Sightings of wedgefishes and giant guitarfishes are rare on global baited remote underwater videos surveys (BRUVS)

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Widespread declines of the Critically Endangered wedgefishes (Family Rhinidae) and giant guitarfishes (Family Glaucostegidae), likely driven by the high demand for their fins and meat in Asian markets raises concern about their risk of over-exploitation and extinction [1]. Understanding the distribution and abundance of species within the ecosystem is necessary for evidence-based conservation and management of the species [2]. Over 15,000 baited remote underwater stations, (BRUVS), a standardised, consistent and non-extractive method (Fig. 1) [3, 4], were deployed to estimate the abundance and current distribution of sharks and rays, including wedgefishes and giant guitarfishes, on 371 tropical coral reefs in 58 nations worldwide.

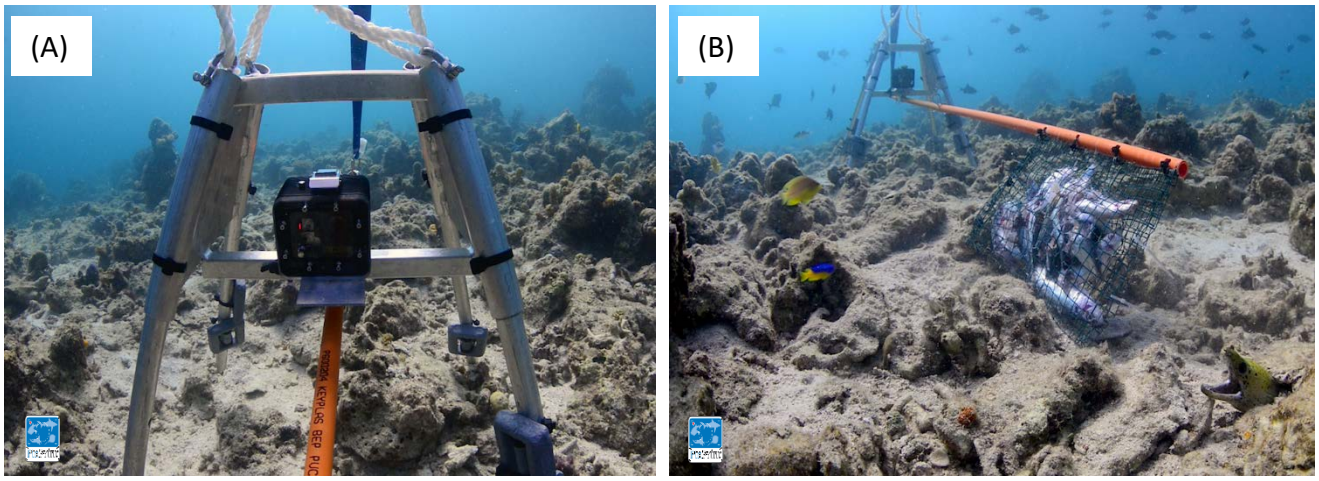
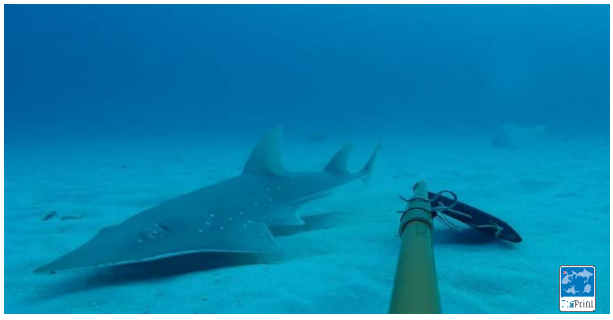


Figure 1. The baited remote underwater video stations (BRUVS) used in global survey to estimate shark and ray abundance on coral reefs (Global FinPrint Project). BRUV station comprises (A) of a GoPro Camera within an underwater housing on weighted metal frame, (b) with a bait pole attached to attract predators. Photo credit: Global FinPrint Project, www.globalfinprint.org.

