

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



Eighteenth meeting of the Conference of the Parties
Colombo, Sri Lanka, May 23-June 3, 2019

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of the blackchin guitarfish (*Glaucostegus cemiculus*), and the sharpnose guitarfish (*Glaucostegus granulatus*) in Appendix II in accordance with Article II paragraph 2(a) of the Convention and satisfying Criterion A and B in Annex 2a of Resolution Conf. 9.24 (Rev. CoP17).

Inclusion of all other giant guitarfish, *Glaucostegus spp.* in accordance with Article II paragraph 2(b) of the Convention and satisfying Criterion A in Annex 2b of Resolution Conf. 9.24 (Rev. CoP 17).



Figure 1: Blackchin guitarfish *Glaucostegus cemiculus*

Figure 2: Sharpnose guitarfish *Glaucostegus granulatus*

Qualifying criteria (Res. Conf. 9.24 (Rev. CoP16))

Annex 2a, Criterion A. *It is known, or can be inferred or projected, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.*

Glaucostegus cemiculus and *Glaucostegus granulatus* qualify for inclusion in Appendix II under Annex (2a) Criterion A, meeting the CITES guidelines for the application of decline to low productivity, commercially exploited aquatic species. Their populations have already fallen to less than 30% of historical baseline. These declines were caused by widespread and largely unmanaged fisheries, which yield large valuable fins that enter international markets. Population declines are projected to continue, due to the heavy fishing pressures throughout their range. In addition to the significant declines estimated for *G. cemiculus*, a projection of over 50% further declines are projected over the next three generation periods if no further management is put in place for these species (Notarbartolo di Sciara, et al. 2016), likely pushing these species to an Appendix I criteria.

Annex 2a, Criterion B. *It is known, or can be inferred or projected, that regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences.*

Targeted catch of giant guitarfish species is increasingly due to the high value of the fins on the international market (Jabado, 2018). These widespread and largely unmanaged fisheries have caused significant declines in the population for the entire Glaucostegidae Family. With similar demand, high value, morphological, genetic, and life history characteristics to the sawfishes, whose declining populations were ignored by fisheries and trade management for almost three decades and whose populations are now unlikely to recover, the trade of giant guitarfish species must be regulated in order to prevent a similar fate of near extinction.

Annex 2b, Criterion A. *The specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2(a), or in Appendix I, such that*

enforcement officers who encounter specimens of CITES-listed species, are unlikely to be able to distinguish between them.

All other species in the family *Glaucostegidae* (currently *G. halavi*, *G. obtusus*, *G. thouin*, *G. typus*) also qualify for inclusion in Appendix II under Annex (2b) Criterion A, due to close morphological similarities in the fins in trade and whole specimens, making it difficult to distinguish between species within this family.

B. Proponent

Senegal, Bangladesh, Benin, Bhutan, Burkina Faso, Cabo Verde, Chad, Comoros, Cote d'Ivoire, Dominican Republic, Gabon, Gambia, Liberia, Maldives, Mali, Mauritania, Monaco, Nepal, Niger, Nigeria, Palau, Sierra Leone, Sri Lanka, and Togo.

C. Supporting statement

1. Taxonomy

1.1 Class: Chondrichthyes, subclass Elasmobranchii

1.2 Order: Rhinopristiformes

1.3 Family: Glaucostegidae (entire family)

1.4 Genus, species or subspecies, including author and year:

Species	Scientific Synonym	Common Name	IUCN Red List
<i>Glaucostegus cemiculus</i> (St. Hilaire, 1817)	<i>Rhina cemiculus</i> (Geoffroy St. Hilaire, 1827) <i>Rhinobatos cemiculus</i> (Geoffroy Saint-Hilaire, 1817)	English: Blackchin guitarfish French: Guitarre De Mer Fousseuse Spanish–Guitarra Barbanegra, Guitarró	Endangered
<i>Glaucostegus granulatus</i> (Cuvier, 1829)	<i>Rhinobatos granulatus</i> Cuvier, 1829 <i>Rhinobatus acutus</i> (Garman, 1908) <i>Scobatus granulatus</i> (Cuvier, 1829)	Sharpnose guitarfish	Vulnerable
<i>Glaucostegus halavi</i> (Forsskal, 1775)	<i>Raja halavi</i> (Forsskål, 1775) <i>Rhinobatos halavi</i> (Forsskål, 1775) <i>Scobatus halavi</i> (Forsskål, 1775)	Halavi guitarfish	Vulnerable
<i>Glaucostegus obtusus</i> (Muller & Henle, 1841)	<i>Rhinobatos obtusus</i> (Müller & Henle, 1841)	Widenose guitarfish, grey guitarfish	Vulnerable Globally; Critically Endangered in northwest Indian Ocean
<i>Glaucostegus thouin</i> (Anonymous, 1798)	<i>Raja thouin</i> (Anonymous [Lacepède], 1798) <i>Rhinobatos thouin</i> (Anonymous [Lacepède], 1798)	Clubnose guitarfish	Vulnerable
<i>Glaucostegus typus</i> (Bennet, 1830)	<i>Rhinobatos typus</i> (Anonymous [Bennett], 1830) <i>Rhinobatos batillum</i> (Whitley, 1939) <i>Rhinobatus armatus</i> (Gray, 1834)	Giant guitarfish, giant shovelnose ray, common shovelnose ray	Vulnerable

Note:

Previous literature has described *Glaucostegus petiti* (Chabanaud, 1929) common name the Madagascar guitarfish as the seventh species of guitarfish. This species is known from one specimen. It needs to be investigated to determine if it is a valid species from the Western Indian Ocean, a misidentified species, or an anomalous record of *G. cemiculus*. In the interim, *Glaucostegus petiti* is considered to be a synonym of *G. cemiculus* (David Ebert, Vice Chair Taxonomy IUCN Shark Specialist Group pers. comm.).

