

Carcharhinus longimanus (Oceanic Whitetip Shark)

Family: Carcharhinidae (Requiem Sharks)

Order: Carcharhiniformes (Ground Sharks)

Class: Chondrichthyes (Cartilaginous Fish)



Fig. 1. Oceanic whitetip shark, *Carcharhinus longimanus*.

[<http://www.sportdiver.com/keywords/marine-life/shark-month-oceanic-whitetip>, downloaded 19 February 2016]

TRAITS. *Carcharhinus longimanus*, also known as the oceanic whitetip shark, has a body with a heavy build. It is relatively short, with a round blunt snout along with powerful jaws (Fig. 1). The shark's dorsal fins are of a generous size and are rounded in shape whilst the fins of the pectoral region are paddle shaped, lengthy and broad (Arkive, 2008). The organism inherited its common name due to the white spotting found at the tip of its fins (FishBase, 2006). The body is flattened, with mildly humpback appearance, the shark maybe brown, bluish or grey dorsally and white or pale yellow ventrally. The colour varies with its geographic location (Babcock et al.,

2008). Both sexes can grow up to 2m and weigh up to 170kg (Arkive, 2008). Teeth are a main characteristic of these sharks. The teeth of the lower jaw have thin serrated tips that are triangular in shape. There are 13-15 teeth on either side of the upper jaw. Denticles (small tooth-like bones in the skin) lie flat and have approximately 5-7 ridges.

DISTRIBUTION. Native to Trinidad and Tobago (IUCN, 2007). This species of shark is widespread in the Atlantic and Pacific Oceans (Fig. 2). This tropical, epipelagic (open-water) fish is found within 150m of the surface of the water (Babcock et al., 2008). It ranges across tropical and subtropical oceans between 30°N and 35°S, including the Gulf of Mexico and the Caribbean Sea.

HABITAT AND ACTIVITY. *C. longimanus* is found offshore in depths of 0150m. Around oceanic islands it may be found in shallow waters near land. There is a direct proportional relationship between the distance from the land and the abundance of the shark; that is, as distance increases, so does the number of sharks. It is most abundant in waters above 21°C (FLMNH, 2016). It shows same level of activity both day and night time. The shark is known to be slow moving but goes into a feeding frenzy in the presence of food. It is known to swim in open waters, near the surface and shows interaction with remoras, dolphin fishes as well as pilot fishes, swimming closely with them (Fig. 3).

FOOD AND FEEDING. *C. longimanus* belongs to the third tropic level of organisms, the carnivores, feeding on animal sources of food. Diet consists mainly bony fish including tunas, white marlin, dolphin fish, oar fish, and cephalopods (IUCN, 2007). They also feed to a lesser extent on seabirds, stingrays, marine mammals and occasionally garbage. The shark is observed to be bold and persistent (Sharks, 2014) when inspecting a potential food source. Its docile behaviour often turns into a hostile hunter for prey. In the presence of competition for food, the shark becomes fast and aggressive, dominating its opponents, usually different species, for prey (Sharks, 2014). Whilst feeding the shark opens its mouth, ingesting food whole without chewing (Fig. 4). It moves swiftly through schools of fish with open mouth, consuming as much food as it can until it has had its fill.

POPULATION ECOLOGY. *C. longimanus* is one of three species of oceanic sharks that is most abundant oceans as well as one of the largest marine animals. Its longevity is up to 15 years (NMFS, 2014). Its population dynamics and structure is yet unknown (IUCN, 2007). It is mostly solitary. It usually does not school, however they tend to form aggregate around food sources (Babcock et al, 2008). Research conducted by the Japanese research and training tuna longiners, stated that oceanic whitetip sharks are most abundant in the Pacific Ocean in the belt between 10°N and 10°S. The distribution is dependent on size and sex. The larger sharks are usually spotted in deeper waters than the smaller sharks. They display geographic and sexual segregation. There is no congregation around land masses. It has a high migratory nature, and is listed by the United Nations Law of the Sea as a Highly Migratory Species (Burgess et al., 2009). The population of *C. longimanus* is seen to be decreasing across the oceans. Data recorded by the US pelagic long line logbook during the period of 1992-2000 showed an estimated 70% decline within the western and central region of the Atlantic Ocean.

REPRODUCTION. This shark practises internal fertilization. Mating occurs during the early summer period (Arkive, 2008). The males secure a female via physical contact. They bite the gill, the pectoral fin even the head of the female sharks. Males have modified fins known as claspers that are inserted into the female during copulation in order to transfer sperm into her reproductive tract (Safinacenter, 2013). Water-filled sacs below the skin of males are used as a hydraulic system to propel the sperm as far up the tract as possible. After insertion the spurs of the claspers anchors them into place. The pair of sharks stop swimming and the pair sinks to the bottom of the ocean floor. After mating the sharks experience physical exhaustion. The gestation period is usually 10-12 months (IUCN, 2007), and birth is given to 1-15 pups (Arkive, 2008) per litter. This however is dependent on the size of the mother (FLMNH, 2016). Development of the pups is viviparous. The embryos of the sharks are attached to the mother's uterine wall (Bigelow and Schroeder, 1998). Through the placenta, the young are nourished during the gestation period. Pups are 60-65cm long at birth (Sharks, 2014).