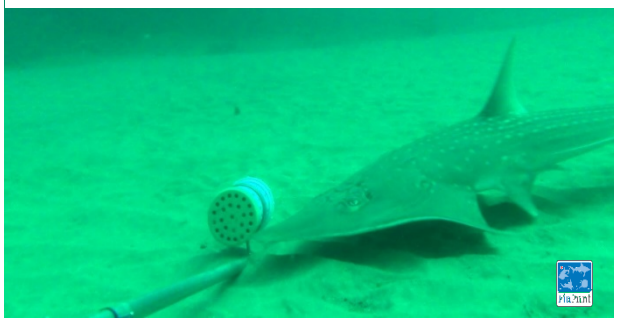
Key Findings

1. There were 95 individual sightings from four species of wedgefishes and one species of giant guitarfish recorded globally. Wedgefishes (n = 91) were sighted more than giant guitarfish (n = 4).
2. The two main wedgefish species proposed for CITES Appendix II were observed: bottlenose wedgefish, *Rhynchobatus australiae* (n = 55) (Fig. 2; Fig. 3) and whitespotted wedgefish, *Rhynchobatus djiddensis* (n = 12) (Fig. 2; Fig. 4). *Rhynchobatus australiae* was the most commonly seen wedgefish species on the BRUVS. Species of giant guitarfish proposed for CITES Appendix II listing as a look-alike, giant guitarifish *Glaucostegus typus,* was observed (n = 4, Fig. 2; Fig. 5).
3. Despite the extensive sampling effort, sightings of wedgefishes and giant guitarfishes were rare. The lack of sightings could be because sampling was not conducted in the sandy habitat of preference for these species [3] or that populations have been depleted and so individuals were only rarely sighted.
4. Sightings of wedgefish and giant guitarfish were higher around nations with management in place for rays (e.g. Australia), compared to other nations with no management for these rays (e.g. Indonesia). The absence of wedgefish and giant guitarfish on this extensive, global survey likely reflects the suspected population declines outlined in recent IUCN Red List assessments [1].

(A) Bottlenose wedgefish, *Rhynchobatus australiae*



(B) Whitespotted wedgefish, *Rhynchobatus djiddensis*



(C) Giant guitarfish, *Glaucostegus typus*

Figure 2. Wedgefish and giant guitarfish species observed on the BRUVS during the global survey on corals reefs. The two main wedgefish species proposed for CITES Appendix II (A) Bottlenose wedgefish, *Rhynchobatus australiae* and (B) whitespotted wedgefish *Rhynchobatus djiddensis* were sighted. A look-alike species of giant guitarfish proposed for CITES Appendix II (C) giant guitarfish *Glaucostegus typus* was observed.

Photo credit: A & B: Global FinPrint Project, www.globalfinprint.org; C: Conner Gervais

