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CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Eighteenth meeting of the Conference of the Parties
Geneva (Switzerland), 17–28 June 2019

SUMMARY OF NEW FINDINGS ON WEDGEFISH AND GIANT GUITARFISH

1. This document has been submitted by Senegal in relation with proposals 43 and 44.[1]

2. Four publicly available sources of new information provide valuable additional resources to that presented in the original CoP18 Prop. 43 and CoP18 Prop. 44 as well as the Sixth FAO Expert Advisory Panel Assessment of Proposals (CoP18 Doc. 105.3 Annex 1). This additional information can assist Parties in making decisions on the Proposals. These documents reveal:

   A. The IUCN status of these species, which has been updated since the submission of the Proposals. These two families are now the most imperilled marine fishes globally, with all but one of the 16 species identified as Critically Endangered, and facing an extremely high risk of extinction.
   B. A case study that demonstrates substantial population declines of these species as a result of intense and unmanaged fishing pressure with multiple gear types. These are not declines that were identified in the original Proposals and thus provide additional supporting information on the status of these species.
   C. New information on biological productivity and indicates the potential for these species to recover if fishing mortality is reduced and regulated.
   D. New Identification tools are available for all *Glaucostegus spp. (Giant Guitarfishes) and Rhinidae spp. (Wedgefishes),* which will aid in the implementation of these listings if adopted at CoP 18.

* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

Summary of new findings on Wedgefish and Giant Guitarfish

Key findings of each of three publicly available pre-prints are described here with the links for the each of the full pre-prints.

A. The thin edge of the wedge: extremely high extinction risk in wedgefishes and giant guitarfishes[2]. Available at: https://www.biorxiv.org/content/10.1101/595462v3

This study summarises the extinction risk of all 10 wedgefishes and 6 giant guitarfishes by applying the International Union for Conservation of Nature (IUCN) Red List Categories and Criteria. Key findings include:

1. Wedgefishes and giant guitarfishes have overtaken sawfishes as the most imperilled marine fish families globally, with all but one of the 16 species facing an extremely high risk of extinction (i.e. are assessed as Critically Endangered). This is primarily due to their presence in shallow waters that overlap with some of the most intense and increasing coastal fisheries in the world, over-exploitation in target and bycatch fisheries driven by the need for animal protein and food security in coastal communities, and trade in meat and high-value fins.
2. Available landings and catch rate datasets from the Indo-West Pacific infer population reductions of 81 to >99% over the past three generation lengths (30-45 years), despite ongoing and increasing fishing effort.
3. Two species with very restricted ranges, *Rhynchobatus cooki* of the Indo-Malay Archipelago and *Rhynchorhina mauritaniensis* of Mauritania may be very close to extinction.
4. Only *Rhynchobatus palpebratus* is not assessed as Critically Endangered, due to it occurring primarily in Australia where fishing pressure is low, and some management measures are in place. Australia represents a 'lifeboat' for the three wedgefish and one giant guitarfish species occurring there.
5. To conserve populations and permit recovery, a suite of measures will be required which will need to include species protection, spatial management, bycatch mitigation, and harvest and international trade management, all of which will be dependent on effective enforcement.

B. Untangling the Indonesian tangle net fishery: describing a data-poor fishery targeting large threatened rays (Order Batoidea)[3]. Available at: https://www.biorxiv.org/content/10.1101/608935v1

Considerable population declines in wedgefishes in Indonesia were demonstrated, which is likely the result of the large mesh sized bottom set gillnet fishery, known as the tangle net fishery. This included three species of

[2] *Kyne, P.M., Jabado, R.W., Rigby, C.L., Dharmadi, Gore, M.A., Pollock, C. M., Herman, K.B., Cheok, J., Ebert, D.A., Simpfendorfer, C.A. and Dulvy, N.K. Preprint. The thin edge of the wedge: extremely high extinction risk in wedgefishes and giant guitarfishes. 10.1101/595462.*

[3] *D'Alberto, B.M., White, W.T., Chin, A., Dharmadi, and Simpfendorfer, C.A. Preprint. Untangling the Indonesian tangle net fishery: describing a data-poor fishery targeting large threatened rays (Order Batoidea). 10.1101/608935v1.*

wedgefish, *Rhynchobatus australiae, Rhynchobatus palpebratus* and *Rhina ancylostoma,* and two species of giant guitarfish, *Glaucostegus typus* and *Glaucostegus thouin.* Key findings include:

a) Substantial population declines can be inferred from the declining catch rates of the target species, *R. australiae,* and the decline in the number of vessels operating in the tangle net fishery from 500 in 1980's to 7 in 2017/2018, despite continuing high prices for their fins.

