EC request on 3 species of rays

ECOREGION North East Atlantic and Mediterranean Sea
SUBJECT Special request on the conservation of three species of ray

Advice Summary

ICES considers that stocks of common sawfish *Pristis pristis* and small-tooth sawfish *P. pectinata* in the NE Atlantic and Mediterranean Sea are severely depleted, and presumed extirpated from EC waters, with only historical records of these species in European Seas. The status of populations in African waters of the NE Atlantic is uncertain. Both these sawfish species are listed on Annex I of CITES.

Given the threatened status of sawfish populations throughout their distribution range, protective management measures are required. Placing all species of sawfish (*Pristis* spp.) on the Prohibited species list would provide additional protection for any vagrants in EC waters, but more importantly would allow the EC to more clearly protect these species in EU fisheries operating in non-EU waters.

ICES considers that stocks of common guitarfish *Rhinobatos rhinobatos* and blackchin guitarfish *Rhinobatos cemiculus* in the NE Atlantic and Mediterranean Sea are probably depleted, and possibly near-extirpated from some of their former habitats in EC waters. Given the uncertainty in their current status, that they are large-bodied elasmobranchs with coastal distributions, precautionary management measures are required. However, guitarfish may be locally common in some areas, and these may be able to support low levels of exploitation.

Given that guitarfish may still be locally common in some EC waters there is a better rationale for managing guitarfishes within the existing quota system at the current time and not using the Prohibited species list. In terms of the ICES area, a TAC for guitarfish *Rhinobatos* spp. in sub-areas VIII-IX could be established and it is recommended that this is set to zero.

ICES consider that giant devil ray *Mobula mobular* in the Mediterranean Sea and adjacent parts of the NE Atlantic should be considered highly susceptible to over-exploitation. Given the uncertainty in their current status, that they are large-bodied and unproductive elasmobranch (gravid females may only carry a single pup), precautionary management measures are certainly required. In terms of the NE Atlantic, mobulid rays are mostly taken in tuna fisheries, and it is suggested that the ICCAT shark group, ICES WGEF and STECF have a meeting to better understand mobulid rays in high seas fisheries.

Given the limited amount of data available on mobulid rays in European waters and in EC fisheries, a dedicated meeting of ICCAT, ICES and STECF is suggested to better address the conservation and management of these species.

Request

The Commission's attention has been drawn to the status of three species of elasmobranchs in EU waters. According to the ONG Oceana, these three species count among 11 elasmobranch species that are endangered and that should receive protection under EU regulations. These are:

*Devilfish (*Mobula mobular*) – listed by IUCN as endangered. There seems to be no directed fishing for this species in EU waters. It is a bycatch in swordfish driftnets mainly in the Mediterranean.*

Sawfish (in particular Pristis pristis; P. pectinata, P. perotteti *estimated extinct in EU waters) – listed by IUCN as critically endangered. Impacted by coastal artisanal fisheries and habitat modification.*

Guitarfish (in particular Rhinobatos rhinobatos, *other species found in EU waters to be identified) – listed by IUCN as endangered.*

These species are not specifically concerned by EU conservation measures. The driftnets ban, the Mediterranean technical measures and EU/national area-based measures to protect certain habitats/species may be affording some degree of protection. The Commission is interested in assessing the feasibility and appropriateness of specific conservation measures for the species concerned in the framework of the regulation of annual fishing opportunities.

The fishing opportunities regulation may restrict catches and fishing effort for these species, up to the establishment of a zero TAC. It would also be possible to include them among the species to which article 6 of the regulation applies. Article 6 foresees that it shall be prohibited for EU vessels to fish for, to retain on board, to tranship and to land certain species considered as particularly in need of protection from fishing impacts.

- *ICES is requested to provide advice on the fisheries or fishing activities that have an impact on the conservation of the species listed above that are found in EU waters. ICES is then requested to review, assess and summarise the best available scientific information concerning the state of the stocks of these species.*
- *ICES is requested to distinguish between stocks in the Mediterranean and stocks in the Atlantic Ocean / North Sea, and to discuss possible differences in conservation status and in fishing impacts in each of these two broad areas.*
- *ICES is requested to formulate management recommendations in the form of measures that would provide effective protection and promote the recovery of these species, including, but not limited to, the possibility of granting them status of prohibited species within the meaning of Article 6 of the fishing opportunities Council Regulation (EU) nr 53/2010.*

ICES Advice

ICES consider that many of the largest-bodied, inshore, demersal elasmobranchs are some of the fish species that have most declined in abundance and extent due to a long history of fishing pressure, as has been documented for some white skate, common skate and angel shark (ICES, 2010). The biological vulnerability of elasmobranchs is well documented, and has formed a strong rationale in earlier ICES advice. The high degree of overlap between inshore species with fishing pressure and other forms of human disturbance also results in fewer sites of natural refuge.