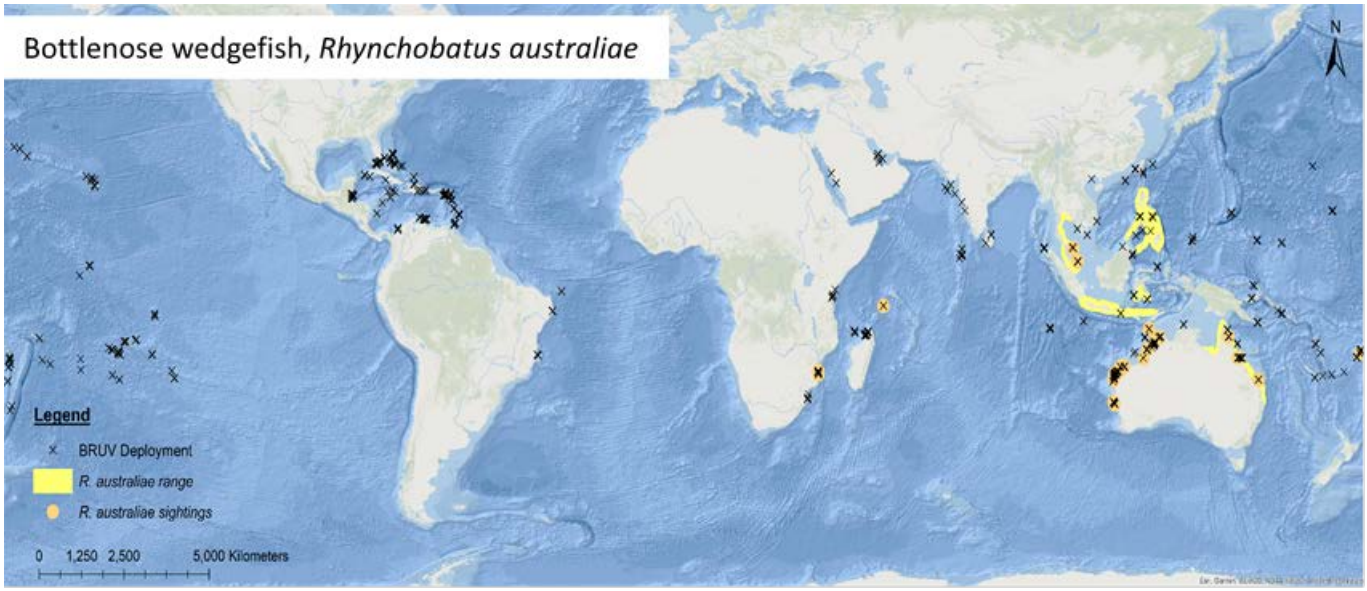


Figure 3. The global distribution of sightings of bottlenose wedgefish *Rhynchobatus australiae* (n= 55) on coral reefs using BRUVS from the Global FinPrint Project. Black x denote sites surveyed, yellow area is the known distribution of *R. australiae* and the dark yellow circles are the sightings of *R. australiae* on the BRUVS.

