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COMMENTS FROM INTERGOVERNMENTAL ORGANIZATIONS ON THE PROPOSALS FOR AMENDMENT OF APPENDICES I AND II OF THE CONVENTION

(Prepared by the Secretariat)

Summary:

This document contains comments submitted by relevant Intergovernmental Organizations on the proposals for the amendment of CMS Appendices to be considered by the 14th Meeting of the Conference of the Parties (COP14).

COMMENTS FROM INTERGOVERNMENTAL ORGANIZATIONS ON THE PROPOSALS FOR AMENDMENT OF APPENDICES I AND II OF THE CONVENTION

1. In accordance with the provisions of Article XI of the Convention, the following Parties have submitted proposals for amendments to Appendices I and II of the Convention for consideration by the 14th Meeting of the Conference of the Parties: Albania, Argentina, Bolivia (Plurinational State of), Bosnia and Herzegovina, Brazil, Chile, Ecuador, European Union and its Member States, Israel, Kazakhstan, North Macedonia, Panama, Paraguay, Peru, South Africa, Uruguay, Uzbekistan.

2. In accordance with the provisions of paragraph 12 of Resolution 13.7 *Guidelines for Preparing and Assessing Proposals for the Amendment of CMS Appendices*, the Secretariat has consulted relevant intergovernmental bodies, including RFMOs, having a function in relation to any species subject to a proposal for amendment. These organizations were:

    - Commission for the Conservation of Southern Bluefin Tuna
    - Convention on International Trade in Endangered Species of Wild Fauna and Flora,
    - Convention on the Conservation of European Wildlife and Natural Habitats,
    - Food and Agriculture Organization of the United Nations,
    - Indian Ocean Tuna Commission,
    - International Commission for the Conservation of Atlantic Tunas,
    - Inter-American Tropical Tuna Commission
    - Memorandum of Understanding on the Conservation of Migratory Sharks,
    - The Ramsar Convention on Wetlands of International Importance, and
    - Western and Central Pacific Fisheries Commission.

3. The full texts of the comments received from intergovernmental organizations in response to the Secretariat's request for comments, in the language in which they were submitted, are contained in the following annex to the present document, which constitutes an Addendum to the document UNEP/CMS/COP14/Doc.31.4/Rev.1:

    Annex – Memorandum of Understanding on the Conservation of Migratory Sharks

MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION OF MIGRATORY SHARKS

14 July 2023

ANALYSIS OF PROPOSALS FOR INCLUSION OF SHARK AND RAY SPECIES IN THE APPENDICES OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS (CMS) AT THE 14TH MEETING OF THE CONFERENCE OF THE PARTIES (CMS COP14)

(Prepared by the Advisory Committee of the Memorandum of Understanding on the Conservation of Migratory Sharks – Sharks MOU)

Introduction

1. The Sharks MOU Advisory Committee (AC) has reviewed proposals for the inclusion of four species of sharks and rays in the Appendices of the Convention (Table 1), that were submitted by CMS Parties for consideration at the 14th Meeting of the Conference of the Parties (COP14) to CMS and provided its comments in this document.

Background

2. CMS Resolution 11.33 *Guidelines for Assessing Listing Proposals to Appendices I and II of the Convention*

   "Requests the Secretariat to consult other ***relevant intergovernmental bodies,*** *including RFMOs, having a function in relation to any species subject to a proposal for amendment of the Appendices and to report on the outcome of those consultations to the relevant meeting of the Conference of Parties;"*

3. The Sharks MOU, which was concluded in accordance with Article IV (4) of CMS, represents such a relevant intergovernmental body in relation to the three species proposed. It aims to achieve and maintain a favourable conservation status for migratory sharks that are included in its Annex 1, most of which are also included in the Appendices of CMS.

4. In an exchange of letters between the Chairs of the AC and the CMS Scientific Council in July 2018, the Chair of the Scientific Council invited the Advisory Committee to review all listing proposals for sharks and rays that will be submitted to COP so that they may be made available to the CMS Scientific Council for its consideration at its last meetings preceding COP.

5. At the 4th Meeting of the Signatories to the Sharks MOU (Sharks MOS4) in March 2023, Signatories agreed through the **Programme of Work 2023–2025** to request the AC to "*Provide comments on proposals for the inclusion of shark and ray species in the Appendices of CMS to the CMS Scientific Council and Conference of the Parties".*

6. The AC has reviewed the proposals with regard to the accuracy and completeness of the information and assessed the proposals against the agreed CMS criteria for listing.

