

White Shark – *Carcharodon carcharias*

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Figure 1: A White Shark (Photo: Jayne Jenkins)

Introduction

The White Shark, also commonly known as the Great White Shark or White Pointer, has been recorded from temperate waters of all oceans, including the length of the NSW coast.

As an apex predator (at the top of the food chain), the White Shark plays an important role in marine ecosystems. However, scientific evidence suggests that their numbers have significantly declined over the last few decades. Their life history characteristics such as low reproductive rate, natural rarity and low natural mortality make the species highly vulnerable to decline with slow recovery potential.

Since the late 1990s, the White Shark has been fully protected in Australia under Commonwealth and state legislation and is also now listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II.

In NSW, the White Shark has been listed as a **vulnerable species** since 1999. There are heavy penalties for harming, possessing, buying or selling them, or for harming their habitat (see 'Legal Implications').

Description

White Sharks have a stout, torpedo-shaped body, coloured blue to grey-brown on their upper surface with a white belly. They have a relatively short and bluntly pointed snout. The mouth contains large, serrated and triangular teeth. The second dorsal and anal fins are very small and the tail is crescent-shaped.

White Sharks are occasionally mistaken for Mako Sharks, but the Mako Shark's upper body is blue and they have long, slender and pointed teeth.



Figure 2: A White Shark (Photo: Jayne Jenkins)

Habitat and Ecology

- White Sharks are typically found from inshore habitats (e.g. islands, rocky reefs and shallow coastal bays) to the outer continental shelf and slope areas. Within Australian waters, the majority of recorded White Shark movements occur between the coast and the 100 metre depth contour; however both adults and juveniles have been recorded diving to depths of over 1,200 m.
- Individuals may travel long distances in a relatively short time, but can remain in the same area for weeks or even months. In NSW, the Stockton Beach/Hawks Nest area has been identified as a primary residency region for juvenile White Sharks.
- White Sharks live for 60 years or more. Males mature at about 360 – 380 cm and 7-9 years; and females at about 450 – 500 cm and 12-17 years.
- Females produce few pups (7-9), with a gestation period of 18 months and a 3-year reproductive cycle. Pups measure around 130 cm at birth and are fully developed and independent.
- White Sharks can grow to around 6 metres in length and up to 3,000 kg, although there are unconfirmed reports of individuals up to 7 metres long.
- Juveniles mainly feed on fish and other sharks and rays, while adults feed on fish, other sharks and rays, marine mammals, squid, crustaceans and seabirds.

Why is the White Shark threatened?

- Mortality related to accidental (bycatch) or illegal (targeted) fishing by commercial and recreational fisheries.
- Illegal trade in White Shark products.
- Habitat modification (overfishing) and climate change (including changes in sea temperature, ocean currents and acidification).
- Coastal habitat degradation and anthropogenic activities along the coast.
- Mortality related to shark control activities (beach meshing).
- Targeting by game-fishers prior to their protection.
- White Sharks have a very low potential for population recovery due to their low reproductive rate, late maturation, long lifespan and low natural mortality.

Conservation and recovery actions

- Educate fishers on the protected status of White Sharks and how to identify them from other shark species.
- Maintain bans on taking White Sharks in NSW and Commonwealth waters.
- Monitor the bycatch and mortality of White Shark interactions in relevant fisheries.
- Develop and implement a monitoring program to assess population trends and dynamics.

- Implement the Commonwealth Government's Recovery Plan for the White Shark.
- Continue to evaluate alternatives to beach meshing, including the use of non-lethal methods or alternative strategies.
- Report any sightings of the species via the NSW DPI online form:
www.dpi.nsw.gov.au/fisheries/species-protection/report-it
- A full list of strategies to be adopted for promoting the recovery of the White Shark is set out in the NSW DPI Priorities Action Statement:
www.dpi.nsw.gov.au/fisheries/species-protection

Legal implications

It is illegal to catch and keep, buy, sell, possess or harm White Sharks (or any other threatened species in NSW) without a specific permit, licence or other appropriate approval, and significant penalties apply. For vulnerable species, these penalties can include fines of up to \$55,000 and up to 1 year in prison.

There can also be significant penalties for causing damage to the habitat of a threatened species without approval.

The impacts of developments or activities that require consent or approval in accordance with the *Environmental Planning and Assessment Act 1979* must be assessed and considered by consent or determining authorities. Where such actions are likely to result in significant impact on a threatened species or its habitat, a detailed species impact statement must be prepared.

Strategies to be adopted for promoting the recovery of the White Shark must be set out in the NSW DPI Priorities Action Statement.

A recovery plan may be prepared in accordance with the provisions of the *Fisheries Management Act 1994* to promote the recovery of the species to a position of viability in nature.

Bibliography and further reading

Blower, D. C. et al. (2012) Population genetics of Australian white sharks reveals fine-scale spatial structure, transoceanic dispersal events and low effective population sizes. *Marine Ecology Progress Series* **455**: 229–244.

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Fisheries Scientific Committee (1999) *Carcharodon carcharias* - Great White Shark. Recommendation.
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Last, P. R., & Stevens, J. D. (2009) *Sharks and Rays of Australia* (Second Edition). CSIRO Publishing, Collingwood, Victoria.

For further information

See the NSW DPI website: www.dpi.nsw.gov.au

Contact the NSW DPI Threatened Species Unit:
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Figure 3: A White Shark swimming near the sea bed (Photo: Jayne Jenkins)