Glaucostegidae, the giant guitarfishes, are one of five families in Order Rhinopristiformes: which is comprised of four families of 'guitarfishes' (Rhinobatidae (guitarfishes), Rhinidae (wedgfishes), Trygonorrhinidae (banjo rays), and Glaucostegidae (giant guitarfishes)), and family Pristidae (sawfishes). The latter are already listed in CITES Appendix I. Glaucostegidae were previously classified within the Rhinobatidae family but were recently formed

into their own family comprised of one genus with six species. Because of this taxonomical change, earlier scientific literature grouped these species into the Rhinobatidae and papers or reports published as late as 2016 refer to *G. cemiculus* as *Rhinobatus cemiculus*.

1.5 Scientific synonyms: See section 1.4

1.6 Common Names: See section 1.4

1.7 Code Numbers: Not applicable.

2. Overview

Senegal has proposed to list blackchin guitarfish (*Glaucostegus cemiculus*) and sharpnose guitarfish (*Glaucostegus granulatus*) on Appendix II of the Convention in line with paragraph 2(a) with Article II paragraph 2(a) of the Convention and satisfying Criterion A and B in Annex 2a of Resolution Conf. 9.24 (Rev. CoP17), due to the marked ongoing declines in their populations partly due to the demand for their fins in international trade.

Classified on the IUCN Red List of Threatened Species as Endangered (*G. cemiculus*) and Vulnerable (*G. granulatus*) to extinction in the wild, these marked population declines are a consequence of unmanaged and unsustainable fisheries, coupled with low reproductive potential making the giant guitarfishes exceptionally susceptible to overfishing (Section 3). The lack of management has led to extirpation in the Northern Mediterranean, declines up to 80% in the northwestern Indian Ocean, 80% in the eastern Atlantic, and 86% declines in the Indian Ocean for these species (Section 4).

Senegal has proposed to list in Appendix II all Glaucostegidae, the giant guitarfishes, which are one of five families in Order Rhinopristiformes: which is comprised of four families of 'guitarfishes' (Rhinobatidae (guitarfishes), Rhinidae (wedgfishes), Trygonorrhinidae (banjo rays), and Glaucostegidae (giant guitarfishes)), and family Pristidae (sawfishes). The latter are listed in CITES Appendix I. Glaucostegidae were previously classified as part of the Rhinobatidae family, but recently moved into their own family comprised of one genus that includes six species. Because of this taxonomical change, earlier scientific literature refers to these species as Rhinobatids with all species within the general *Rhinobatus* (*Rhinobatos*). This nomenclature was exemplified in articles and reports published until 2016 which referred to *Glaucostegus cemiculus* using the name *Rhinobatus cemiculus*.

Glaucostegidae have some of the highest value fins on the international market, often making them targeted species in coastal fisheries and a commonly retained bycatch (Chen 1996; Notarbartolo di Sciara et al, 2016; Marshall & Last, 2016; Jabado, 2018) (Section 6). Their morphology makes them highly susceptible to being caught as bycatch in many types of coastal fishing gears (Cavanagh & Gibson, 2007; FAO 2016d; Notarbartolo di Sciara et al., 2016) and in many instances bycatch levels are as high as target catches (Diop & Dossa, 2011).

Recent evidence has shown that fishing effort in the areas inhabited by these coastal species has been increasing (e.g., Jabado et al., 2017, Diop & Dossa, 2011) placing additional pressure on already depleted populations of these species (Section 5). Despite significant declines in populations and increases in fishing effort, no management measures have been put in place for giant guitarfish (Section 8).

An Appendix II listing to ensure that any catch is sustainable and legal would prevent the extinction of Glaucostegidae species, prevent an Appendix I listing in the future, facilitate development of domestic measures to better manage catch levels and encourage data collection on these species to get a better understanding of Glaucostegidae populations and the extent of international trade in these species worldwide.

3. Species characteristics

3.1 Distribution

Glaucostegus cemiculus is an eastern Atlantic species of giant guitarfish, whose range extends from Portugal, throughout the Mediterranean and as far south as Angola (Last et al., 2016).

Glaucostegus granulatus are found in the north western Indian Ocean, from the United Arab Emirates (including the Arabian/Persian Gulf) to Myanmar. Specimens of *Glaucostegus typus* are often misidentified as *G. granulatus*, leading to reports of the latter's range extending further than this, but such a range extension is unlikely (Marshall & Last, 2016).

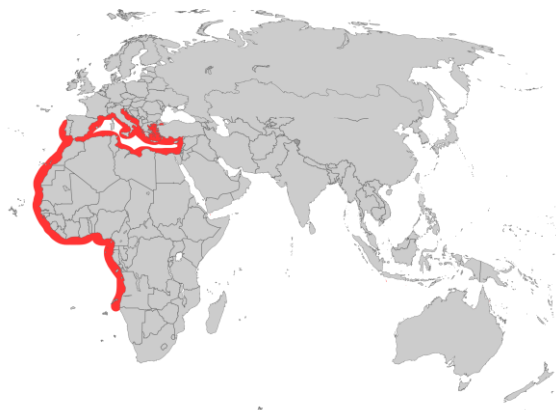


Figure 3. Distribution of blackchin guitarfish *Glaucostegus cemiculus* (IUCN, 2018)



Figure 4. Distribution of sharpnose guitarfish *Glaucostegus granulatus* (IUCN, 2018)

3.2 Habitat

Blackchin guitarfish are subtropical coastal species that live in marine and brackish waters from Portugal south to Angola (Last et al., 2016). They are usually found on sandy bottoms close to the coastlines (Buen 1935), from the intertidal up to maximum depths of 80-100m (Last et al., 2016). Pregnant *G. cemiculus* move inshore to give birth and mate, making them more susceptible to targeted fisheries during this period. Late-term pregnant females and juvenile blackchin guitarfish are recorded from the Gulf of Gabès (Bradaï et al., 2006), Bahiret El Biban (Capapé et al., 2004), coastal Senegal (Diatta et al., 2009; Seck et al., 2004) and in the waters of Banc d'Arguin National Park in Mauritania (Valadou et al., 2006). Males of this species tend to move inshore several months after females have given birth, to mate close to shore (Valadou et al., 2006).

