

White shark fact sheet

Scientific name: *Carcharodon carcharias*

Common names: white pointer, great white shark

Maximum size: females estimated to about 7 m total length (largest reliably measured 6.4 m), males to 6 m; reports of larger (9-11 m) white sharks are impossible to verify; maximum accurately recorded weight 2500 kg.

Size at birth: 109-165 cm

Size at maturity: males 3.5-4.1 m; females 4.2-5.2 m

Age and growth: age estimated from rings on vertebrae; complicated by small sample sizes and few samples from large specimens; maximum age unknown but likely to be between 30-40 yrs; female age at maturity c. 15 yrs, male age at maturity 7-9 yrs; maximum estimated ages for 5 females between 4.9 – 5.7 m total length range from 14 – 23 yrs.

Litter size: 3-14, usually less than 10

Gestation period: estimated to be c. 18 months but not known with any certainty

Distribution: globally distributed in temperate and tropical waters, including the Mediterranean Sea. Distribution in New Zealand waters is from the northern limit of the Exclusive Economic Zone to Campbell Island.

Population Status: Available data on total population numbers for the white shark is extremely limited. As commercial fishers do not target white sharks, information on the volume of catches and landings is poor. It appears to be relatively scarce compared to most other widely distributed species and there is considerable anecdotal evidence from game fishing and beach meshing statistics from around the world to demonstrate that the population is in decline.

Habitat: Little is known of habitat use in New Zealand waters. Juveniles and adults occur in shallow coastal waters, including large harbours and estuaries. Sub-adults and adults also occur in the open ocean, as well as around offshore islands and banks.

Migration: Largely unknown. Genetic studies and a single tag return from Ninety Mile Beach indicate movement between New Zealand and Australia, although the frequency of these movements is unknown. Preliminary results from a satellite tagging study indicate large white sharks make long distance movements between the Chatham Islands and islands of the southwest Pacific (e.g. New Caledonia and Vanuatu). Although likely, return migration has not been demonstrated.

Ecology: White sharks are apex predators and may play an important role in controlling the populations of important prey species. Their diet in New Zealand waters includes bony fishes, small sharks, stingrays, eagle rays, blue penguins, New Zealand fur seal,

New Zealand sea lion, southern elephant seal, leopard seal, common dolphin, Hector's dolphin and blubber scavenged from whale carcasses.

Threats: Globally, the major impacts on white shark populations are largely a result of human actions including: decline in the abundance of its prey, commercial and sports fisheries for trophies, degradation of the shark's habitat, and incidental catch of the species in commercial and artisanal fisheries.

Because white sharks, though generally rare, appear to form local populations, the species is highly vulnerable to over-exploitation. Evidence suggests they can easily be exploited to the point of extinction, even where relatively few are regularly removed from an environment. Inadequate population data means that it is almost impossible to know what percentage of the shark population is being killed, and what chances it has to recover from these losses.

Fisheries: Prohibited commercial target species in New Zealand but may be landed as bycatch. Usually taken in coastal set net and line fisheries. Landed for meat (small juveniles), fins and jaws and teeth (as trophies and for jewellery). The best estimates of commercial catch range between 4-18 individuals (0.5-6.3 tonnes) landed annually, however this is almost certainly an underestimate. Most of the non-commercial landings reported are of accidental catches in set nets. Very low numbers are landed by sport fishers.

Coastal Activity: Increasing human population in coastal areas may lead to degradation of important inshore feeding and reproduction habitat for white sharks. The proximity of white shark habitat to human populations further increases the chances of sharks being killed by recreational fishers or as a by-catch..

Risk to humans: The species is known to actively investigate human behaviour. They are bold and inquisitive in their approach to vessels and fishing gear thus they are potentially dangerous. There have been 9 documented non-fatal attacks on divers (6), surfers (1) and kayakers (2) in New Zealand since 1990. Several fatal attacks on swimmers and a free-diver occurred off north Taranaki and Dunedin in the 1960s. Free-divers working near seal colonies appear to be at greatest risk of attack.

Trade: Direct pressure on white shark populations comes from their being targeted for their teeth, jaws and fins. White shark teeth and jaws have significant economic value. Small jaws may be sold for as much as US\$12,000, and individual teeth from small sharks for US\$600

Conservation status: No way of estimating population size or trends in New Zealand. Assessed as being in gradual decline in New Zealand waters based upon known life history parameters and documented declines elsewhere. Protected in Malta, United States, South Africa and Australia. Listed in Appendix I and II of the Convention on Migratory Species (CMS) and Appendix II of the International Convention on Trade in Endangered Species (CITES).