b) *Rhynchobatus australiae* is the main target species and the second most abundant species landed in the fishery. The fishery is highly selective for larger size classes, but smaller size classes of target species are also caught in high numbers in other Indonesian fisheries such as trawl, small mesh gillnet, and hand- and long- line fisheries.

c) Total wedgefish landings across all Indonesian fisheries drastically declined by almost 90% between 2005 and 2008 and have never recovered to 2005 levels. Despite the drastic declines in wedgefish populations, at least in part as a result of this targeting fishery, the Muara Angke tangle net fishery was still operational in July 2018. Few wedgefish are currently caught by the tangle net boats, with large stingrays forming most of the catch.

C. Population productivity of wedgefishes, guitarfishes, and banjo rays: inferring the potential for recovery"[4]. Available at: https://www.biorxiv.org/content/10.1101/584557v2

Published life history information was used to estimate the maximum intrinsic rate of population increase, which is a measure of biological productivity, for nine species of shark-like rays (Order Rhinopristiformes), including one species of wedgefish *Rhynchobatus australiae,* and two species of giant guitarfish *Glaucostegus cemiculus* and *Glaucostegus typus.* The productivity of the nine species were compared to the productivity of 106 other shark, ray and chimaera (chondrichthyan) species. Key findings include:

a) Wedgefishes and giant guitarfishes have the biological capacity to recover relatively quickly from population declines, if fishing mortality is substantially reduced. These rates of recovery would be faster than for most other CITES listed shark or ray species.

b) *Rhynchobatus australiae* and *G. cemiculus* have higher than average maximum intrinsic rates of population increase, while *G. typus* has an average maximum intrinsic rate of population increase, compared to other chondrichthyans examined.

c) The high maximum intrinsic rate of population growth for the larger species of wedgefish and giant guitarfish is the result of the higher annual reproductive outputs, combined with early age-at-maturity, compared to other species of a similar maximum size.

d) Maximum rate of intrinsic population growth increased with increasing body size for nine species of rhinopristiformes.

[4] D'Alberto, B.M., Carlson, J.K., Pardo, S.A. and Simpfendorfer, C.A. Preprint. Population productivity of wedgefishes, guitarfishes, and banjo rays: inferring the potential for recovery. 10.1101/584557v2.

D.) New Identification tools are available for all *Glaucostegus spp. (Giant Guitarfishes) and Rhinidae spp. (Wedgefishes),* which will aid in the implementation of these listings if adopted at CoP 18.

A visual identification guide of all 16 species of wedgefish and giant guitarfish are available, including the steps for visually identifying the fins (See Annex 1).[5] In addition, genetic protocols are available to further identify the products to help ensure continued trade of these species are sustainable and legal.[6]

Annex 1

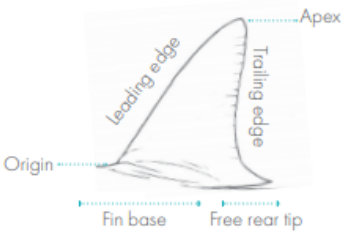
How to identify wedgefish and giant guitarfish fins in trade (excerpts from *Wedgefishes and Giant Guitarfishes: A Guide to Species Identification)* (Jabado 2019))

[5] *Jabado RW. 2019. Wedgefishes and Giant Guitarfishes: A Guide to Species Identification. Wildlife Conservation Society, New York, United States. 30 pp. https://citessharks.org/s/Jabado-2019_Wedgefishes-and-Giant-Guitarfishes_ID-guide_WCS_watermarked_oldlogo.pdf*

[6] *Abercrombie, D.L., Cardeñosa, D. & Chapman, D.D. (2018). Genetic Approaches for Identifying Shark Fins and Other Products: A Tool for International Trade Monitoring and Enforcement. Abercrombie & Fish, Marine Biological Consulting, Suffolk County, NY. 13 pg. https://www.identifyingsharkfins.org/s/Pew_DNA_Manual_v7-for-print.pdf*

Below are some guidelines to help distinguish between dorsal and caudal fins of wedgefishes and giant guitarfishes.