BEHAVIOUR. The shark usually swims slowly over miles of water, searching for food. The shark is known to exhibit dog-like curiosity when its interest is piqued (Wikipedia, 2015). Movement is increased when food source is sighted. Prey are approached slowly, and cautiously but they stay ready to attack. If the shark feels threatened, it will attempt to attack. In circumstances where it may be fended off, the shark will return, circle, and approach again (Sharks, 2014). It is a stubborn, competitive and opportunistic predator (Wikipedia, 2015).

APPLIED ECOLOGY. Due to the decreasing population of the species, it is currently listed as a vulnerable species by the World Conservation Union (IUCN). They are caught abundantly in almost every place that they occur, especially in pelagic long line fisheries and drift net fisheries (IUCN, 2007). Strasburg (1957) stated that *C. longimanus* made up 29% of the quantity of sharks caught in exploratory tuna longline fishing in the Pacific Ocean. Its fins carry a value of US\$20-40 per pound in international fin trade (NMFS, 2014). The only conservation known for the species is the multispecies pelagic shark quota for US Atlantic Waters (IUCN, 2007). Since it is listed under appendix II of CITES, export of its fin require license to ensure that the sharks were legally acquired. The fishing pressure on *C. longimanus* should be significantly reduced, which can be accomplished through a reduction in catch limits (IUCN, 2007). The International Plan of Action for Conservation and Management of Sharks (IPOA-Sharks) suggested that Regional Fisheries Organizations (RFO) conduct well organised evaluations on fisheries. They also suggested that states should work together in developing a shark management plans (IUCN, 2007). Though these suggestions were made, no practical efforts have been made towards conservation.

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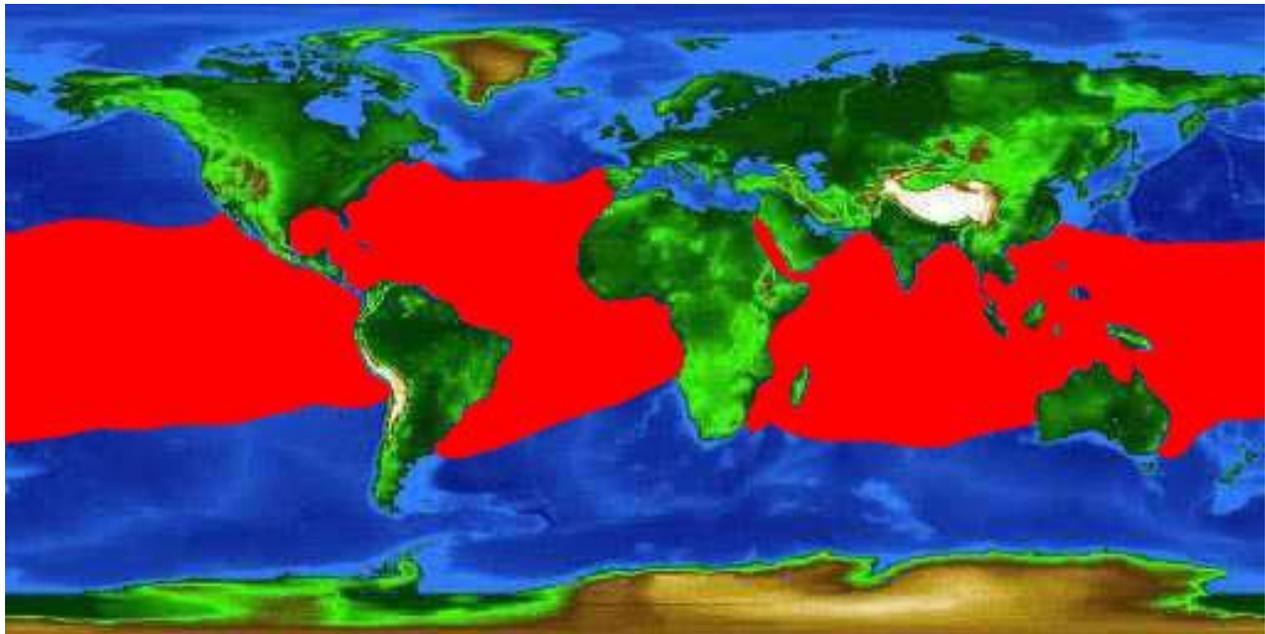


Fig. 2. Oceanic whitetip shark world distribution.

[flmnh.ufl.edu/fish/discover/species-profiles/carcharhinus-longimanus, downloaded 25 February 2016]



Fig. 3. Oceanic whitetip shark swimming with a school of fish.

[<http://voices.nationalgeographic.com/2014/01/30/shark-tagging-tracking-separating-fact-from-fiction/>], downloaded 27 February 2016]



Fig. 4. Oceanic whitetip shark feeding.

[<http://www.arkive.org/oceanic-whitetip-shark/carcharhinus-longimanus/image-G22921.html>], downloaded 27 February 2016]

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