Sharpnose guitarfish also reside on sandy bottoms, from the coast to mid-continental shelf, with a maximum depth of at least 120m (Last et al. 2016). Much less is known of this species' habitats and migratory patterns, although they are also thought to migrate to mate and give birth.

3.3 Biological characteristics

Both species are ovoviviparous (Last et al, 2016). *Glaucostegus cemiculus* can produce litters up to 20 pups, but more commonly give birth to 6–7 pups. *Glaucostegus granulatus* have litters of 6–10 pups (Last et al., 2016; Prasad 1951). Gestation is thought to be 4-8 months (Capape and Zaouali, 1994; Seck et al., 2004; Last et al., 2016; Notarbartolo di Sciara et al., 2016). Reproductive female blackchin guitarfish may have one or two litters per year (Notarbartolo di Sciara et al., 2016); sharpnose guitarfish are thought to reproduce only once a year (Marshall & Last, 2016).

Glaucostegidae migrate seasonally to aggregate for reproduction, usually inshore coastal habitats. Females mature later than males and grow larger, with female fecundity increasing with size (total length, TL) (Capape and Zaouali, 1994). Generation periods for blackchin and sharpnose guitarfish are estimated at approximately 5-10 (Notarbartolo di Sciara, et al., 2016) and 13 years (Jabado et al., 2017), respectively.

Based on the available data there are significant regional differences between *R. cemiculus* in the Mediterranean and West African Atlantic, with individuals reaching greater TL and TL at 50% maturity in the Atlantic (Başusta et al. 2012; Capape & Zaouali 1994; Echwikhi et al. 2013; Echwikhi et al. 2012; Enajjar et al. 2012; Lteif 2015; Seck et al. 2004; Valadou et al. 2006). In the Gulf of Gabès the TL for males and females at 50% sexual maturity is 111.8 cm and 138.1 cm, respectively, whereas in the Banc d'Arguin, these values were 138.1 cm for males and 153.3 for females. Enajjar et al. (2012) estimated the age at 50% maturity as 5.09 years old for females and 2.89 years for males in the Gulf of Gabès.

Glaucostegidae are genetically more closely related to sawfishes than to the other wedgefish or guitarfish Families (Last et al., 2016) and have very similar biological characteristics. Glaucostegidae grow slowly, mature late and exhibit very low productivity (Jabado et al., 2017), making populations highly susceptible to overfishing.

3.4 Morphological characteristics

Glaucostegidae are large rays; many grow larger than 2m TL. Giant guitarfishes have an elongated, shark-like body form that is slightly depressed, giving them a flatter shape than other shark species.

Glaucostegus cemiculus are beige to light brown on the dorsal surface with a semi-transparent area on the snout and a white ventral surface. Blackchin guitarfish often have a black splotch on their snout, usually in juveniles, and often fades as they mature (Last et al., 2016). The dorsal fin of blackchin guitarfish originates behind the tip of the pelvic fins (Akyol & Capape, 2011). *G. cemiculus* reach up to 265cm TL, but more commonly ~200cm TL (Last et al., 2016).

Glaucostegus granulatus are uniformly yellowish brown to greyish, with fins slightly lighter in color, and almost translucent snouts that are narrower and more pointed than other giant guitarfish species (Last et al, 2016). They grow to 229cm TL (Last et al., 2016).

Giant guitarfish are morphologically similar to the large hammerhead species listed on CITES Appendix II and to sawfish fins, listed in CITES Appendix I. Compliance mechanisms for these listed species may already be in place in many range and trading States. While the tall, upright dorsal fins of giant guitarfishes are similar in size, shape and color to those of wedgefishes (and hammerheads), giant guitarfish dorsal fins have large denticles concentrated along their leading edge. The caudal fins of giant guitarfishes also lack the well-developed lower lobe seen in wedgefishes. However, the creation of additional visual identification techniques and guides as well as the development of genetic techniques would assist not only this listing, but all CITES listings in general.

3.5 Role of the species in its ecosystem

Glaucostegus cemiculus and *G. granulatus*, like other Glaucostegidae, feed mainly on benthic invertebrates (Last et al., 2016, Borell et al., 2011). The diet of *G. cemiculus* is composed mainly of prawn (two thirds), crab, other crustaceans and fish (Notarbartolo di Sciara, et al., 2016).

Guitarfishes are prey for larger elasmobranch species, such as bull sharks or great hammerheads (Moore, 2017).

4. Status and Trends

4.1 Habitat trends

Coastal development is a major threat to giant guitarfish species (Jabado et al., 2018), impacting the habitat where they mainly occur and particularly threatening their inshore breeding, nursery and mating grounds (Marshall & Last, 2016, Notarbartolo di Sciara et al., 2016; Diop & Dossa, 2011).

In recent years, human coastal population size has increased markedly (Diop and Dossa, 2011). This leads not only to coastal development but also to increased pressure on inshore fisheries, including those that take Glaucostegidae as a target or bycatch. Coastal degradation and pollution from increased levels of human activity along shorelines also threaten these species' habitats (Notarbartolo di Sciara et al., 2016).