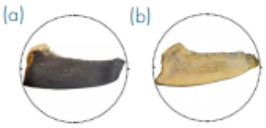
The landmarks used to describe key features of fins are the same for sharks and rays and are presented here for dorsal fins:



Step 1. Find dorsal fins and caudal fins from batches of fins and distinguish them from other fins such as pectoral fins. *It is important to note that pectoral fins found in the trade will usually* ***only*** *belong to sharks and* ***not*** *wedgefishes or giant guitarfishes.*

Dorsal (a) and caudal fins (b) are the same colour on both sides. Dorsal fins (a) also have a free rear tip

Pectoral fins are usually darker on the top side/dorsal view (a) and lighter underneath/ventral view (b)



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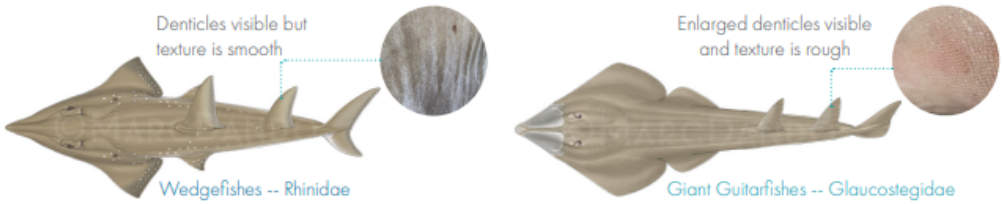
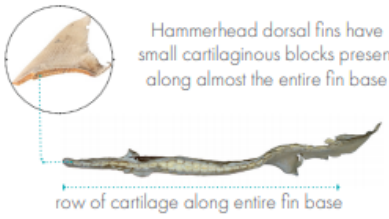
Step 2. Distinguish between shark and wedgefish and giant guitarfish dorsal fins

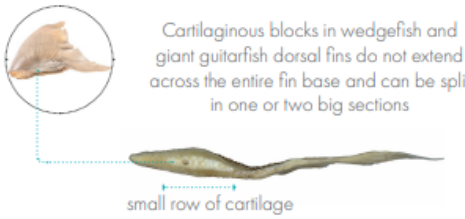
Dorsal fins of wedgefishes and giant guitarfishes have a free rear tip that starts anterior or before the apex and which is moderately longer when compared to the fin base.

Step 3. Check the texture of the fins to determine if they are smooth and shiny or have enlarged denticles



Step 4. For dull brown or light grey tall fins (fin height > fin length), check and confirm that they do not belong to hammerhead sharks





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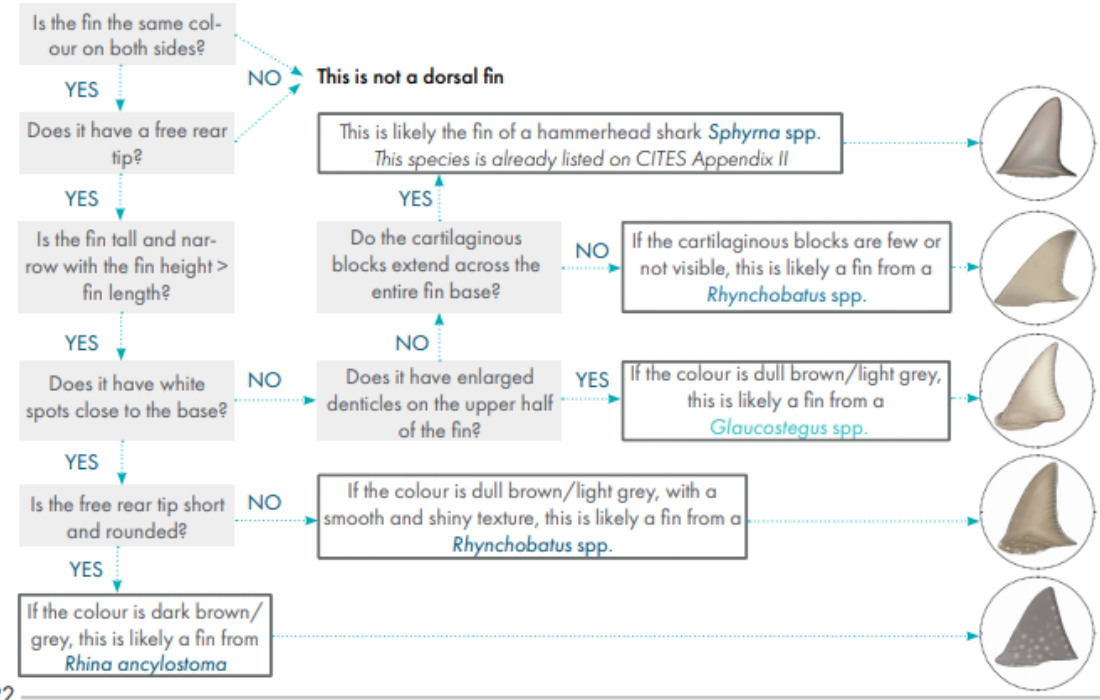
Key to identification based on **dorsal fins**



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Key to identification based on **caudal fins**