

Fossil Shark, *Hemipristis elongata*

Report Card assessment	Sustainable		
IUCN Red List Australian Assessment	Least Concern	IUCN Red List Global Assessment	Vulnerable
Assessors	White, W.T. & Simpfendorfer, C.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T. & Simpfendorfer, C.A. (Shark Action Plan)		
Report Card Remarks	Low catches in managed fisheries in Australia.		

Summary

The Fossil Shark is a medium-sized shark commonly landed in coastal fisheries throughout its shallow tropical Indo-West Pacific range. The flesh is considered of very high quality, as are the fins and liver. The species grows and matures rapidly, suggesting a relatively high ability to sustain fishing. Despite this, the intensive and largely unmanaged net and trawl fisheries that occur throughout most of its range (with the exception of Australia) fish heavily in its known habitat and are likely to catch

this species when present. Many shark stocks in the region are known to be over-exploited, with catches declining, and market surveys indicate that this species has declined in areas where it was once considered common. Based on global declines it is assessed globally as Vulnerable (IUCN). In Australian waters, there are small catches of the species in managed fisheries across northern Australia. Therefore, the species is assessed as Least Concern (IUCN) (Kyne et al. 2021) and Sustainable (SAFS).



Distribution

The Fossil Shark is widespread across the Indo-West Pacific, including southeast Africa and the Red Sea (Last and Stevens 2009, Jaiteh and Momigliano 2015). In Australian waters, the species is known from the northern half of the country from Bunbury (Western Australia) to Moreton Bay (Queensland) (Last and Stevens 2009, Taylor and Bennett 2013).

Stock structure and status

The Fossil Shark appears to be naturally rare in most places where it occurs. There is currently no information on population size, structure, or trend for the species.

Fisheries

The species is a minor component of the northern Australian gillnet and trawl (prawn and fish) fisheries (Stobutzki et al. 2002, Zhou and Griffiths 2008). The take in the Australian Northern Prawn Fishery is small, and estimates of fishing mortality indicate that the level of take is sufficiently low to ensure sustainability (Zhou and Griffiths 2008). The species is also landed in northern gillnet fisheries, including in Queensland (East Coast Inshore Finfish Fishery, Gulf of Carpentaria Inshore Finfish Fishery), and Northern Territory (Offshore Net and Line Fishery). In all of these gillnet fisheries the numbers caught are small (e.g., Harry et al. 2011) and the overall shark catches controlled by Total Allowable Catches and other management controls. The Fossil Shark is also landed in gillnet and trawl fisheries in Indonesia (W. White unpublished data) and presumably in other countries within its range. In the Gulf of Thailand this species was once considered common, however, surveys in recent years have observed very few specimens (L.J.V Compagno, pers. comm.). Similarly, in the waters of the South China Sea (including Hong Kong and parts of mainland China) this species has been recorded in historic surveys, but has been absent from all recent surveys (Lam and Sadovy de Mitcheson 2010) indicating that it may have become locally extinct in some parts of Southeast Asia.

Habitat and biology

The Fossil Shark occurs on the continental shelf to a depth of 130 m (Last and Stevens 2009). Maximum size is 240 cm total length (TL) and maximum age 15 years (Smart et al. 2013). Males mature at approximately 110 cm TL and females at 120 cm TL with maturity reached in 2–3 years for both sexes (Last and Stevens 2009, Smart et al. 2013).

Longevity and maximum size	Longevity: estimated 15 years Max size: 240 cm TL
Age and/or size at maturity (50%)	Males: 2–3 years, 110 cm TL Females: 2–3 years, 120 cm TL

CAAB Code: 37 018011

Link to IUCN Page: <https://www.iucnredlist.org/species/41874/68625034>

Link to page at Shark References: <http://www.shark-references.com/species/view/Hemipristis-elongata>

References

- Blaber, S.J.M., Dichmont, C.M., White, W., Buckworth, R., Sadiyah, L., Iskandar, B., Nurhakim, S., Pillans, R., Andamari, R., Dharmadi, and Fahmi. 2009. Elasmobranchs in southern Indonesian fisheries: the fisheries, the status of the stocks and management options. *Reviews in Fish Biology and Fisheries* 19(3): 367–391.
- Dulvy, N.K., Fowler, S.L., Musick, J.A., Cavanagh, R.D., Kyne, P.M., Harrison, L.R., Carlson, J.K., Davidson, L.N.K., Fordham, S.V., Francis, M.P., Pollock, C.M., Simpfendorfer, C.A., Burgess, G.H., Carpenter, K.E., Compagno, L.J.V., Ebert, D.A., Gibson, C., Heupel, M.R., Livingstone, S.R., Sanciangco, J.C., Stevens, J.D., Valenti, S. and White, W.T. 2014. Extinction risk and conservation of the world's sharks and rays. *eLife* 3: e00590.
- Harry, A.V., Tobin, A.J., Simpfendorfer, C.A., Welch, D.J., Mapleston, A., White, J., Williams, A.J., & Stapley, J. 2011. Evaluating catch and mitigating risk in a multispecies, tropical, inshore shark fishery within the Great Barrier Reef World Heritage Area. *Marine and Freshwater Research*, 62(6), 710–721.
- Jaiteh, V.F. and Momigliano, P. 2015. New distribution records of the Vulnerable fossil shark *Hemipristis elongata* from eastern Indonesia call for improved fisheries management. *Marine Biodiversity Records* 8(e79).
- Kyne, P.M., Heupel, M.R., White, W.T. and Simpfendorfer, C.A. 2021. *The Action Plan for Australian Sharks and Rays 2021*. National Environmental Science Program, Marine Biodiversity Hub, Hobart
- Lam, V.Y.Y., and Sadovy de Mitcheson, Y. 2011. The sharks of South East Asia – unknown, unmonitored and unmanaged. *Fish and Fisheries* 12(1): 51–74.
- Last, P.R. and Stevens, J.D. 2009. *Sharks and Rays of Australia*. Second Edition. CSIRO Publishing, Collingwood.
- Smart, J. J., Harry, A. V., Tobin, A. J. and Simpfendorfer, C. A. 2013. Overcoming the constraints of low sample sizes to produce age and growth data for rare or threatened sharks. *Aquatic Conservation: Marine and Freshwater Ecosystems* 23: 124–134.

- Stobutzki, I.C., Miller, M.J., Heales, D.S. and Brewer, D.T. 2002. Sustainability of elasmobranches caught as bycatch in a tropical prawn (shrimp) trawl fishery. *Fishery Bulletin* 100: 800-821.
- Taylor, S., and Bennett, M. (2013). Size, sex and seasonal patterns in the assemblage of Carcharhiniformes in a sub-tropical bay. *Journal of Fish Biology* 82, 228–241.
- Zhou, S. and Griffiths, S.P. 2008. Sustainability Assessment for Fishing Effects (SAFE): a new quantitative ecological risk assessment method and its application to elasmobranch bycatch in an Australian trawl fishery. *Fisheries Research* 91: 56–68.