These pressures will likely lead to even further decreases in giant guitarfish populations, without improved management.

4.2 Population size

Global population size is unknown for *G. cemiculus*, *G. granulatus*, or any other *Glaucostegus* species.

4.3 Population structure

Unknown.

4.4 Population trends

Both blackchin and sharpnose guitarfish populations have significantly declined, up to 80% over the past three generation periods, due to historical and current overutilization, impacts of habitat loss and degradation, and limited fisheries management (Marshall & Last, 2016; Notarbartolo di Sciara et al., 2016). Historically, giant guitarfish catches have only been reported at the genus level, making it difficult to determine levels of population declines at the species-level.

Much can be learned from similar population trends in the closely related five sawfish species. Their marked population declines were noted almost three decades before a global strategy was initiated in an attempt to manage them, but unfortunately too late; recovery is now unlikely for many populations (Moore, 2017). Glaucostegidae, with their similar morphology, biology, and targeted catch patterns, are in danger of falling into the same decline pattern unless management for these species is urgently introduced.

Table 2. Population declines for *Glaucostegus cemiculus* and *Glaucostegus granulatus*

Region	Estimated declines	Reference
North western Indian Ocean	50-80% over the past three generation periods (15-30 years)	Jabado et al., 2017
East Atlantic	Over 50% decline in three generation periods; 80% decrease in landings in seven years	Notarbartolo di Sciara, et al., 2016 Diop & Dossa, 2011
Mediterranean	Probable extinction Local extinction in Balearic Islands and Sicily	Notarbartolo di Sciara, 2016; Psomadakis et al., 2009; UNEP Mediterranean Action Plan 2011
Indian Ocean	86% decline over five-year period (less than one generation)	Jabado et al., 2017

Atlantic Ocean:

In recent years, overall catches of sharks in the east Atlantic has decreased. Some species, such as sawfish, have almost completely disappeared, while formerly common species such as giant guitarfish have become very rare, indicating sharp population declines (Diop & Dossa, 2011). Prior to the 1970s elasmobranchs were caught primarily for local consumption. Starting in the 1970s, in response to the high demand for shark fins in eastern and southeastern Asia (primarily China), an unsustainable shark fishing industry developed and grew rapidly (Diop & Dossa 2011). Because of this new demand, in addition to being targeted for their meat, guitarfishes were targeted for their fins, which are regarded as highly valuable. This combined with an increase in coastal populations resulted in the overexploitation of marine resources with significantly increasing fishing effort and decreasing yields beginning in the 1990s, including the overfishing of demersal species. Since 2003, there has been a significant decline in elasmobranch landings (Diop & Dossa 2011). In the sub-region, elasmobranch fishing was initially concentrated in Gambia and Senegal, but it has spread to the other member countries as fishers migrate in response to areas becoming overexploited (Diop & Dossa 2011; Tous et al. 1998).

Blackchin guitarfish used to be taken in great numbers in Senegal, Guinea, Guinea-Bissau and Sierra Leone, until increased fishing pressure on shark stocks since the 1980s depleted populations of the more susceptible species within these waters. Giant guitarfishes have almost completely disappeared from the region. Diop & Dossa (2011) noted with particular concern the Endangered status of blackchin guitarfish. In Senegal, landings have dropped by 80% in 7 years-- from 4,050 t in 1998 to 821 t in 2005 (Notarbartolo di Sciara et al. 2007), indicating a severe drop in the population of this species. Data collection in the region is poor, and much of the species' decline must be inferred from reduction in catches, particularly since fishing pressure in the region has increased as additional people have moved into coastal regions (Diop & Dossa, 2011).

Compounding the problem is evidence that 95% of blackchin guitarfish that are caught are below their size at maturity, affecting the ability of the population to reproduce and recover (Diop & Dossa, 2011). In addition, populations of blackchin guitarfish are projected to decline 50% further in three generation periods (Notarbartolo di Sciara et al., 2016).

Mediterranean Sea:

G. cemiculus was once thought to be common in the Gulf of Gabes, and on the eastern coast of Tunisia in the southern Mediterranean (Whitehead et al, 1984; Quignard & Capapé 1971). Recent attempts to assess population status, however, have concluded that there is an apparent local extinction in the Mediterranean (Balearic Islands and Sicily) (Notarbartolo di Sciara, 2016). Blackchin guitarfish are no longer recorded in bottom trawl surveys, as well as from landings in several places across the Mediterranean (UNEP, 2011). Around Italy, blackchin guitarfish appear to have been extirpated (Psomadakis et al., 2009).

Arabian Sea and adjacent waters:

Sharpnose guitarfish are Endangered in the Arabian Sea and adjacent waters region. Although they were the most commonly reported shark-like batoid in research trawl surveys the United Arab Emirates (UAE) during 2002-2003, a 2016 trawl survey did not record any specimens (Jabado, 2018). Recent estimates have put *G. granulatus* population declines at 50-80% over the past three generation periods. With consistent ongoing high levels of fishing pressure, especially in coastal areas, declines will most likely continue into the future unless effective management measures are introduced (Jabado et al, 2018).

Indian Ocean:

Fishing efforts for shark-like batoids are particularly high in southeast Asia (Chen, 1996), where steadily decreasing population sizes have been inferred from declining catch rates (White & McAuley, 2003a).

In India, a decline of 86% was noted in the landings of wedgefishes and guitarfishes, including Glaucostegidae species, over the 5-year period 2002-2007 (Mohanraj et al., 2009; Jabado et al., 2017). Furthermore, anecdotal evidence suggests significant declines across the region, including in India, Pakistan and Iran (Jabado et al., 2017).