Sawfish

Both sawfish species are presumed extirpated from the ICES area and the Mediterranean Sea. ICES knowledge is that no catches of these species have been reported from the Mediterranean Sea for at least the last 50 years. It is possible that the European specimens reported in the early ichthyology literature and museum specimens represent the northern range limits or vagrants from populations along the west coast of Africa. The status of sawfish populations along the West African coast is uncertain, but given the depleted status of sawfish worldwide, there should be a cause of concern for this group of fish. All but one species of sawfish are listed on Appendix I of CITES[1].

Although adding sawfish to the Prohibited species list in EC waters would not necessarily be of practical benefit to sawfish conservation, these regulations could be extended to EU vessels operating in non-EU waters. Given that there are EU fisheries off the coast of West Africa, where there would presumably still be populations, the inclusion of all sawfish species to the Prohibited species list has the potential to benefit stocks. Given the low productivity of sawfish, a long-term conservation strategy is needed to allow stocks to rebuild. Hence, listing them on the Prohibited Species list is appropriate.

Guitarfish

Both European species of guitarfish are also thought to have declined in many EC waters, although they may be more common further south and in the eastern Mediterranean. ICES recommend that a TAC for guitarfish *Rhinobatos* spp. is established for ICES sub-areas VIII- IX, and that this is set to zero

Giant devil ray

While there is no targeted fishery for this species, they are caught as a bycatch in swordfish fisheries, mainly in the Mediterranean Sea. Low levels of landings (1-3 tonnes) are occasionally declared by Spain from Division IXa. As a large-bodied elasmobranch, they may have a relatively high discard survival rate, and so should be released unharmed where practical. This is in line with advice for certain large-bodied skate species in the North-east Atlantic.

[1] Although *Pristis microdon* is listed on CITES Appendix II, this is for the "*exclusive purpose of allowing international trade in live animals to appropriate and acceptable aquaria for primarily conservation purposes*"

Basis of advice

Sawfish

Two species of sawfish (Pristidae) are reported to occur in the North-east Atlantic and Mediterranean Sea, the small-tooth sawfish *Pristis pectinata* (which has 24–32 pairs of teeth on the saw) and the common sawfish *Pristis pristis* (15–20 pairs of teeth on the saw). The main distributions of both of these species in the eastern Atlantic are further south, along the African coast. However, the northern limits of both species may have historically extended to the EC waters of the southernmost parts of the Iberian Peninsula and Mediterranean Sea (Stehmann & Bürkel, 1984). It should be noted that although ichthyological accounts from the early 1900s include sawfishes (e.g. Lozano Rey, 1928; Nobre, 1935; Tortonese, 1956), such accounts do not indicate sawfishes were frequent in European seas. The status of sawfishes prior to this time is unclear. It is possible that the records of sawfish in European waters are based on vagrants from the more southerly populations. The status of sawfish off the western coasts of Africa is unclear, but given their inshore distribution and susceptibility to capture they are unlikely to be common.

Little is known about sawfish in European waters, and the biology and status of both species in the eastern Atlantic is poorly understood. Nevertheless, there is some more information on sawfishes elsewhere in the world. Sawfish are generally coastal and estuarine species that may have a patchy distribution, and in some areas they will move into freshwater. They have long been exploited for the 'rostrum', which has been marketed as a marine curio for many years. Given their inshore distribution, large size (both species can attain lengths of >4 m), and that they presumably have a low population growth rate, they are susceptible to exploitation, and given that coastal and estuarine ecosystems are an important habitat for these species, there will likely be an extensive overlap between their distribution and fishing grounds. The 'saw' may also make them susceptible to capture in static nets.

Both species are categorised as Critically Endangered by the IUCN (Gibson *et al.*, 2008).

Guitarfish

Two species of guitarfish (Rhinobatidae) occur in the North-east Atlantic and Mediterranean Sea, the blackchin guitarfish *Rhinobatos cemiculus* (in which the rostral ridges are narrowly separated) and the common guitarfish *Rhinobatos rhinobatos* (in which the rostral ridges are widely). The main distributions of common and blackchin guitarfish in the eastern Atlantic extend from Angola to the Iberian Peninsula, including the Mediterranean Sea (McEachran & Capapé, 1984a). Common guitarfish reach a length of approximately 100 cm, and the blackchin guitarfish may grow to 180 cm. A third species, Halave's guitarfish *Glaucostegus (Rhinobatos) halavi*, has also been recorded from the Mediterranean, but is an Indo-Pacific species and probable Lessepsian migrant. This latter species is not considered here.

