Grey Carpetshark, *Chiloscyllium punctatum*

Report Card assessment	**Sustainable**		
IUCN Red List Australian Assessment	Least Concern	IUCN Red List Global Assessment	Near Threatened
Assessors	Dudgeon, C.L., Bennett, M.B. & Kyne, P.M.		
Report Card Remarks	Australia catches are discarded bycatch with likely high survival rates		

Summary

The Grey Carpetshark is widely distributed through the Indo-West Pacific region. The species is fished and retained throughout southeast Asia. It is susceptible to capture in a range of fishing gear, and given its coastal preference, the distribution largely overlaps with artisanal and commercial fisheries in many countries. Within Australia, it is not targeted in any fishery and when taken as bycatch, it is largely released with likely high survival rates. Based on the ongoing threats to this species from fishing pressure in much of its range and suspected population declines, the Grey Carpetshark is assessed globally as Near Threatened (IUCN). In Australia, mortality from fisheries is limited and the species is afforded protection through marine parks throughout several parts of its distribution. Therefore, the species is assessed as Least Concern (IUCN) and Sustainable (SAFS) in Australian waters.

Distribution

The Grey Carpetshark is widely distributed in tropical and warm temperate waters. It is known from India, southeast Asia, Japan and northern Australia (Last and Stevens 2009, Akhilesh et al. 2014). In Australia, it occurs from Sandon River (New South Wales) to Shark Bay (Western Australia). There is taxonomic uncertainty for this species with evidence suggesting that the Australian form may be a cryptic sister-species to the southeast Asian form (Naylor et al. 2012).

Stock structure and status

There is currently no information on population size, structure, or trend for the species.

Fisheries

The Grey Carpetshark is taken in a range of inshore artisanal and commercial fisheries throughout its global range. Within Australia, small numbers of the species are known to be taken as bycatch and generally discarded in trawl and net fisheries across northern Australia; Pilbara Trawl, Queensland East Coast Inshore Finfish Fisheries, Queensland East Coast Trawl Fishery and the Northern Prawn Fishery all report catches (Stobutzki et al. 2002, Kyne 2008, Western Australian Department of Fisheries 2010, Harry et al. 2011)..

Habitat and biology

The Grey Carpetshark is a demersal species found inshore in a variety of habitats including nearshore intertidal, sandy and muddy substrate, seagrass beds and rocky and coral reef habitat to depths of at least 85 m (White and Potter 2004, Last and Stevens 2009, Chin et al. 2012). Maximum size is at least 132 cm total length (TL) with males mature at 82 cm TL and females at 87 cm TL (Last and Stevens 2009). It produces large numbers of eggs in captivity; 692 eggs were laid in one year between 6 females, although only one fifth of the eggs were viable (Harahush et al. 2007). The species is extremely hardy and physiologically adapted to inhabiting environments that undergo cyclical hypoxic conditions such as coral reef flats (Chapman and Renshaw 2011).

Longevity and maximum size	Longevity: estimated at least 16 years TL Max size: 132 cm TL
Age and/or size at maturity (50%)	Males: 82 cm TL Females: 87 cm TL

Link to IUCN Page: http://www.iucnredlist.org/details/41872/0

Link to page at Shark References: http://www.shark-references.com/species/view/Chiloscyllium-punctatum

References

Akhilesh, K.V., Bineesh, K.K., Gopalakrishnan, A., Jena, J.K., Basheer, V.S., Pillai, N.G.K. 2014. Checklist of Chondrichthyans in Indian waters. *Journal of the Marine Biological Association of India* 56(1): 109-120.

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.

Chapman, C.A, Renshaw, G.M.C. 2011. Hematological responses of the grey carpet shark (*Chiloscyllium punctatum*) and the epaulette shark (*Hemiscyllium ocellatum*) to anoxia and re-oxygenation. *Journal of Experimental Zoology Part A Ecological Genetics and Physiology* 311A (6): 422-438.

Chin, A., Tobin, A., Simpfendorfer, C. and Heupel, M. 2012. Reef sharks and inshore habitats: patterns of occurrence and implications for vulnerability. *Marine Ecology Progress Series* 460: 115-125.

Harahush, B.K., Fischer, A.B.P., Collin, S.P. 2007. Captive breeding and embryonic development of *Chiloscyllium punctatum* Muller & Henle, 1838 (Elasmobranchii: Hemiscyllidae). *Journal of Fish Biology* 71: 1007–1022.

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.

Krajangdara, T. 2014. Sharks and Rays in Thailand - Country Report. Andaman Sea Fisheries Research and Development Centre, Department of Fisheries, Phuket, Thailand.

Kyne, P.M. 2008. Chondrichthyans and the Queensland East Coast Trawl Fishery: bycatch reduction, biology, conservation status and sustainability. School of Biomedical Sciences, The University of Queensland.

Last, P.R. and Stevens, J.D. 2009. Sharks and Rays of Australia. Second Edition. CSIRO Publishing, Collingwood.

Naylor, G.J., Caira, J.N., Jensen, K., Rosana, K.A.M., White, W.T. and Last, P.R. 2012. A DNA sequence-based approach to the identification of shark and ray species and its implications for global elasmobranch diversity and parasitology. *Bulletin of the American Museum of Natural History*: 1-262.

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.

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.

White, W.T and Potter, I.C. 2004. Habitat partitioning among four elasmobranch species in nearshore, shallow waters of a subtropical embayment in Western Australia. *Marine Biology* 145(5): 1023-1032.