4.5 Geographic trends: See 4. 4

5. Threats

The primary threats to blackchin and sharpnose guitarfish are unmanaged and unregulated fisheries and trade. *Glaucostegus cemiculus* and *G. granulatus* are targeted species in West Africa, northwestern Indian Ocean, and South Asia, largely due to their highly valuable fins (Notarbartolo di Sciara et al, 2007; Marshall & Last, 2016; Jabado 2018). Baseline species-specific data for many shark-like batoids is mostly unavailable, however several reports suggest that these species are increasingly targeted for their fins (Jabado et al., 2015a,b; Diop & Dossa, 2011; Dulvy et al., 2014; Moore, 2017). Throughout portions of its range, blackchin guitarfish are targeted for their meat, fins, or both, and throughout its entire range they are susceptible to capture by various fishing gears used by demersal artisanal and industrial fisheries (Newell 2017).

Furthermore, females are more susceptible to fisheries because they are often larger than males, with more valuable fins, and move in closer to shore to give birth and mate. With an increase in coastal development, and the increasingly high demand for their large fins, population declines will likely be further accelerated (Marshall & Last, 2016).

Despite this, the Glaucostegidae are often considered to be bycatch species and therefore lacking management measures. However, Diop & Dossa (2011) highlighted that bycatch species are almost as abundant as targeted catches in many SCRP zone fisheries in West Africa, often with no regulation, and that far more management is needed to prevent critical declines.

Shark-like batoids, including Glaucostegidae, have become increasingly important in landings and targeted fisheries (Dulvy et al., 2014, White & Dharmadi, 2007). The overutilization of these two species likely occurs in all fisheries throughout their range, because they are easily targeted in shallow coastal waters and are susceptible to entanglement in many gear types, including trawls, gillnets, seine nets, and hook and line (Bentley, 1996, Cavanagh & Gibson, 2007; FAO 2016d; Notarbartolo di Sciara, 2016; White & McAuley, 2003a, b). White et al. (2013) suggest that the dorsal fins of Glaucostegidae and other shark-like batoids may also increase their susceptibility to many fishing gears, as their dorsal fins may readily become entangled in trawls, gillnets and seines.

In Sierra Leone, *Glaucostegus cemiculus* accounted for approximately 40.47% of landed batoids (Seisay, 2005) and in Guinea-Bissau, blackchin guitarfish are a primary target species for several fisheries (Notarbartolo di Sciara et al., 2016). In 2008, blackchin guitarfish were approximately 14% of the catch in bottom trawls off the coast of Turkey (Keskin et al., 2011). *Glaucostegus granulatus* also comprised approximately 18% of general elasmobranch and 92% of rhinopristoid landings in Kuwait (Moore et al., 2012). However, despite making up such large proportions of catch, no management exists for these biologically vulnerable and susceptible species. Gillnet fisheries targeting shark-like batoids are prevalent in Southeast Asia (Bentley, 1996, Chen, 1996), and reductions in populations can be inferred by the decline in catch rates (White & McAuley 2003a,b), which often fall steeply after only a short period of targeting (Suzuki, 1996).

Targeting of shark-like batoids such as Glaucostegidae may be increasing—in Indonesia, there was a 19% increase in the proportion of this species-group landed from 1981-2003 (Ministry of Marine Affairs and Fisheries 2003, White & Dharmadi 2007). Suzuki (1996) describes in detail that rapid growth in the price of shark fins in Hong Kong caused increased targeting of sharks, with Rhinobatidae (which at that time also included Glaucostegidae species), fetching the highest prices. In the Gujarat region of India, increased levels of fishing activities have also led to higher pressures on populations. From 2004 to 2010, the number of trawlers in the region increased from around 6,600 to 11,500 boats (Jabado et al., 2017), but no regulations were introduced to manage this increased threat to the guitarfishes and other vulnerable species.

Even if current levels of fishing pressure are not increased, significant declines of these species are likely to continue (Jabado et al., 2017; Diop & Dossa, 2011). Unfortunately, additional targeting and increasing numbers of boats are likely to accelerate population decline trends already seen across giant guitarfish ranges.

6. Utilization and trade

6.1 National utilization

Guitarfish meat is considered to be good quality and is often consumed locally (Haque et al., 2018). Blackchin guitarfish are consumed domestically in West Africa as fresh or dried fish, known as “sali”, which is made from both sharks and shark-like batoids (Akyol & Capape, 2014).

Both sharpnose and widenose guitarfish are found in markets in Bangladesh, with approximately 15,000kg of guitarfish products moving through a single processing center in Cox’s Bazar from 2012-2015 (Haque et al., 2018). The meat is dried and the fins are exported to Asian and European markets (Haque et al., 2018).

The FAO (2016) reported 5000t of “guitarfish” landed globally in 2014, but this is most likely an underestimation of total global landings, because underreporting and misidentification is common for elasmobranch species. When elasmobranch catches are reported, the data were generally not reported at the species level (Bradai et al. 2012; Echwikhi et al. 2012).

6.2 Legal trade

Giant guitarfish products enter trade legally, unless taken in contravention of national legislation or regional fisheries management measures (see section 7 and 8). Because management is so scarce, almost all trade of Glaucostegidae products is legal.

6.3 Parts and derivatives in trade

Shark-like batoids, such as Glaucostegidae, produce among the highest valued fins in international trade, known as “white fin” (White & McAuley 2003a, Last et al, 2016). The meat is sometimes also salted and exported (Moore 2017) but this is far less common.