Based on its findings, the AC has provided its independent, expert opinion on whether the species meet the criteria for listing under CMS. Furthermore, the AC may comment on information in the proposals that were incomplete or incorrect (where relevant) and has provided additional scientific information relevant to the listing which may also be taken into account.

Table 1: Proposals for the inclusion of shark and ray species in the Appendices of CMS, which were submitted to CMS COP14, and which are subject to this review by the Sharks MOU AC.

Species	**CMS App.**	**Proponent(s)**	***Relevant Documents***
Sand tiger shark *Carcharias taurus*	I and II	Brazil, Panama	UNEP/CMS/COP14/Doc.31.4.9: Proposal for the Inclusion of the Sand Tiger Shark (Carcharias taurus) in Appendix I and II of the Convention
Blackchin guitarfish *Glaucostegus cemiculus*	I (Mediterranean Sea population) and II	Israel	UNEP/CMS/COP14/Doc.31.4.10: Proposal for the Inclusion of the Blackchin Guitarfish (Glaucostegus cemiculus) in Appendix II and the Mediterranean Sea Population of this Species in Appendix I of the Convention
Bull ray[1] *Aetomylaeus bovinus*	I (Mediterranean Sea population) and II	Israel	UNEP/CMS/COP14/Doc.31.4.11: Proposal for the Inclusion of the Bull Ray (Aetomylaeus bovinus) in Appendix II and the Mediterranean Sea Population of this Species in Appendix I of the Convention
Lusitanian cownose ray *Rhinoptera marginata*	I (Mediterranean Sea population) and II	Israel	UNEP/CMS/COP14/Doc.31.4.12: Proposal for the Inclusion of the Lusitanian Cownose Ray (Rhinoptera marginata) in Appendix II and the Mediterranean Sea Population of this Species in Appendix I of the Convention

Listing criteria

7. The AC noted the following information relating to CMS listing criteria:

   – A migratory species may be listed in Appendix I of the CMS "provided that reliable evidence, including the best scientific evidence available, indicates that the species is endangered[2]".

[1] Also known as duckbill eagle ray.

[2] In the present document, the term 'endangered' relates to the CMS definition whilst the term 'Endangered' relates to the IUCN assessment category. Therefore, where the AC considers the species as endangered, this may equate with an IUCN listing of 'Critically Endangered' or 'Endangered'.

- According to the CMS, “Appendix II shall list migratory species which have an unfavourable conservation status, and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement”.
- Migratory means that “the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries”.
- A species is considered to have an “Unfavourable conservation status” if any of the following is not met:

    (1) population dynamics data indicate that the migratory species is maintaining itself on a long-term basis as a viable component of its ecosystems;
    (2) the range of the migratory species is neither currently being reduced, nor is likely to be reduced, on a long-term basis;
    (3) there is, and will be in the foreseeable future sufficient habitat to maintain the population of the migratory species on a long-term basis; and
    (4) the distribution and abundance of the migratory species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management;

General remarks on the applicability of CMS listing criteria for marine species

8. The AC notes that the definition of ‘migratory’ as per CMS can sometimes be difficult to gauge, especially for species that are rare, difficult to assess, and/or occur in areas subject to more limited scientific investigations. Sharks and rays may display different types of migratory behaviour, and the AC has previously noted that there are different scales of cyclical and predictable migrations of fish populations (or part thereof; refer to CMS/Sharks/Outcome 3.2, provided in the Annex). In addition to this, some shark and ray species (as well as fish in general) may form ‘straddling stocks’ irrespective of whether or not the migratory behaviours would meet the CMS criteria. A straddling stock (which equates with a transboundary population) is a population of fish that is (usually) highly mobile and has a distributional range extending over multiple jurisdictional areas.

9. There are clearly technical and practical considerations of demonstrating whether a species meets the CMS criteria for being ‘migratory’. For example, longer-term tagging studies may be limited for some species and areas or may have only been undertaken for more accessible part/s of the global population which may or may not be representative. Additionally, when a species becomes depleted, it can be difficult to characterise the seasonal nature of the species’ occurrence (e.g., through landings or catch data), due to data being more limited.

Review

A. Comments on the proposal to list the sand tiger shark (*Carcharias taurus*) on the Appendices I and II of CMS

10. The AC noted that there appears to have been a lack of consultations with the Range States of this species which may impact on the representativeness and completeness of the proposal.

