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MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION OF MIGRATORY SHARKS

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Agenda Item 9

AMENDMENT OF ANNEX 1 OF THE SHARKS MOU

(Prepared by the Advisory Committee and the Secretariat)

1. The current document refers to proposals for listing of additional species in Annex 1 of the MOU in part 1, listing criteria in part 2, and the format for listing proposals in part 3. The document contains four Annexes with recommendations from the Advisory Committee and the Secretariat.

Annex 1:	Recommendations of the Advisory Committee to the 3rd Meeting of the Signatories of the Sharks MOU on the Amendment of Annex 1 and Criteria for Listing Species (previously published in CMS/Sharks/AC2/Rec.2.1)
Annex 2:	Comments of the Advisory Committee on the following proposals: – CMS/Sharks/MOS3/Doc.9.1.1/Rev.1 – CMS/Sharks/MOS3/Doc.9.1.2 – CMS/Sharks/MOS3/Doc.9.1.3
Annex 3:	Proposed amendments to the document CMS/Sharks/Outcome 1.4 "Modifying the Species List (Annex1) of the MOU"
Annex 4:	Format for Proposals to amend CMS Appendices

Part 1: Listing Proposals

2. In accordance with paragraph 20 of the Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU), any amendments to Annex 1 should be assessed by the Signatories at each session of the Meeting of the Signatories (MOS).

3. As agreed at MOS1, any shark and ray species listed in the Appendices of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) will automatically be considered by the Sharks MOU Advisory Committee (AC) as a proposed listing in Annex 1 of the MOU. This is without prejudice to the final decision of MOS (CMS/Sharks/Outcome 1.4 "Modifying the Species List (Annex 1) of the MOU").

4. At the 12th Conference of the Parties to the CMS (COP12) in 2017, Parties agreed to list five new species of sharks and rays on the appendices of the Convention[1]: namely the Blue Shark (*Prionace glauca*), Dusky Shark (*Carcharhinus obscurus*), Angelshark (*Squatina squatina*), Common Guitarfish (*Rhinobatos rhinobatos*) and White-spotted Wedgefish (more commonly known as Bottlenose Wedgefish, *Rhynchobatus australiae*).

5. The Secretariat transmitted relevant documents, including the original species listing proposals for COP12, to the 2nd Meeting of the AC (AC2), which took place in November 2017 in Bonaire, Netherlands.

6. The recommendations of AC2 are contained in Annex 1 to this document.

7. The Committee recommended including the Dusky Shark, the Common Guitarfish and the Bottlenose Wedgefish White-spotted Wedgefish in Annex 1 of the MOU. However, they did not recommend the Blue Shark and Angelshark for inclusion. With regards to the Blue Shark, the AC provided additional notes on the proposal itself.

8. In addition, the AC has made recommendations on additional species not yet listed in CMS for inclusion in Annex 1. In particular, the AC recommended to consider two look-alike species of the White-spotted/Bottlenose Wedgefish for inclusion in Annex 1 and provided a detailed justification. The AC based its recommendation on the CMS Appendix II listing criteria, which MOS1 agreed to apply when considering the inclusion of species in Annex 1.

9. An additional three proposals to list species on Annex 1 of the MOU were received from Signatories by the deadline of 13 July 2018, namely:

   - the Oceanic Whitetip Shark (*Carcharhinus longimanus*), submitted by Brazil,
   - the Smooth Hammerhead Shark (*Sphyrna zygaena*), submitted by the EU
   - three species of wedgefishes (*Rhynchobatus australiae*, *Rhynchobatus djiddensis*, *Rhynchobatus laevis)*, submitted by the Philippines.

   The last of these proposals should be considered in conjunction with the proposal for the White-spotted/Bottlenose Wedgefish (*Rhynchobatus australiae*) as it contains this same species and two look-alike species of the Genus *Rhynchobatus*. It should be noted, that these species are amongst those additional species that the AC recommended for inclusion in Annex 1.

10. The AC reviewed those three proposals intersessionally and provided comments and additional information to MOS3, which are included in Annex 2 to this document.

11. The following table gives an overview of the species which are proposed for inclusion in Annex 1 of the MOU together with information on their current listing status under CMS, proponents and relevant meeting documents.

[1] The Whale Shark (*Rhincodon typus*), which was already included in CMS Appendix II, was additionally included in Appendix I. However, as this species is already covered by Annex 1 of the MOU, the listing of the Whale Shark was not subject to review by the AC.