The distribution of these two species of guitarfish extends from the northern Iberian Peninsula in the north to Angola, including the Mediterranean Sea. Although the distribution is fairly wide, these species will be subjected to fishing pressure over much of its range. Its existence in coastal areas makes this species an easy target for inshore fisheries. Limited data are available on the biology, but it is large and is likely to have a relatively unproductive and vulnerable life history.

Both *Rhinobatos rhinobatos* and *R. cemiculus* have disappeared from the waters of the North-western Mediterranean, but are still present and usually fished in the waters of the South-eastern Mediterranean (e.g. Greek and Lebanese waters) where bottom trawl fishing is very limited. Reported landings of this species are given in Table 1 and trends in reported Greek landings shown in Figure 1. They are also known to be fished in Tunisia and Libya, although catch estimates are not available for these parts of the Mediterranean (Abella *et al*, 2010).

In the northern Mediterranean, where both species used to be quite common (e.g. see Doderlein (1884) concerning their daily presence on the Palermo fish market); both disappeared from bottom trawl surveys, from the Alboran to Aegean Seas, within the MEDITS international programme (although inshore populations may not be surveyed sufficiently well). Both species disappeared from the landings in Mazzara del, and appear to have been extirpated from parts of their former range. In the Balearic Islands both species were considered as typical inhabitants of unvegetated sandy bottoms. Old fishermen reported their relative frequency during the first half of the 20th century, but nowadays they seem to be extirpated. In areas of the southern Mediterranean (e.g. Gulf of Gabés, but perhaps elsewhere along the less fished Mediterranean African coast) both species are still present in the catch, but with a large proportion of immature fish.

While there are no target fisheries for guitarfish, annual landings of 3–117 t per year are declared by Greece, with occasional landings made by Albania and Palestine (Source FAO Capture Production). There are no declarations from any other European countries, although they may have been recorded under generic landings categories. No landings data were available for other countries likely to capture these species in the Mediterranean (including Turkey, Syria and

nations along the coast of North Africa). ICES is not qualified to comment on the status of landings information from the Mediterranean.

Off the West African coast, this species is taken as bycatch of international shrimp trawl fleets, bottom trawl cephalopod fisheries and in artisanal gillnet fisheries. It is targeted for its meat, which is salted, dried and exported within the region and its fins are used to supply the Asian fin trade market. Landings data for West Africa are incomplete, although several nations (Ivory Coast, Benin, Liberia and Senegal) have reported landings over the course of the last decade. The relationship between Mediterranean and Atlantic stocks is unclear.

Given the evidence for regional extirpations of *Rhinobatos* spp. in the North-western Mediterranean Sea and intense and continuing fishing pressure throughout this species' inshore habitats in the Mediterranean Sea and along the West African coast, their vulnerable life history characteristics, there is no reason to suspect that this species will not suffer similar declines to those observed in the northern Mediterranean throughout the rest of its range. Additionally, other guitarfishes and wedgefishes have undergone severe declines elsewhere in the world (e.g. *Rhynchobatis luebberti*) and the future fishing pressure in shallow coastal habitats is unlikely to decrease.

The status of these species should be monitored carefully. At present, this species is not subject to any conservation or management measures. It recommended that species specific landings data, and fishing effort should be recorded and analysed (IUCN 2010).

Both species are categorised as Endangered by the IUCN, on the basis of past and suspected future declines (Gibson *et al.*, 2008).

Giant devil ray

Giant devil ray is a large, pelagic ray which can attain a size of 5.2 m disc width (McEachran & Capapé, 1984b) and their aggregating nature could make them susceptible to fishing activities. Giant devil ray occur in offshore, deep waters, around oceanic islands and, occasionally, in shallow waters (Bradai and Capapé 2001). They occur throughout the Mediterranean Sea, especially in the western basins (see Scacco *et al.*, 2008 for an overview), in waters ranging in depth from few tens of metres to several thousand metres (with the exception of the northern Adriatic) and possibly in the nearby North Atlantic.

Although there is no directed fishing for this species in Mediterranean waters, it is a bycatch in swordfish fisheries. For example, in the Italian Ionian Sea it represents 0.6% (in Porto Cesareo) and 3.2% (in Gallipoli) of the whole catch in number of individuals in the longline fisheries. In the same area, giant devil ray represents 6-7% in number of the total catches of the “ferrettara” gillnet (small-meshed driftnet with length < 2 km, mesh width < 100 mm, 3 m hight, which is allowed only inside the 3 miles coastal stripe).

