



illustration © Marc Dando

A medium sized coastal shark, the grey reef shark occurs in coral reef habitat in tropical waters in the Indian and Pacific Oceans, from the surface down to at least 280 meters. This species has relatively low reproductivity, is suffering from decline in habitat, is common in the shark fin trade and is declining globally. This species and other sharks in the Carcharhinidae are under Proposal 37 for listing under CITES Appendix II in 2022.

IUCN RED LIST - ENDANGERED w/ DECREASING POPULATION (2020) ↓

- As of 2020, the IUCN has listed Grey reef sharks as endangered with globally decreasing populations.¹ They are listed as near threatened under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as of 2018.
- Grey reef shark declines of over 90% have been recorded in the Indian and Western Central Pacific Oceans.^{2,3,4} Globally, grey reef shark declines have surpassed approximately 30%.
- The Grey reef shark has a strong affinity for sites with high coral cover,⁵ making it sensitive to habitat degradation. Even if fishing is well managed, threats to coral reef ecosystems can have a direct impact on Grey reef shark populations.⁵
- The Grey reef sharks are vulnerable to fishing pressure due to high site fidelity, small litter size and late age at maturity.⁵ The species is retained for their fins and meat.⁶
- Studies between 2010 - 2022 indicate the grey reef shark is still present in the shark fin trade.^{7, 8, 9, 10}
- In the 2000's this species was heavily fished in Australia due to the high levels of illegal, unregulated and unreported (IUU) fishing.⁶
- Increasing threats of climate change such as ocean warming and acidification have led to the rapid and significant decline of coral reefs and therefore are a significant cause of reef species decline.^{5, 11, 12, 13}
- The coral reef area-weighted population depletion of grey reef sharks was estimated as 59.2% and assumed to have occurred over the past three generation lengths (44 years).¹⁴ Based on global data, this species' population has been estimated to have decreased by approximately 50–79% in the last three generation lengths (44 years).¹
- Reef shark tourism has high economic value in small island nations such as Palau where it has a lifetime value of approximately US\$1.9 million and has been valued at US\$189 000 annually.¹⁵ The socio-economic, cultural and educational benefits of shark tourism globally are much more valuable than the consumptive value of sharks.¹⁵



image by Charlie Fasano

- The meat is often discarded but demand may be increasing and it is used in some regions where it is sold fresh locally and frozen or dried for international trade.^{12, 14}
- A 2011 study indicated that reef sharks were present in over 33% of all global ecotourism locations.¹⁶
- If this species is to recover, immediate conservation measures such as: marine protected areas, coral reef management, and increased education must be implemented.¹⁷ Additionally, the regulation of human activities affecting ocean warming and acidification must be enforced.¹



References

1. Simpfendorfer C, Vo V. Q, Gautama D. A, et al. *Carcharhinus Amblyrhynchos*. IUCN Red List of Threatened Species. 2020. doi:10.2305/iucn.uk.2020-3.rlts.t39365a173433550.en
2. White W. T. Catch composition and Reproductive Biology of Whaler Sharks (carcharhiniformes: Carcharhinidae) caught by fisheries in Indonesia. *Journal of Fish Biology*. 2007;71(5):1512-1540. doi:10.1111/j.1095-8649.2007.01623.x
3. Graham N. A, Spalding M. D, Sheppard C. R. Reef shark declines in remote atolls highlight the need for multi-faceted conservation action. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 2010;20(5):543-548. doi:10.1002/aqc.1116
4. Nadon M. O, Baum J. K, Williams I. D, et al. Re-creating missing population baselines for Pacific Reef Sharks. *Conservation Biology*. 2012;26(3):493-503. doi:10.1111/j.1523-1739.2012.01835.x
5. Espinoza M, Cappo M, Heupel MR, Tobin AJ, Simpfendorfer CA. Quantifying shark distribution patterns and species-habitat associations: Implications of marine park zoning. *PLoS ONE*. 2014;9(9). doi:10.1371/journal.pone.0106885
6. Kumoru, L. The shark longline fishery in Papua New Guinea. In *Proceedings of the Billfish and By-catch Research Group, 176th Meeting of the Standing Committee on Tuna and Billfish, 9-16. (2003)*
7. Fields A. T, Fischer G. A, Shea S. K, et al. Species composition of the international shark fin trade assessed through a retail-market survey in Hong Kong. *Conservation Biology*. 2017;32(2):376-389. doi:10.1111/cobi.13043
8. Cardeñosa D, Shea KH, Zhang H, Feldheim K, Fischer GA, Chapman DD. Small fins, large trade: A snapshot of the species composition of low-value shark fins in the Hong Kong markets. *Animal Conservation*. 2019;23(2):203-211. doi:10.1111/acv.12529
9. Biery L, Pauly D. A global review of species-specific shark- fin-to-body-mass ratios and relevant legislation. *Journal of Fish Biology*. 2012;80(5):1643-1677. doi:10.1111/j.1095-8649.2011.03215.x
10. Sembiring A, Pertiwi NP, Mahardini A, et al. DNA barcoding reveals targeted fisheries for Endangered Sharks in Indonesia. *Fisheries Research*. 2015;164:130-134. doi:10.1016/j.fishres.2014.11.003
11. Field IC, Meekan MG, Buckworth RC, Bradshaw CJ. Protein mining the world's oceans: Australasia as an example of illegal expansion-and-displacement fishing. *Fish and Fisheries*. 2009;10(3):323-328. doi:10.1111/j.1467-2979.2009.00325.x
12. Haward, Marcus, and Anthony Bergin. *Net worth: Australia's regional fisheries engagement*. (2016)
13. Heupel MR, Papastamatiou YP, Espinoza M, Green ME, Simpfendorfer CA. Reef Shark Science – key questions and future directions. *Frontiers in Marine Science*. 2019;6. doi:10.3389/fmars.2019.00012
14. Pörtner, Hans-Otto, Debra C. Roberts, Valérie Masson-Delmotte, Panmao Zhai, Melinda Tignor, Elvira Poloczanska, and N. M. Weyer. "The ocean and cryosphere in a changing climate." *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* (2019).
15. Hari, K., Jaiteh, V., & Chin, A. (2021, September 30). *The sharks and rays of Palau: Biological diversity, status, and social and cultural dimensions*. CSIRO PUBLISHING. Retrieved October 4, 2022, from <https://doi.org/10.1071/PC20063>
16. Gallagher AJ, Hammerschlag N. Global Shark Currency: The distribution, frequency, and economic value of shark ecotourism. *Current Issues in Tourism*. 2011;14(8):797-812. doi:10.1080/13683500.2011.585227
17. Dulvy NK. Conservation biology: Strict marine protected areas prevent reef shark declines. *Current Biology*. 2006;16(23). doi:10.1016/j.cub.2006.10.038

-Prepared by David McGuire