In West Africa, the price paid to fishermen for shark fins may be as high as 100 USD per kilogram (Ducrocq, 1997) or 100 Euro per kg (Notarbartolo di Sciara et al., 2016). Alternatively, shark fins may be directly bartered for Asian manufactured goods, which are then sold on the African markets (Diop & Dossa, 2011). Blackchin guitarfish landed in The Gambia have their dorsal and caudal fins removed (Moore, 2017), likely for export because of their high value.

The most common fins in trade from Glaucostegidae are the first and second dorsal fins and entire caudal fins, which are typically traded as a set from each individual animal. Due to distinctive fin shapes and denticle size, it is likely that these fins can be identified to the Family level (i.e., all *Glaugostegus* species) in their most commonly traded dried and unprocessed form (D. Abercrombie, pers. comm.).

Giant guitarfish fins have been seen in shops in Hong Kong, for auction and sale in Oman and United Arab Emirates, and in some instances in Bangladesh, where large numbers of sharpnose guitarfish are caught. Because no part of the animal goes to waste, but no shark fin soup is consumed within Bangladesh, these high value fins are likely sold for export (Haque et al., 2018).

6.4 Illegal trade

Because there are no species-specific management measures in place for Glaucostegidae, the only illegal trade that occurs is from specimens that are caught within marine protected areas and shark sanctuaries, and those that are finned in range States or fisheries where shark finning is prohibited.

6.5 Actual or potential trade impacts

International demand for guitarfish fins drives much of the targeting and unsustainable catch of Glaucostegidae across their ranges, and consequential depletion of stocks.

Regulation of international trade through an Appendix II listing for this species is necessary to ensure that giant guitarfish populations do not follow the closely related sawfishes, by declining to the point where they require listing on Appendix I. By ensuring that the trade in their fins is sustainable and legal, these species will receive the management that they need to ensure they are not driven further towards extinction.

7. Legal instruments

7.1 National

Pakistan has prohibitions in place for guitarfish species, but other than this, there are no species-specific conservation measures for either of these species. While a larger number of range States, including the SFRC members, have adopted a national plan of action for sharks, many are still in the early stages of implementation and/or do not incorporate any specific management measures for giant guitarfish species. Cabo Verde, Guinea, Gambia, and Sierra Leone have all banned finning, and Senegal established size limits for *G. cemiculus* (106 cm for males and 100 cm for females) (Diop & Dossa 2011). Newell (2017) concluded that in this region, current regulations are likely inadequate to reduce the significant threat caused by commercial overutilization.

Several countries have declared their Exclusive Economic Zones to be shark sanctuaries, often banning the commercial fishing of sharks, whether targeted or bycatch, and the sale and trade of shark species. However, a large majority of shark sanctuaries are outside of the range of blackchin and sharpnose guitarfish species, and these species remain unmanaged throughout much of their range.

In the eastern Atlantic, Mauritania's Banc d'Arguin National Park and Guinea-Bissau's marine protected areas provide some respite for these overfished species, and Israel has protected all species of sharks and rays. In the northwestern Indian Ocean, among others, the UAE bans shark fin exports. Sudan and Saudi Arabia also ban the fishing of sharks. However, other than this, little management exists to protect giant guitarfish.

7.2 International

Coastal species such as those included in the family of Glaucostegidae are not usually managed under international legal instruments. However, they have been identified as part of a priority group of species that is highly threatened by the Mediterranean Action Plan (Notarbartolo di Sciara et al., 2016).

Since 2012, blackchin guitarfish has been listed in Annex II of the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention. Therefore, it is illegal to land these species in the Mediterranean and they "must be released unharmed and alive to the highest extent possible". No studies are available on the survival rates of guitarfishes after being released from fishing gear interactions so it is unknown to what extent this requirement reduces the fishing related mortality of both species (Newell 2017). Annex II also prohibits trawling within three nautical miles of the shoreline. Recent information from Tunisia, Lebanon, and Egypt indicates that the fisheries in these countries may be inadequately regulated (Echwikhi et al. 2013; Echwikhi et al. 2012; Lteif 2015; Samy-Kamal 2015).

8. Species management

8.1 Management Measures

There are almost no management measures for giant guitarfishes, and they are not granted protection or management under any international conventions. Giant guitarfishes are likely to continue to suffer population declines until they qualify for CITES Appendix I, unless range-wide, enforceable measures are adopted to adequately manage the catch and trade of these species.

A CITES Appendix II listing will not only ensure that the trade is sustainable and legal, but also draw attention to these drastic population declines (Jabado, 2018) and spur the development of local management measures to ensure the survival of the giant guitarfishes.

8.2 Population monitoring

There are no stock assessments for any Glaucostegidae. All information on population trends centres upon fisheries landings.

9. Information on similar species

Because of the morphological similarities among the six Glaucostegidae species, these are often mislabelled by both the scientific and fisheries communities. For example, Sahafi and Kamali (2003) misidentify *G. halavi* as *G. granulatus*. This issue is not unique to giant guitarfish, but rather is common across all Rhinopristiformes.

Identification even of whole bodies of giant guitarfish species from this family can be difficult, which is why these are proposed for listing as lookalikes for *G. cemiculus* and *G. granulatus*.

Halavi Guitarfish, *Glaucostegus halavi* (Forsskal, 1775)

Halavi guitarfish are a medium size guitarfish, growing up to 187cm TL (Jabado et al, 2017). This species is endemic to the Arabian Sea and adjacent waters, recorded from the Red Sea, Sea of Oman, Gulf of Aden, and the Arabian Sea to Pakistan and Northern India. Declines of halavi guitarfish are thought to be at least 50% in the southern Gulf, with large impacts on species anticipated in areas where there is heavy trawling activity (Jabado et al., 2017). In the Arabian/Persian Gulf, declines in landings of these species have been noted from 10-20 individuals observed daily, reduced to 1-2 per site visit, despite steady or sometimes increasing fishing effort (Jabado 2018).

