothrium perplexum* and *Platybothrium* sp . , and the copepod *Perissopus dentatus* .

Like other requiem sharks , the Australian blacktip shark is viviparous : once the embryos exhaust their yolk supply , the depleted yolk sac develops into a placental connection through which the mother provides sustenance . Females bear litters of one to six pups (average three) every year . Mating takes place in February and March , with the females storing the sperm until ovulation in March and April . After a gestation period of 10 months , the young are born around January of the following year . Near @-@ term females move into shallow , coastal nurseries , such as Cleveland Bay in northern Queensland , to give birth . Such nursery areas appear to be widespread , as newborns have been recorded throughout the range of the species . The newborns are relatively large , measuring about 60 cm (24 in) long . They grow rapidly in their first year , increasing in length by an average of 17 cm (6 @. @ 7 in) . The growth rate subsequently slows , averaging 8 ? 10 cm (3 @. @ 1 ? 3 @. @ 9 in) per year by age five . Both sexes attain sexual maturity at three to four years of age , at lengths of roughly 1 @. @ 1 and 1 @. @ 2 m (3 @. @ 6 and 3 @. @ 9 ft) for males and females , respectively . The maximum lifespan is estimated to be 20 years .

Hybrids between the Australian blacktip shark and the common blacktip shark , comprising both F1 and backcrossed individuals , have been discovered all along the eastern coast of Australia . Despite the widespread incidence of hybridization , there is no evidence that the two parental lineages are merging and the mechanisms preventing introgression are unclear . This is the first confirmed case of hybridization among cartilaginous fishes .

= = Human interactions = =

Along with the spottail shark , the Australian blacktip shark is one of the most economically important sharks off northern Australia . It was historically fished for its meat and fins by a Taiwanese gillnet fishery , which began operating off northern Australia in 1974 . The annual catch initially averaged around 25 @, @ 000 tons (live weight) , with approximately 70 % consisting of Australian blacktip sharks , spottail sharks , and longtail tuna (*Thunnus tonggol*) . Following the establishment of the Australian Fishing Zone (AFZ) in November 1979 , the Australian government progressively excluded Taiwanese gillnet vessels from large portions of Australian waters and imposed fishing quotas . The fishery eventually became uneconomical when Australia restricted gillnet lengths to 2 @. @ 5 km (1 @. @ 6 mi) in May 1986 , and Taiwanese vessels ceased fishing in Australian waters that year . At end of the fishery , Australian blacktip shark numbers were estimated to have been diminished by around 50 % . Given its relatively high reproductive rate , its population has likely since recovered .

Since 1980 , the Australian blacktip shark has also been targeted by Australian commercial gillnetters and longliners in the Northern Shark Fishery . It is additionally caught incidentally by other commercial fisheries targeting bony fishes or prawns . The contemporary northern Australian shark catch is estimated to be between 100 and 900 tons (live weight) annually , of which most are Australian blacktip and spottail sharks . The meat of this species is sold in Australia as " flake " , though it may contain high concentrations of mercury . The fins are exported to Asia , while the cartilage , liver oil , and skin may also be used . Since fishing pressure on the Australian blacktip shark is now much lower than historical levels , the International Union for Conservation of Nature (IUCN) has listed it under Least Concern . However , of potential concern are Indonesian fishers in the Arafura Sea , who are increasingly trespassing into the AFZ .