11. The AC noted that *Carcharias taurus* is primarily a coastal species, found in water depths of 5– 232 m, with a predominance in 10–40 m (Otway and Ellis 2011; Rigby et al., 2021). Globally, there appears to be at least six genetically distinct subpopulations of *C. taurus*: Northwest Atlantic; Southwest Atlantic; Japan; South Africa; east coast Australia; and west coast Australia (but see below for other areas). Genetic evidence indicates no contemporary exchange between these populations, with deep ocean basins and warm equatorial waters suspected to represent substantial barriers to dispersal (Ahonen et al., 2009). The proposal notes there is limited genetic differentiation between the Southwest Atlantic (Brazil), the Mediterranean Sea and South Africa; however, the AC considers these populations should be deemed discrete given there is no contemporary evidence of mixing. The AC also noted there are further known regional populations that were not assessed by Ahonen et al. (2009), and not considered fully in the proposal. The AC referred to Rigby et al. (2021) in this respect. The AC therefore considered the available information for the following geographical areas:
    - The Northwest Atlantic (USA from the Gulf of Maine to Florida)
    - Southwest Atlantic (Argentina, Uruguay, and southern Brazil)
    - Japan (southwest coast of Japan, possibly extending south-west along the coast of China and possibly into Vietnam)
    - South Africa (possibly extending north-east to Mozambique and north-west to Angola)
    - East coast of Australia
    - West coast of Australia
    - The Arabian Sea and Persian Gulf
    - South-east Asia and Papua New Guinea
    - West Africa and the Mediterranean

12. Migratory nature: There is considerable evidence that mature individuals of the species undertake large (up to a recorded 2700 km) coastal biennial or triennial north-south migrations in water depths of up to 200 m, associated with mating, gestation, and parturition. Migration patterns are complex (and may vary between geographic location), based on sex, maturity and for adult females, possibly whether the individual is in a gravid or resting reproductive phase. ‘Cyclical and predictable’ adult migration has been well documented within several of the substantively studied populations of *C. taurus*: east coast Australia (Bansemer and Bennett 2011; Otway and Ellis 2011), South Africa (Dicken et al., 2007); Northwest Atlantic (Hauslee et al., 2018; Teter et al., 2014); and Southwest Atlantic (Lucifora et al., 2002). There is also some evidence of seasonal migratory behaviour within the west coast Australian population (Hoschke et al., 2023). There is a paucity of data available for the other extant populations.

13. Whilst all populations are considered migratory, not all populations would have migrations that cross jurisdictional boundaries. Populations that would not cross such boundaries include the Northwest Atlantic and east coast Australian populations. Both these populations undertake well documented migrations, but within national waters.

14. It is unclear from the available information whether adults from the west coast Australian population migrate seasonally beyond the Australian Exclusion Economic Zone. The range of the western population has previously been documented as extending westwards from near the Western Australia−South Australia border, around the south-west, to just north of Exmouth. A recent publication (Hoschke et al., 2023) however, provides evidence for a possible range extension, noting records from as far north as Browse Island in northern Western Australia and from the Arafura Sea in the Northern Territory. There have also been records of *C. taurus* within the MOU Box[3] in the Timor Sea (Momigliano and Jaiteh 2015); in the Barossa Offshore Development Area north-west of Darwin (Jacobs Group 2016; ConocoPhillips 2018); and from reconstructed catches in Indonesian longline fisheries (legal and illegal) from pre-1975 up to 2002, indicating 101.3 tonnes reported as *C. taurus* (Braccini et al., 2021). Hoschke et al. (2023) and Dr M. Braccini (personal communication 3 July 2023) conclude it is possible the northerly extent of the west coast population may be within Indonesian and/or Timorese waters.

15. There are very limited data available regarding the west coast Australian population, but there is evidence of seasonal migrations within Australian waters (Hoschke et al., 2023). It is unclear whether the north-western Australian and Northern Territory population/s are genetically linked to either of the known Australian populations or linked to possible south-east Asian populations. Due to the paucity of data on the species in this region, it is unknown whether a significant proportion of this population migrates across international boundaries. Given the known migratory behaviour of the species and the relatively small distance between the bordering EEZs in this region, the AC considered it likely that this population would meet the CMS migratory criteria.

16. There are very limited data available regarding the Japan; Arabian Sea; Persian Gulf; South-east Asia/Papua New Guinea; and West Africa/Mediterranean Sea populations and no available evidence regarding migratory behaviours. Given the scale of *C. taurus* migrations and the relatively small size of EEZs, the AC considered it likely that populations in these areas would meet the CMS migratory criteria.