Declines for this species are estimated to have exceeded 30% across their entire range over the past three generations, with declines projected to continue without proper management and reductions in catch.

Widenose Guitarfish, *Glaucostegus obtusus* (Muller & Henle, 1841)

The widenose guitarfish is among the smallest of the giant guitarfish, growing to only 93cm TL. It occurs from inshore waters to a depth of 60m in the Northern Indian Ocean from Pakistan to Thailand (Jabado et al., 2018; Last et al., 2016). There are some reports of large population declines off the coast of India, and range-wide a decline is estimated of 80-90% over the last three generations (Jabado et al., 2018).

Widenose guitarfish have an overlapping range with sharpnose guitarfish, *G. granulatus*. They are the only species in the family with a short snout, but their fins are still morphologically similar to other members of Glaucostegidae.

Clubnose Guitarfish, *Glaucostegus thouin* (Anonymous, 1798)

Clubnose guitarfish are among the largest of the giant guitarfish species, reaching up to 300cm TL, but commonly seen to 250cm TL (Last et al, 2016). Little is known of the biology of these species. Their range extends from India to Indonesia (Last et al, 2018), with one reported record in the Red Sea, although no further information exists on *G. thouin* in this region. Clubnose guitarfish can be distinguished from other giant guitarfish by the bulbous lobe on the end of their snout, but their fins, which are internationally traded, are indistinguishable from those of other Glaucostegidae.

Giant Guitarfish, *Glaucostegus typus* (Bennet, 1830)

The Giant guitarfish is an Indo-west Pacific species, occurring from India through the east China Sea and south to Australia (Last et al, 2016). Growing up to 270cm TL, this species lives in coastal areas but has been recorded from depths down to 100m. Giant guitarfish was formerly known by several scientific names, but all appear to be the same species (Last et al, 2016). This species has an overlapping range with the clubnose guitarfish, but whole specimens can be distinguished due to their lack of a bulbous nose.

Ecological Risk Assessments in Australia have shown *G. typus* to be a high risk species, due to its low productivity levels and range that overlaps with several fisheries, including gillnet and trawl (Salini et al. 2007).

The species is often confused with *G. cemiculus*, so catch and distribution data may be mislabeled (Marshall & Last, 2016).

10. Consultations

See Annex 1

11. Additional Remarks

12. References

Akyol, O., and Capape, C. 2014. Distribution of blackchin guitarfish *Rhinobatos cemiculus* E. Geogroy Saint-Hilaire, 1817 (Elasmobranchii: Rhinobatidae) with first records from Izmir Bay (Turkey, northeastern Aegean Sea). *Turkish Journal of Zoology*. doi:10.3906/zoo-1307-32

Borrell, A., Cardona, L., Kumarran, R.P., and Aguilar, A. 2011. Trophic ecology of elasmobranchs caught off Gujarat, India as inferred from stable isotopes. *ICES Journal of Marine Science*. 66 (3), 547-554. doi:10.1093/icesjms/fsq170