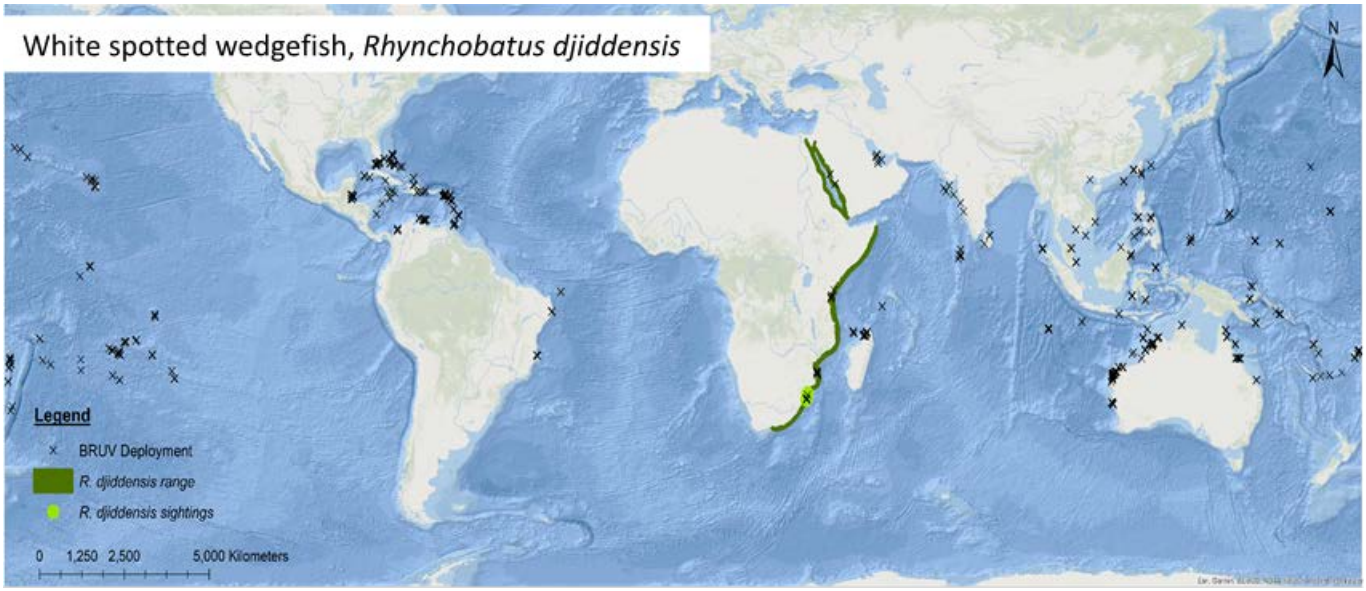


Figure 4. The global distribution of sightings of white spotted wedgefish *Rhynchobatus djiddensis* on coral reefs using BRUVS from the Global FinPrint Project. Black x denote sites surveyed, dark green area is the known distribution of *R. djiddensis* and the light green circles are the sightings of *R. djiddensis* on the BRUVS

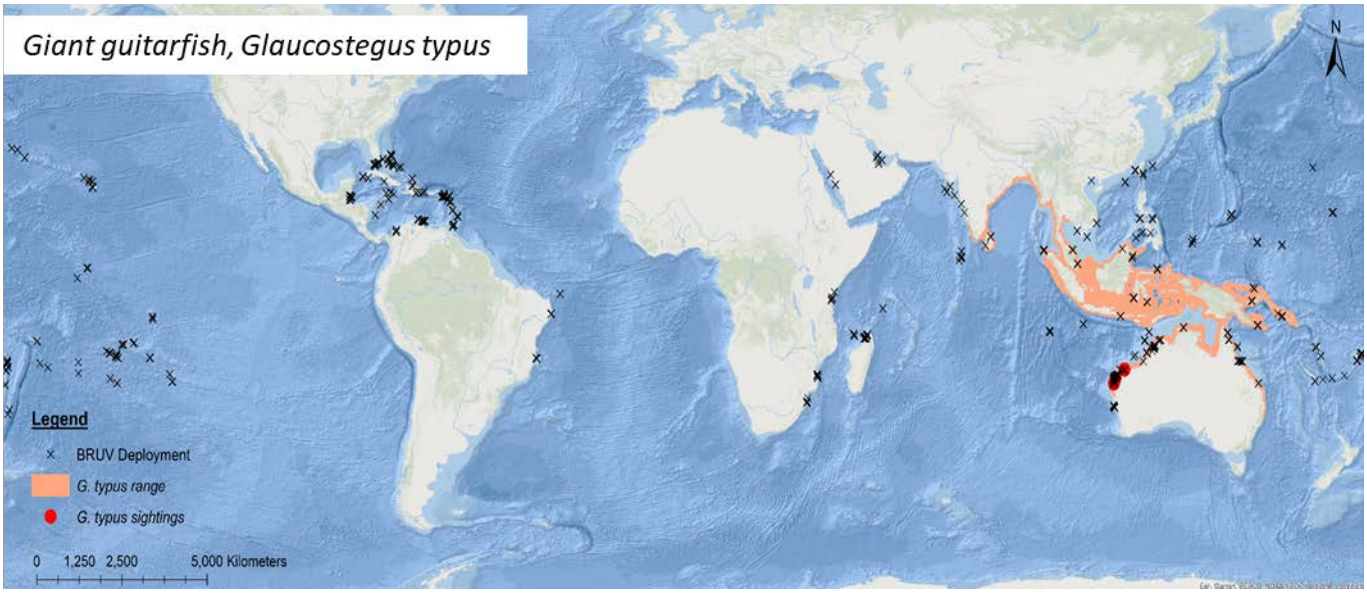


Figure 5. The global distribution of sightings of giant guitarfish *Glaucostegus typus* on coral reefs using BRUVS from the Global FinPrint Project. Black x denote sites surveyed, orange area is the known distribution of *G. typus* and the red circles are the sightings of *G. typus* on the BRUVS.

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