17. **The AC considered that available evidence indicates that all populations of *C. taurus* (except for the Northwest Atlantic and East Australia) meet the CMS definition of migratory. The AC further noted that the evidence indicates *C. taurus* is a 'sub-regional migratory' species as defined in CMS/Sharks/Outcome 3.2 and as referred to in the Annex).**

[3] The MOU Box is a rectangular box of marine waters in the Timor Sea that is within Australia's EEZ. It is subject to a 1974 Memorandum of Understanding (MOU) between Australia and Indonesia, with subsequent agreements, and related to traditional fishing rights.

18. Conservation Status: In 2020, the global population of *C. taurus* status was changed from Vulnerable to Critically Endangered according to the IUCN Red List (Rigby et al., 2021). This was based on a suspected population reduction of >80% over the past three generations lengths (74 years). The European/Mediterranean Sea population is also assessed separately as Critically Endangered (Walls and Soldo 2016). The species is now rarely encountered in the Persian Gulf, Arabian Sea, and south-east Asia, and is possibly locally extinct within the Mediterranean Sea (or at very low numbers, Bargnesi et al., 2020) and in the north-west African region (Rigby et al. 2021).

19. In Australia, *C. taurus* is listed as two separate populations under national legislation. The east coast population is listed as Critically Endangered and the west coast population as Vulnerable. A 2018 close-kin mark recapture population assessment (Bradford et al., 2018) found that the east coast population remains small (only approximately 2,000 adults in total) and is possibly increasing at an estimated rate of 3 – 4% per year. This population has been protected in the bulk of its range since 1984 and across its entire range since 1996, including the establishment of a series of protected areas associated with known key aggregation sites for the species (Commonwealth of Australia 2014). This research indicates a modest overall recovery for the east coast population and possibly provides evidence of the efficacy of local management and protection measures.

20. **Given the recent IUCN change of status to a higher extinction risk category, and the life history characteristics of the species, the AC considers that the available evidence would allow the conclusion that the global population of *C. taurus* be considered as "*facing a very high risk of extinction in the wild in the near future*" and as endangered[4] in accordance with Article III(1) of CMS and Resolution 13.7 *Guidelines for preparing and assessing proposals for the amendment of CMS Appendices*.**

21. **International cooperation: Given *C. taurus* is demonstrably a sub-regional migratory species, seasonally crossing international boundaries within the bulk of its range, the AC considered that the management and conservation status of the species would benefit substantially from international cooperation.**

22. Comments on the proposal: The proposal states, in paragraph 3 of the 'overview' and in paragraph 1 of the section 4.2 'population (estimates and trends)' that the west coast Australia population has shown "signs of the onset of recovery where management measures have been in place to some time..." The AC noted this is likely incorrect. The AC referred to Bradford et al. (2018) which provides evidence for possible recovery of the east coast Australian population.

[4] This includes a Critically Endangered IUCN assessment.

B. Comments on the proposal to list the Mediterranean Sea population of the blackchin guitarfish (*Glaucostegus cemiculus*) in Appendix I and its global population in Appendix II of CMS

23. Migratory nature: Studies on the movements of blackchin guitarfish are limited. Two attempts have been undertaken in Cabo Verde and Guinea-Bissau but have not yielded any results due to logistical constraints. Information on potential migratory behaviours may be inferred from seasonality in some biological studies and from information available for a congener (the giant guitarfish *Glaucostegus typus)* and the related common guitarfish *(Rhinobatos rhinobatos)* that overlaps across t most of its known range.

24. There have been limited biological investigations of blackchin guitarfish. It may be noted that studies in Tunisian waters reported that adult females were present all year round (Capapé and Zaouali 1994). Gillnet fisheries targeting this species have been reported as peaking from April to August (Enajjar et al., 2012), possibly indicating some form of seasonality.

25. The movements of giant guitarfish have been studied in Cleveland Bay, Australia. Here, tagged adult male and female *G. typus* (n = 15) exhibited philopatric behaviour patterns, leaving the bay and returning after periods of approximately 9–12 months to use the same areas where they were detected in previous years (White et al., 2014). Adult females were observed to leave the bay in the first weeks of December prior the wet-season and returned in October the next year. When in the bay, activity space was relatively small but additional information on large scale movements was not available.