- Bradai M.N., Sai'di B., Enajjar S. and Bouai'n A. (2006) The Gulf of Gabe's: a spot for the Mediterranean elasmobranches. In Bas, Usta N., Keskin C., Serena F. and Seret B. (eds) *The Proceedings of the Workshop on Mediterranean Cartilaginous Fish with Emphasis on Southern and Eastern Mediterranean*. Istanbul: Turkish Marine Research Foundation, Publication No. 23, pp. 107–117.
- Buen, F. 1935. Fauna ictiológica: catálogo de los peces ibéricos, de la planicie continental, aguas dulces, pelágicos y de los abismos próximos. Madrid: Consejo Oceanográfico Ibero-Americano.
- Capapé, C. and J. Zaouali, 1994. Distribution and reproductive biology of the blackchin guitarfish, *Rhinobatos cemiculus* (Pisces: Rhinobatidae), in Tunisian waters (central Mediterranean). *Aust. J. Mar. Freshwat. Res.* 45:551-561.
- Diatta, Y., Gueye-Ndiaye, A., Ndiaye, P., Ndaw, S., Reynaud, C. & Capapé, C. 2009. Production of elasmobranch species off the coast of Senegal. *Elasmovisor*, 22-25.
- Diop, M. & Dossa, J. (2011) *30 Years of shark fishing in West Africa*. Corlet/ Condé-sur-Noireau (France): Fondation internationale du Bassin d'Arguin, Regional Marine and Coastal Conservation Programme for West Africa, and the Sub-Regional Fishing Commission.
- DUCROCQ M. 1997. Projet d'amélioration des connaissances et de la conservation des ressources en poissons cartilagineux de la zone côtière de la Guinée-Bissau et du parc naturel du banc d'Arguin, réunion constitutive du réseau de planification côtière en Afrique de l'Ouest, Union mondiale pour la nature, Bubaque, (Guinée-Bissau), 24-26 novembre 1997, 8 p
- Dulvy, N.K., Fowler, S.L., Musick, J.A., Cavanagh, R.D., Kyne, P.M., Harrison, L.R., Carlson J.K., Lindsay Davidson, L.N.K. 1,2, Fordham S.V., Francis, M.P., Pollock, C.M., Simpfendorfer, C.A., Burgess, G.H., Carpenter, K.E., Compagno, L.J.V., Ebert, D.A., Gibson C., Heupel, M.R., Livingstone, S.R., Sanciangco, J.C., Stevens, J.D., Valenti, S., White, W.T. 2014. . Extinction risk and conservation of the world's sharks and rays. *eLife* 3, e00590
- Haque, A. B., Biswas, A. R., and Latifa, G. A. 2018. Observations of shark and ray products in the processing centres of Bangladesh, trade in CITES species and conservation needs. *TRAFFIC Bulletin* Vol. 30 No 1. Pp 6-14.
- Jabado, R. W., Kyne, P.M., Pollom, R.A., Ebert, D.A., Simpfendorfer, C.A., Ralph, G.M., Dulvy, N.K. 2017. *The conservation status of sharks, rays, and chimaeras in the Arabian sea and adjacent waters*. Environment Agency—Abu Dhabi, UAE and IUCN Species Survival Commission Shark Specialist Group. Vancouver, Canada. 236pp.
- Jabado, R.W. 2018. The fate of the most threatened order of elasmobranchs: shark-like batoids (Rhinopristiformes) in the Arabian Sea and adjacent waters. *Fisheries Research* 204 (2018) 448-457.
- Last, P. R., White, W. T., Carvalho, M.R., Seret, B., Stehmann, M.F.W., & Naylor, G.J.P. 2016. *Rays of the World*. Cornell University Press. 790pp.
- Marshall, A.D. & Last, P.R. 2016. *Glaucostegus granulatus*. The IUCN Red List of Threatened Species 2016: e.T60166A104009186. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T60166A104009186.en>. Downloaded on **29 May 2018**.
- Mohanraj, G., Rajapackiam, S., Mohan, S., Batcha, H. and Gomathy, S. 2009. Status of elasmobranchs fishery in Chennai, India. *Asian Fisheries Science* 22(2): 607–615.
- Moore, A.B.M. 2017. Are guitarfishes the next sawfishes? Extinction risk and an urgent call for conservation action. *Endangered Species Research*. <https://doi.org/10.3354/esr00830>.
- Newell, B.M. (2017) Status Review Report of Two Species of Guitarfish: *Rhinobatos rhinobatos* and *Rhinobatos cemiculus*. Report to National Marine Fisheries Service, Office of Protected Resources. 62 pp.
- Notarbartolo di Sciara, G., Bradai, M.N., Morey, G., Brahim, K., Camara L., Litvinov, F., Dulvy, N. Doumbouya, F., Ducrocq, M., Heenan, A. & Sidi, N. 2016. *Glaucostegus cemiculus*. The IUCN Red List of Threatened Species 2016: e.T63132A104009894. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T63132A104009894.en>.
- Psomadakis, P.N., Maio, N. & Vacchi, M. (2009) The chondrichthyan biodiversity in the Gulf of Naples (SW Italy, Tyrrhenian Sea): An historical overview. *Cybio*, 33, 199-209.

- Sahafi, H.H., Kamali, I., 2003. Ornamental Fishes of the Persian Gulf. Iranian Fisheries Research Organization, Tehran, Iran (pp 125).
- Salini J, Pillans R, Ovenden J, Buckworth R, Gribble N, McAuley R, Stevens J. 2007. Northern Australian sharks and rays: the sustainability of target and bycatch species, phase 2. FRDC Project:2002/064. CSIRO Marine and Atmospheric Research, Cleveland
- Seck AA, Diatta Y, Diop M, Guelorget O, Reynaud C, Capape C. 2004. Observations on the reproductive biology of the blackchin guitarfish, *Rhinobatos cemiculus* E. Geoffroy Saint-Hilaire, 1817 (Chondrichthyes, Rhinobatidae) from the coast of Senegal (eastern tropical Atlantic). *Sci Gerud* 27: 19–30.
- Valadou, B. 2003. Donnees biologiques et ecologiques sur les principales populations d'elasmobranches capturees dans les eaux du Parc National du Banc d'Arguin (Mauritanie). PhD, Universite
- Valadou, B., Brêthes, J.-C. & Ihejih, C.A.O. (2006) Biological and ecological data of five elasmobranch species from the waters of the Banc d'Arguin National Park (Mauritania). *Cybium*, 30, 313-322
- White W.T., McAuley R. 2003a. *Rhinobatos typus*. In: IUCN (2012) IUCN Red List of Threatened Species. Version 2012.1. Available at www.iucnredlist.org (accessed 09 January 2012)
- Whitehead, P. J. P.; Bauchot, M. L.; Hureau, J. C.; Nielsen, J.; Tortonese, E., (Eds), 1984: Fishes of the north-eastern Atlantic and the Mediterranean, Vol. 1. UNESCO, Paris, ISBN 92- 3-002215-2.

Annex 1: Range States for the blackchin guitarfish or the sharpnose guitarfish

CITES Party	Support Indicated (Yes/No/Undecided/No objection)	Summary of Information Provided
Albania		
Algeria		
Angola		
Bangladesh		
Benin	Yes	
Bosnia and Herzegovina		
Cameroon		
Cabo Verde	Yes	
Congo		
Côte d'Ivoire	Yes	
Croatia		
Cyprus		
Egypt		
France		
Gabon		
Gambia	Yes	
Ghana		
Greece		
Guinea		
Guinea-Bissau		
India	Yes	
Iran		
Iraq		
Italy		
Kuwait		
Lebanon		
Liberia	Yes	
Libya		
Maldives	Yes	
Malta		
Mauritania	Yes	
Monaco	Yes	
Montenegro		
Morocco		
Myanmar		
Namibia		
Nigeria	Yes	
Pakistan	Undecided	
Portugal		
Saudi Arabia		
Senegal	Proponent	
Sierra Leone	Yes	
Slovenia		
Spain		
Sri Lanka	Yes	
Syrian Arab Republic		
Togo	Yes	
Tunisia		
Turkey		
Ukraine	Yes	
United Arab Emirates		