

White Shark, *Carcharodon carcharias*

Report Card assessment	Recovering		
IUCN Red List Australian Assessment	Vulnerable	IUCN Red List Global Assessment	Vulnerable
Global Assessors	Rigby, C.L., Barreto, R., Carlson, J., Fernando, D., Fordham, S., Francis, M.P., Herman, K., Jabado, R.W., Liu, K.M., Lowe, C.G, Marshall, A., Pacoureaux, N., Romanov, E., Sherley, R.B. & Winker, H.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T. & Simpfendorfer, C.A. (Shark Action Plan)		
Report Card Remarks	Historic declines but now protected and with a Recovery Plan in place; listed on EPBC Act (Vulnerable), CITES Appendix II, and CMS Appendices I & II.		

Summary

The White Shark is widely distributed throughout tropical and temperate waters. It is known to move long distances along coastlines and across the open ocean. It is fairly uncommon throughout much of its distribution but is commonly recorded in South Africa, California, Australia, and northeast United States. The species is taken as incidental catch in commercial and recreational fisheries. It is targeted in shark control programmes in Australia and South Africa with data indicating



long term declines have occurred. The teeth, jaws and fins are highly prized. The White Shark has a low reproductive rate which limits its ability to recover from exploitation. The White Shark is currently protected in Australia (listed as Vulnerable and Migratory on EPBC Act), New Zealand, South Africa, USA, Mediterranean and European countries and many small Island States. Australia has a Recovery Plan in place. Genetic techniques show the eastern stock currently has about 750 adults, while the western stock has ~1500 adults. Although historically significant population declines occurred, it is now considered to be stable but remain at relatively low levels. Therefore, the White Shark is assessed as globally Vulnerable (IUCN) and in Australia as Vulnerable (IUCN) (Kyne et al. 2021) and Recovering (SAFS), with actions underway to more accurately assess the population trend. The species is listed on EPBC Act (Vulnerable), CITES Appendix II, and CMS Appendices I & II.

Distribution

The White Shark is cosmopolitan throughout much of the ocean with a preference for temperate waters (Compagno 2001). It is concentrated in coastal and pelagic shelf waters but is also found in the open ocean. It probably occurs throughout Australian waters but is more common in the south, from North West Cape (Western Australia), across southern Australia and north to central Queensland (Last

and Stevens 2009, DoE 2013). There are known linkages between White Sharks that occur in Australian waters and New Zealand and South Africa (Bonfil et al. 2005, Francis et al. 2015).

Stock structure and status

Genetic evidence suggests that there are separate populations around the world, despite the White Shark being highly mobile (Andreotti et al. 2016a). Two stocks are recognised in Australian waters – an east coast stock that rarely moves west of Bass Strait, and a western stock that occurs to the west of Bass Strait (Blower et al. 2012). This stock structure is supported by both genetic and movement data. The east coast stock includes animals that move between Australia and New Zealand (Francis et al. 2015), and the west coast stock includes animals that move as far as South Africa (Bonfil et al. 2005). Recent application of close-kin mark recapture analysis to genetic data have provided useful insights into the population size of Great White Sharks (Bruce et al. 2018). Off the east coast, numbers of adults were estimated to be ~750 and a total population size of >2000. For the western stock, the adult population size was estimated to be ~1500, but no estimate of total population size was available. Data from the NSW and Queensland shark control programs suggest that historically the east coast stock had declined by ~90% before potentially stabilising following national protection. However, these estimates are now considered to be over-estimates and while the population declined considerably it was not to this extent. There is less data on the historic trend in the western stock and it may not have declined as much as the eastern stock. There is limited evidence that the species has recovered from these declines. Australia has a National Recovery Plan in place that aims to halt the decline and support the recovery of the White Shark in Australian waters with actions identified to more accurately assess population trends (DoE 2013).

Fisheries

White Sharks are targeted as a sports fishing trophy and in shark control programs in South Africa and Australia (Compagno 2001). The teeth, jaw sets and fins are highly prized (Ebert et al. 2013). It has a relatively low intrinsic rebound potential that limits its ability to recover from exploitation (Smith et al. 1998). The majority of catches worldwide are through incidental catch in recreational fisheries and commercial fisheries operating longlines, setlines, gillnets, trawls and other gear. The overall, long-term impact of these causes of mortality upon regional populations is probably detrimental. The White Shark is also currently protected in New Zealand, South Africa, USA, Mediterranean and European countries and many small Island States (Ebert et al. 2013). Exemptions are made for shark control programmes. The White Shark is also protected through international agreements, that is, the Convention on International Trade in Endangered Species (CITES) Appendix II and Convention on Conservation of Migratory Species (CMS) Appendices I and II.

Habitat and biology

The White Shark prefers temperate coastal and shelf waters and occurs from the surface to depths of 1,300 m (Last and Stevens 2009, Ebert et al. 2013). It is most commonly observed in aggregations near rocky reefs around pinniped colonies (Ebert et al. 2013). Maximum size is around 600 cm total length (TL) possibly up to 640 cm TL (Compagno 2001). Maximum age is estimated to be 30–44 years (Natanson and Skomal 2015, Christiansen et al. 2016). Reported litters sizes are 2–17, though the maximum number of confirmed pups is 10 (Francis 1996). It has a long gestation estimated up to 18 months (Mollet et al. 2000) and it may only reproduce once every three years (Last and Stevens 2009).

Longevity and maximum size	Longevity: estimated 30–44 years Max size: 600 cm TL, possibly 640 cm TL
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Age and/or size at maturity (50%)

Males: 7–9 years, 360–380 cm TL

Females: 12–17 years, ~450–500 cm TL

CAAB Code: 37 010003

Link to IUCN Page: <https://www.iucnredlist.org/species/3855/2878674>

Link to page at Shark References: <http://shark-references.com/species/view/Carcharodon-carcharias>

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