26. The AC previously commented on the Sharks MOU listing proposal for *R. rhinobatos*, noting "*The Common Guitarfish is a coastal batoid species. Information from the Mediterranean Sea clearly indicates seasonal inshore-offshore migrations, although it was unclear as to whether these migrations crossed one or more national jurisdictional boundaries. Such seasonal migrations were also noted off West Africa (Mauritania, Senegal, Guinea, Guinea-Bissau, and Sierra Leone), based on coastal fishers altering their fishing activities, and there was some evidence that these migrations crossed national jurisdictional boundaries (Diop and Menna 2000). The AC considered these migrations to be a significant portion of the population (as it is unlikely that fishers would shift their activities based on a few individuals because this would not be profitable). Given the known importance of West Africa to the species, international cooperation is required.*"[5] In the absence of species-specific information for *G. cemiculus*, the AC concluded that their migratory behaviours may broadly mirror those of such related and/or sympatric species.

27. **The AC concluded that available evidence is insufficient to judge whether or not the migrations of blackchin guitarfish would cross national jurisdictional boundaries.**

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[5] CMS/Sharks/MOS3/Doc.9.1/Rev.1 Amendment of Annex 1 of the Sharks MOU

28. Conservation Status: In 2018, the species was assessed as Critically Endangered on the IUCN Red List (Kyne and Jabado 2019). This was based on inferred >80% population reduction over the last three generations (45 years) due to actual levels of exploitation. The species has mostly disappeared from the northern coast of the Mediterranean Sea and is now only found along the northern coast of Africa where it is targeted in some countries (e.g., Tunisia, Enajjar et al., 2012). In West Africa, the species is targeted for its fins and represents a large component of the fisheries operating from Mauritania to Ghana. Data from 2011 suggest that this species had already drastically declined in this region with sizes reductions also noted (Diop et al., 2011). There are no formal stock assessments for the species, however, other similar species for which data are available indicate similar declines in populations (e.g., *Rhinobatos rhinobatos* in Mauritania) and local extirpations (e.g., African wedgefish *Rhynchobatus luebberti*).

29. **The AC concluded that the available evidence would allow the conservation status of blackchin guitarfish to be considered as 'unfavourable' over its global range. Furthermore, the AC considered that the available evidence would allow the conclusion that the Mediterranean Sea population (and potentially the global population) could be "*facing a very high risk of extinction in the wild in the near future*" and be endangered[6] in accordance with Article III(1) of CMS and Resolution 13.7 *Guidelines for preparing and assessing proposals for the amendment of CMS Appendices*.**

30. International cooperation: Blackchin guitarfish was listed on Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) in 2019. This stipulates that trade in this species needs to be regulated and that countries need to produce Non-Detriment Finding (NDF) assessments.

31. **The AC concluded that both national and international initiatives could benefit populations of blackchin guitarfish. Such measures could include various forms of spatial management in those bays utilised by key life-history stages and relevant fisheries management measures, such as could be formulated through the General Fisheries Commission for the Mediterranean (GFCM) and the Fishery Committee for the Eastern Central Atlantic (CECAF).**

C. Comments on the proposal to list the Mediterranean Sea population of the bull ray (*Aetomylaeus bovinus*) in Appendix I and its global population in Appendix II of CMS

32. Migratory nature: There are no published studies on the movements and migrations of bull ray within any of its range in the eastern Atlantic and Mediterranean Sea. In the absence of such information, the AC assessed the likely migratory nature of this species based on published studies that provide relevant information on seasonal occurrence and behaviour.

33. Regionally, bull ray is known to move to coastal areas for foraging, and for gravid females to move into inshore pupping grounds (Seck et al., 2002; El Kamel et al. 2010;

[6] This includes a Critically Endangered IUCN listing.

Zogaris and Dussling 2010; Akyol et al., 2017, 2022), which may also serve as nursery grounds. In the northern Adriatic Sea, La Mesa et al. (2017), using fishery-dependent data, reported a slight southern shift in the Northern Adriatic population during the winter, presumably to slightly deeper waters. Hence, bull ray is known to undertake seasonal migrations.

34. Biological studies undertaken on bull ray, including age and growth studies (Başusta and Aslan 2018) and dietary studies (Capapé 1977) in the Mediterranean Sea, and studies on reproduction off Senegal (Seck et al., 2002) have accessed samples over much of the year, including of mature fish. This would be indicative of the seasonal migrations being of limited spatial extent.

