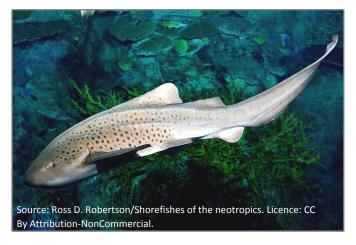
Zebra Shark, Stegostoma fasciatum

Report Card assessment	Sustainable		
IUCN Red List Australian Assessment	Least Concern	IUCN Red List Global Assessment	Endangered
Assessors	Dudgeon, C.L., Simpfendorfer, C. & Pillans, R.D.		
Report Card Remarks	In Australia, minimal impacts from fishing; elsewhere high fishing pressure and habitat loss		

Summary

The Zebra Shark is a large bodied, distinctly patterned shark that is broadly distributed throughout Australia and parts of Southeast Asia. There are two distinct subpopulations: Indian Ocean-Southeast Asian and Eastern Indonesian-Oceania (which includes Australia). The latter subpopulation has regions where there is minimal exploitation (e.g. Australia) and regions of greater fishing pressure where it is taken as bycatch and there are habitat threats. Extensive



fishing occurs in Eastern Indonesian waters and trawl fisheries in the Arafura Sea pose a threat to the species. Therefore, the Eastern Indonesia-Oceania subpopulation is assessed as Near Threatened (IUCN). The greatest levels of exploitation and ongoing threats for this species occurs in Southeast Asia, particularly Thailand through to Indonesia and the Indian Ocean-Southeast Asian subpopulation, and the overall global population, are both considered Endangered (IUCN). In Australia, there are minimal impacts from fishing. Therefore, in Australia the species is considered Least Concern (IUCN) and Sustainable (SAFS).

Distribution

The Zebra Shark is distributed throughout insular and continental shelf waters of the western Pacific and Indian Oceans (Compagno 2001). In Australia, it is found throughout northern Australia, from Port Gregory (Western Australia) to Montague Island (New South Wales) (Last and Stevens 2009).

Stock structure and status

Population genetic analysis supports two subpopulations for the Zebra Shark: Indian Ocean-Southeast Asian and Eastern Indonesian-Oceania (Dudgeon et al. 2009). The Eastern Indonesian-Oceania subpopulation is found in Australia, Indonesia, Papua New Guinea and other Pacific island countries. The Eastern Indonesian-Oceania subpopulation is likely protected from substantial declines within much of its distribution in Australia where threats are minimal. Declines have occurred in Indonesian waters where fishing pressure is high.

Fisheries

The Zebra Shark is susceptible to capture in a wide range of inshore fisheries and although there is no direct evidence of population decline in the Indo-West Pacific, market surveys suggest this species is much less common than it used to be (L.J.V Compagno and W. White, pers. comms. 2003, Pillans and Simpfendorfer 2003). Within Australia are minimal interactions with fisheries. There are no target fisheries and small numbers are captured as bycatch in the Queensland East Coast Inshore Finfish Fishery (Harry et al. 2011), the Australia Northern Prawn Fishery (Zhou and Griffiths 2008), the Pilbara Trawl fishery (Western Australia Department of Fisheries 2010) and in nets deployed by the Queensland Shark Control program (Sumpton et al. 2011). Records for these fisheries indicate a high 80–100% post-release survival rate of Zebra Sharks.

Habitat and biology

Zebra Sharks are found in tropical and subtropical waters associated with coral and rocky reef habitats occurring to depths of at least 62 m. The species is often observed resting on the bottom. Juveniles are a distinctly different colouration to adults, with black and white banding and spots. Maximum size is at least 246 cm total length (TL) (Dudgeon et al. 2008). Maximum recorded age is greater than 28 years in captivity (Thomas, pers. comm. 2015).

Longevity and maximum size	Longevity: at least 28 years (in captivity) Max size: at least 246 cm TL	
Age and/or size at maturity (50%)	Males: 7 years, 150-170 cm TL	
Age and/or size at maturity (50%)	Females: 6-8 years, 150-170 cm TL	

Link to IUCN Page: https://www.iucnredlist.org/species/41878/68645890
Link to page at Shark References: http://shark-references.com/species/view/Stegostoma-fasciatum

References

- Blaber, S., Dichmont, C.M., White, W.T., Buckworth, R.C., Sadiyah, L., Iskandar, B., Nurhakim, S., Pillans, R.D., 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: 367–391.
- Compagno, L.J.V. 2001. Sharks of the world. An annotated and illustrated catalogue of shark species known to date. Vol. 2. Bullhead, mackeral and carpet sharks (Heterodontiformes, Lamniformes and Orectolobiformes). FAO species catalogue for fisheries purposes. No. 1. Vol. 2. FAO, Rome.
- Dudgeon, C.L., Lanyon, J.M., Semmens, J.M. 2013. Seasonality and site-fidelity of the zebra shark *Stegostoma fasciatum* in southeast Queensland, Australia. *Animal Behaviour* 85: 471-481.
- Dudgeon, C.L, Noad, M.J. and Lanyon, J.M. 2008. Abundance and demography of a seasonal aggregation of zebra sharks *Stegostoma fasciatum*. *Marine Ecology-Progress Series* 368: 269-281.
- Dudgeon, C.L., Broderick, D., Ovenden, J.R. 2009. IUCN classification zones concord with, but underestimate, the population genetic structure of the zebra shark *Stegostoma fasciatum* in the Indo-West Pacific. *Molecular Ecology* 18(2): 248-261.
- Harry, A.V., Tobin, A.J., Simpfendorfer, C.A., Welch, D.J., Mapleston, A., White, J., Williams, A.J., and 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: 710-721.
- Last, P.R. and Stevens, J.D. 2009. Sharks and Rays of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia.
- Pillans, R. and Simpfendorfer, C. 2003. Stegostoma fasciatum. The IUCN Red List of Threatened Species 2003.
- Semibiring, A., Pertiwi, N.P.D., Marhardini, A., Wulandari, R., Kurniasih, E.M., Kuncoro, A.W., Cahyani, N.K.D., Anggoro, A., Ulfa, M., Madduppa, H., Carpenter, K.E., Barber, P.H. and Mahardika, G.N. 2015. DNA barcoding reveals targeted fisheries for endangered sharks in Indonesia. *Fisheries Research* 164: 130-134.
- Sumpton, W.D., Taylor, S.M., Gribble, N.A., McPherson, G. and Ham, T. 2011. Gear selectivity of large-mesh nets and drumlines used to catch sharks in the Queensland Shark Control Program. *African Journal of Marine Science* 33(1): 37-43.
- Western Australia Department of Fisheries. 2010. The Bycatch Action Plan for the Pilbara Fish Trawl Interim Managed Fishery. Fisheries Management Paper No. 244. Western Australian Department of Fisheries, Perth.
- 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.