Outside the Mediterranean it reportedly occurs along the coast of Africa from the Iberian Peninsula to Senegal, including the Canary Islands, Madeira and the Azores, although a vagrant has also been recorded off southern Ireland (Notarbartolo di Sciara 1987; McEachran & Capapé, 1984b). However, since expert examination is needed to distinguish *M. mobular* from *M. japanica*, a species known from the tropical Atlantic (Notarbartolo di Sciara 1987), past reports of giant devil ray from the Atlantic may have been due to incorrect identification of spinetail devil ray.

There are no declared landings of this species within the Mediterranean Sea. Landings have been declared by Spain from the North-east Atlantic (Table 2). FAO fisheries statistics also include large quantities of ‘Mantas, devil rays nei’ in the reported landings of Liberia, ranging from 23 t (in 2006) to 931 t (in 2000). ICCAT may have access to data and information with which to better evaluate the status of this species, and other mobulids, in the NE Atlantic.

Mobulids may be some of the least productive elasmobranch species. Biological studies on several species indicating that gravid females may carry only one large pup (Last & Stevens, 2009). McEachran & Capapé (1984b) considered the fecundity to be 1-2.

Bycatch rates are considered to be unsustainable by the IUCN, which has categorised devil ray as ‘Endangered’ (Gibson *et al.*, 2008; IUCN 2010).

Methods

In the absence of suitable species-specific information from landings data, and a paucity of appropriate fishery-independent survey data (which precludes a formal assessment), the status of the various species is gauged using historical knowledge of the fishes from early literature and their general biology.

Extra information

The list of Prohibited species on the TACs and quotas regulations is an appropriate measure for trying to protect the marine fishes of highest conservation importance, particularly those species that are also listed on CITES and various other conservation conventions. Additionally, there should be sufficient concern over the population status and/or impacts of exploitation that warrants such a **long-term** conservation strategy over the **whole** management area.

It should also be recognised that some species that are considered depleted in parts of their range may remain locally abundant in certain areas, and such species might be able to support low levels of localised exploitation. Additionally, some fisheries may have low incidence of bycatch, where discard mortality is high. From a fisheries management viewpoint, advice for a zero or near zero TAC, or for no target fisheries, is very different than a requirement for 'Prohibited species' status, especially as a period of conservative management may benefit the species and facilitate a return to commercial exploitation in the short term.

Additionally, there is a strong rationale that the list of Prohibited species should not be changing regularly, as this could lead to confusion for both the fishing and enforcement communities.

Sources

Abella, A.J., Baino, R.t. & Serana, F. 2010 Some information on Fisheries, conservation and research on elasmobranchs in the Mediterranean Sea. Working Document to WGEF 2010.

Bradai, M.N. & Capapé, C., 2001. Captures du diable de mer, *Mobula mobular*, dans le Golfe de Gabès (Tunisie méridionale, Méditerranée centrale). Cybium, 25, 389–391.

Doderlein 1884 Ricorrenza del Rhinobatus halavi Ruppnelle acque marine della Sicilia. Naturalista Siciliano, Palermo, 7 pp

Gibson, C., Valenti, S.V., Fordham, S.V. and Fowler, S.L. 2008. The Conservation of Northeast Atlantic Chondrichthyans: Report of the IUCN Shark Specialist Group Northeast Atlantic Red List Workshop. viii + 76 pp.

ICES. 2010. Report of the Working Group on Elasmobranch Fishes. Horta, Portugal. 22-29 June 2010.

IUCN. 2010. International Union for the Conservation of Nature Red List of Threatened Species. Version 2010.2. Downloaded 12 July 2010. www.iucnredlist.org

Last, P.R. and Stevens J.D. 2009. Sharks and rays of Australia. Second Edition. Harvard University Press, Massachusetts, 644pp.

Lozano Rey, L. 1928. Fauna Ibérica: Peces. Museo Nacional de Ciencias naturals, Madrid, 692 pp.

McEachran, J.D. & Capapé, C. 1984a. Rhinobatidae. In Fishes of the North-Eastern Atlantic and the Mediterranean (Whitehead, P.J.P., Bauchot, M.-L., Hureau J.-C., Nielsen J., and Tortonese E., eds). UNESCO, Paris. Vol. I, 156-158.

McEachran, J.D. & Capapé, C. 1984b. Mobulidae. In Fishes of the North-Eastern Atlantic and the Mediterranean (Whitehead, P.J.P., Bauchot, M.-L., Hureau J.-C., Nielsen J., and Tortonese E., eds). UNESCO, Paris. Vol. I, 210-211.