35. In the Mediterranean Sea, bull rays have been captured more frequently in the eastern and southern areas than in the western basin (Capapé 1989). In general, throughout the range of bull rays in the Mediterranean Sea, there are indications of specific areas where it occurs, including sites of local abundance, including Güllük Bay, Izmir Bay and Iskenderun Bay (Turkey; Akyol et al. 2017, 2022; Bilgili and Kabasakal 2023), Gulf of Gabès, Gulf of Tunis and Lagoon of Bizerte (Tunisia; Capapé 1977; Mejri et al. 2004; El Kamel et al. 2010; Taktek et al., 2020), Gulf of Trieste and northern Adriatic Sea (Dulčić et al., 2008; La Mesa et al., 2016). The observed distributions are more in line with there being discrete populations (Bilecenoğlu 2019). Similarly, Moreno et al. (2021) considered that multiple in-year sightings of individual bull ray around Tenerife would be indicative of residency in the area.

36. While the locally/regionally defined areas of occurrence may straddle the waters of multiple range states (e.g., Italy and Croatia in the northern Adriatic, or Greece and Turkey in the eastern Mediterranean Sea), there are no indications that any migrations in these areas would meet the CMS criteria, in terms of being of a cyclical and predictable nature.

37. The AC concluded that available evidence indicates that bull ray is an aggregating species that will exhibit seasonal migrations, moving into shallower waters to give birth. The spatial extent of this migration is, however, likely to be limited, given that bull ray is generally encountered over much of the year in those localised areas where it occurs.

38. **The AC concluded that available evidence indicates that bull ray <u>does not</u> meet the CMS criteria for being migratory, as a significant proportion of either the "entire population or any geographically separate part of the population" does not "cyclically and predictably cross one or more national jurisdictional boundaries".**

39. <u>Conservation status:</u> There are no formal stock assessments for bull ray, and it is caught very infrequently in fishery-independent trawl surveys. Based on declining catch trends as well as reduced records of specimens both in trawl surveys and fisheries from several areas with previous occurrence of bull ray, and based on the level of (often unmanaged) fisheries operating throughout the range of this species, together with its low productivity and restricted habitat range, the most recent IUCN global assessment has suspected that the species has undergone a >80% population reduction over the past three generation lengths (51 years) (Jabado et al., 2021a).

Other IUCN regional assessments have also resulted in Critically Endangered listings for European waters (Walls and Buscher, 2015) and Mediterranean Sea (Walls and Buscher, 2016).

40. The AC would support some of the salient points from the latest IUCN assessment, especially that there is likely a high overlap between bull ray and commercial fisheries (including artisanal and subsistence fisheries), that the aggregating nature of the species, including of gravid females, could result in excessive fishing mortality, and the species has a low population productivity. The AC would also note that inshore bays and near-shore areas that may be utilised seasonally by bull ray are often subject to a range of anthropogenic pressures.

41. Whilst the exact level of population decline is unknown for the entire range, the AC considered that bull ray would be in "unfavourable conservation status", given its low population productivity, and that it utilises inshore habitats in areas with high levels of fishing activity and other pressures.

42. **The AC concluded that the available evidence would allow the conservation status of bull ray to be considered as 'unfavourable' throughout its range. Given that the Mediterranean Sea populations appear to occur in a number of discrete areas, such populations could be at an elevated risk of extinction and may be considered endangered in accordance with Article III(1) of CMS and Resolution 13.7 *Guidelines for preparing and assessing proposals for the amendment of CMS Appendices*.**

43. International cooperation: UNEP/CMS/COP14/Doc.31.4.11 states that bull ray has been proposed to be included in the Annex of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol) of the Barcelona Convention. Such inclusion would implement species-specific fishing restrictions on members of the General Fisheries Commission of the Mediterranean (GFCM) to an extent equalling a landings prohibition (in the Mediterranean Sea).

44. The AC considered that both national and international initiatives could benefit populations of bull ray. Such measures could include various forms of spatial management in those bays utilised by key life-history stages and relevant fisheries management measures, such as could be formulated through the GFCM and the Fishery Committee for the Eastern Central Atlantic (CECAF).

45. **The AC concluded that the management and conservation status of bull ray would benefit from international cooperation.**

D. Comments on the proposal to list the Mediterranean Sea population of the Lusitanian cownose ray (*Rhinoptera marginata*) in Appendix I and its global population in Appendix II of CMS

46. Migratory nature: There are no published studies on the movements and migrations of Lusitanian cownose ray within any of its range in the eastern Atlantic and Mediterranean Sea. In the absence of such information, the AC assessed the likely migratory nature of this species based on (a) published studies that provide relevant information on seasonal occurrence and behaviour, (b) knowledge from sister taxa.

47. In general, members of the genus *Rhinoptera* can form large aggregations, which may also occur at particular times of the year (Schwartz 1990). *Rhinoptera* spp. may also spend some time at the surface. Whilst this means that such species can be monitored by aerial surveys (including drones), the potential seasonal variation in vertical movements and aggregating nature can potentially affect encounter rates in both scientific surveys and fisheries information.

48. Lusitanian cownose ray is reported primarily from western Africa and the eastern Mediterranean Sea. There is a paucity of records from the western Mediterranean Sea, as evidenced by both contemporary and historical accounts, which may be indicative of these being geographically separated populations. This could be related to water temperature, as the eastern basin of the Mediterranean is warmer than the western basin, or preferences in habitat.

49. A study from the Banc d'Arguin National Park (Mauritania) reported the near year-round presence of Lusitanian cownose ray (February to December). There were slight seasonal changes in the sex ratio, with slightly more females occurring during most months of the year (Valadou et al., 2006). Actual numbers recorded by sex and month were, however, unavailable in this paper which prevented more detailed analysis.

50. There are only limited published data for Lusitanian cownose ray in the Mediterranean, although it can be noted that Başusta et al. (2022) were able to collect specimens (juveniles and adults) from Iskenderun Bay (Turkey) over much of the year (except June-July and December), possibly indicating persistent presence in that area.

51. In terms of related species, *Rhinoptera bonasus* is one of the better-studied species, especially along the eastern seaboard of the USA. This species is considered to undertake seasonal migrations, from Florida northwards in the spring to Chesapeake Bay and nearby areas, and southwards (to warmer water) in the autumn (Smith and Merriner, 1987; Blaylock, 1993; Goodman et al., 2010). It should also be noted, however, that Collins et al. (2008) reported that *R. bonasus* in the Caloosahatchee River (Florida) were present over much of the year, including mature individuals, and their results were indicative of there also being resident populations as well as the aforementioned migratory populations. In eastern Australian waters, Tagliafico et al. (2020) used aerial drones to examine the presence of *Rhinoptera neglecta*, and aggregations were observed over several different months (and seasons) of the year. Tagliafico et al. (2020) also postulated that *R. negelecta* may move offshore under certain conditions, such as when windspeeds were higher.

52. **The AC concluded that available evidence indicates that Lusitanian cownose ray is an aggregating species that will exhibit seasonal migrations, moving into shallower waters to give birth. The spatial extent of this migration is, however, highly uncertain. There is, however, no documented evidence that a significant proportion of either the "*entire population or any geographically separate part***

***of the population*" will "*cyclically and predictably cross one or more national jurisdictional boundaries*".**

53. Conservation Status: There are no formal stock assessments for Lusitanian cownose ray, and it is caught very infrequently in fishery-independent trawl surveys. For example, Baino et al. (2001) only reported Lusitanian cownose ray in two of the 6336 survey hauls analysed. This infrequency in trawl surveys is likely due to multiple factors, including low catchability in the survey trawl, poor overlap between the survey area and the actual species distribution, and the low abundance of the species itself.

54. Whilst earlier IUCN assessments for Lusitanian cownose ray gave a Data Deficient category, due to limited information on this species' interactions with fisheries, the most recent assessment considered it to be Critically Endangered (Jabado et al., 2021b).

55. The AC would support some of the salient points from the latest IUCN assessment, especially that there is likely a high overlap between Lusitanian cownose ray and commercial fisheries (including artisanal and subsistence fisheries), that the aggregating nature of the species, including of gravid females, could result in excessive fishing mortality, and the species has a low population productivity. The AC would also note that inshore bays and near-shore areas that may be utilised seasonally by *Rhinoptera* spp. are often subject to a range of anthropogenic pressures.

56. Whilst the IUCN assessment "*suspected that the Lusitanian cownose ray has undergone a population reduction of >80% over the last three generation lengths (83 years)"*, the AC is not in a position to quantify the extent of the decline. Although the exact level of population decline is unknown, the AC considered that Lusitanian Cownose Ray would likely be in "unfavourable conservation status" throughout its range, given its low population productivity, and that it utilises inshore habitats in areas with high levels of fishing activity and other pressures.