Nobre, A. 1935. Vertebrados (mammiferos, reptis e peixes). Fauna marinha de Portugal 1, 574 pp.

Notarbartolo di Sciara, G., 1987. A revisionary study of the genus *Mobula* Rafinesque, 1810 (Chondrichthyes: Mobulidae) with the description of a new species. Zoological Journal of the Linnean Society, 91, 1–91.

Scacco, U., Consalvo, I. and Mostarda, E. 2008. First documented catch of the giant devil ray *Mobula mobular* (Chondrichthyes: Mobulidae) in the Adriatic Sea. JMBA2 - Biodiversity Records (Published on-line)

Stehman, M. & Bürkel, D.L. 1984. Pristidae. In Fishes of the North-Eastern Atlantic and the Mediterranean (Whitehead, P.J.P., Bauchot, M.-L., Hureau J.-C., Nielsen J., and Tortonese E., eds). UNESCO, Paris. Vol. I, 153-155.

Tortonese, E. 1956. Leptocardia, Cyclostoma, Selachii. Fauna d'Italia 2. Calderini, Bologna, 334 pp.

Table 9.3.2.5.1 Reported landings of guitarfish species from The Mediterranean and Black Seas, 1980-2008 (Source: FAO).

Country	Ocean Area	Species	Scientific name	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Palestine, Occupied Tr.	Mediterranean and Black Sea	Guitarfishes, etc. nei	Rhinobatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Albania	Mediterranean and Black Sea	Guitarfishes, etc. nei	Rhinobatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greece	Mediterranean and Black Sea	Guitarfishes, etc. nei	Rhinobatidae	0	0	30	44	40	30	48	18	39	15	16	4	3	20	117
				0	0	30	44	40	30	48	18	39	15	16	4	3	20	117

Country	Ocean Area	Species	Scientific name	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Palestine, Occupied Tr.	Mediterranean and Black Sea	Guitarfishes, etc. nei	Rhinobatidae	0	0	6	6	6	4	2	1	4	1	1	2	8	6
Albania	Mediterranean and Black Sea	Guitarfishes, etc. nei	Rhinobatidae	0	1	0	0	0	0	0	2	0	0	1	8	3	3
Greece	Mediterranean and Black Sea	Guitarfishes, etc. nei	Rhinobatidae	79	112	63	87	73	94	89	52	32	41	24	34	32	43
				79	113	69	93	79	98	91	55	36	42	26	44	43	52

Table 9.3.2.5.2 Reported landings of giant devil ray from the Mediterranean and Black Seas, 1980-2008 (Source: FAO).

Country	Ocean Area	Species	Scientific name	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Spain	Atlantic, Northeast	Devil fish	Mobula mobular	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Country	Ocean Area	Species	Scientific name	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Spain	Atlantic, Northeast	Devil fish	Mobula mobular	0	0	0	0	0	0	0	0	0	1	3	3	2	1

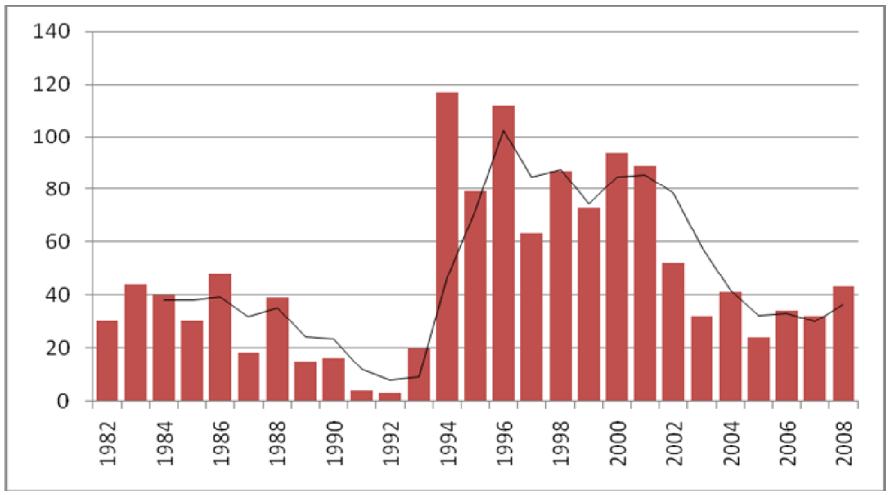

Figure 9.3.2.5.1 Greek landings (t) of guitarfish species from the Ionian and Aegean Seas, 1982-2008. Smoothed line is a 3-year moving average (Source: FAO).