57. **The AC concluded that the available evidence would allow the conservation status of Lusitanian cownose ray to be considered as 'unfavourable' throughout its range. Given that the Mediterranean Sea populations appear to occur in a number of discrete areas, such populations could be at an elevated risk of extinction and may be considered endangered in accordance with Article III(1) of CMS and Resolution 13.7 *Guidelines for preparing and assessing proposals for the amendment of CMS Appendices*.**

58. International cooperation: The AC considered that both national and international initiatives could benefit populations of Lusitanian cownose ray. Such measures could include various forms of spatial management in those bays utilised by key life-history stages and relevant fisheries management measures, such as could be formulated through the General Fisheries Commission for the Mediterranean (GFCM) and the Fishery Committee for the Eastern Central Atlantic (CECAF).

59. **The AC concluded that the management and conservation status of Lusitanian cownose ray would benefit from international cooperation.**

60. Other comments: Whilst it would not alter the AC's perception of the conservation status, the AC would query the maximum size (200 cm disc width) and the 27.5-year

generation period reported in both the IUCN assessment and the Listing proposal (UNEP/CMS/COP14/Doc.31.4.12). The generation time assumed for Lusitanian cownose ray was based on data for *R. bonasus* that had been extrapolated based on differences in maximum size. Whilst the IUCN assessment considered a maximum size of 200 cm disc width (e.g., as given by McEachran and Capapé 1984), the AC noted that the maximum sizes reported in some dedicated biological studies (including of mature individuals) since earlier accounts have been in the range of 98.2 cm (Tıraşın and Başusta 2018) to 99.8 cm disc width (Başusta et al., 2022) in the Mediterranean Sea, and 93 cm (male) and 102 cm (female) disc width off west Africa (Valadou et al., 2006). Hence, the apparent disparity in these values, which could be related to regional differences in maximum size or taxonomic uncertainties, should be investigated further. Given that there are now more data available on the age and growth of Lusitanian cownose ray (Başusta et al., 2022) to augment data on the size-at-maturity (Valadou et al., 2006), the generation time could usefully be updated in future assessments.

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ANNEX

Criteria for the inclusion of species in Annex 1 of the Sharks MOU (adapted from CMS criteria for the inclusion of species in CMS Appendix II)

Excerpt from (CMS/Sharks/Outcome 3.2 Modifying the Species List (Annex 1) of the MOU)

……

7. The broad, biological criteria used under the CMS Convention to determine whether a species qualifies for listing should be used under the MOU. This will ensure a simple approach and maintain consistency with the parent Convention.

8. Annex 1 of the MOU shall list migratory species which have an unfavourable conservation status, and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement.

9. In accordance with paragraph 3 d) of the MOU the conservation status is considered "favourable" when all the following conditions are met:

   a) population dynamics data relative to appropriate biological reference points indicate that migratory sharks are sustainable on a long-term basis as a viable component of their ecosystems;
   b) the distributional range and habitats of migratory sharks are not currently being reduced, nor are they likely to be reduced in the future to levels that affect the viability of their populations in the long term; and
   c) the abundance and structure of populations of migratory sharks remains at levels adequate to maintain ecosystem integrity.

10. In accordance with paragraph 3 e) of the MOU, the conservation status will be taken as "unfavourable" if any of the above conditions are not met.

11. The term "migratory species" is defined by CMS in Article I (1), II (1) and IV (1) and further specified in the explanatory notes to the format for proposals to amend CMS Appendices. To better differentiate between the geographical extent of migrations, the following categories should apply:

    a) Highly migratory: Those species whose migrations extend over the scale of oceanic basins, so encompassing national waters and high seas;
    b) Regional migratory: Those species whose migrations extend over the scale of regional (often shelf) seas, although a small proportion of the population may make longer-distance movements, including excursions into oceanic basins;
    c) Sub-regional migratory: Those species that migrate over smaller spatial scales, but with clear evidence of cyclical and predictable migrations across jurisdictional boundaries.
    d) Smaller scale coastal migrations or non-migratory: Those species that are generally site specific or make only shorter distance movements (e.g., seasonal inshore-offshore or north-south migrations). These species are considered to not meet the criteria of "migratory species" as defined by CMS in Article I (1), II (1) and IV (1).

12. Notwithstanding the rules of CMS, species or species groups may be listed as “look-alike” species, if differentiation from an Annex 1 listed species is difficult and confusion with the latter is likely. A “look-alike” species does not necessarily have to meet all the criteria for inclusion in Annex 1 itself.