Species	**CMS App.**	**Proponent**	***Relevant Documents*** ***(provided in the version as submitted to COP12 in "Proposals for amendment of CMS Appendices" and as submitted to MOS3 directly in "Proposals for amendment of Annex 1")***
Dusky Shark *Carcharhinus obscurus*	App. II	Honduras	UNEP/CMS/COP12/Doc.25.1.21/Rev.1
Blue Shark *Prionace glauca*	App. II	Samoa, Sri Lanka	UNEP/CMS/COP12/Doc.25.1.22/Rev.1
Angelshark *Squatina squatina*	App. I App. II	Monaco	UNEP/CMS/COP12/Doc.25.1.23
Common Guitarfish *Rhinobatos rhinobatos*	App. (I) II	Israel, Mauritania, Senegal, Togo	UNEP/CMS/COP12/Doc.25.1.24(a) UNEP/CMS/COP12/Doc.25.1.24(b) UNEP/CMS/COP12/Doc.25.1.24(c)/Rev.1 UNEP/CMS/COP12/Doc.25.1.24(d)/Rev.1
Bottlenose Wedgefish/ White-spotted Wedgefish *Rhynchobatus australiae*	App. II	Philippines	UNEP/CMS/COP12/Doc.25.1.25/Rev.2
Oceanic Whitetip Sharks *Carcharhinus longimanus*	Not listed	Brazil	CMS/Sharks/MOS3/Doc.9.1.1/Rev.1
Smooth Hammerhead Shark *Sphyrna zygaena*	Not listed	EU	CMS/Sharks/MOS3/Doc.9.1.2
Bottlenose Wedgefish/ White-spotted Wedgefish/ *Rhynchobatus australiae* **Smoothnose wedgefish** *Rhynchobatus laevis* **Whitespotted Wedgefish /Giant Guitarfish** *Rhynchobatus djiddensis*	Not listed	Philippines	CMS/Sharks/MOS3/Doc.9.1.3

Part 2: Listing Criteria

12. At MOS1 it was agreed, that the broad, biological criteria used under the CMS to determine whether a species qualifies for listing should be used under the MOU. These criteria were modified for the purpose of the MOU and are contained in CMS/Sharks/Outcome 1.4 "Modifying the Species List (Annex1) of the MOU:

    "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."

13. However, as included in CMS/Sharks/Outcome 1.4*,* the AC was requested to consider whether these listing criteria were sufficient or whether additional criteria were necessary to identify species which may be appropriate for inclusion under the MOU.

14. The Committee recommended that the broad principles of the CMS criteria 'population status' and 'migratory nature' should continue to be the main criteria. To ensure the MOU remains manageable, AC2 has also developed a method to prioritize potential species which qualify for listing on the MOU, which is outlined in Annex 1 to this document. In particular, the AC recommends applying a matrix to determine species of high priority based on their scale of depletion and the extent of their migratory nature.

15. Annex 3 to this document contains an amended version of CMS/Sharks/Outcome 1.4 "Modifying Annex 1 of the MOU", which reflects the recommendations of AC2 regarding the criteria for listing.

Part 3: Format for Listing Proposals:

16. At MOS1, Signatories adopted a format for listing proposals that was modelled after the format for the inclusion of species in CMS Appendices. Meanwhile, CMS changed its format slightly and provided notes to the format aiming at providing guidance to Parties on how to fill in the format. Both, the new CMS format and related notes are provided as Annex 4 to this document.

Action requested:

The Meeting is requested to:

Part 1:

a) Review the proposals for amendments to Annex 1 presented as documents:

   a. UNEP/CMS/COP12/Doc.25.1.21/Rev.1 – Doc.25.1.25/Rev.2
   b. CMS/Sharks/MOS3/Doc.9.1.1/Rev.1 - Doc.9.1.3

b) Take note of the recommendations and comments provided by the Advisory Committee, which are presented in Annex 1 and 2 to this document.

c) Decide on the inclusion of the proposed species in Annex 1 of the MOU;

Part 2.

d) consider the recommendations by the AC on specifying the listing criteria provided in Annex 1 and take a decision on the amendment of outcome 1.4 “Modifying Annex 1 of the MOU” as proposed by the Secretariat in Annex 3 to this document;

Part 3.

e) Review the revised format for the inclusion of species in CMS Appendices and its explanatory notes in Annex 4, modify as required and adopt the format for the purpose of the MOU.

ANNEX 1

RECOMMENDATIONS OF THE ADVISORY COMMITTEE TO THE 3RD MEETING OF THE SIGNATORIES OF THE SHARKS MOU ON THE AMENDMENT OF ANNEX 1 AND CRITERIA FOR LISTING SPECIES

Background

1. CMS COP12 (October 2017) agreed to list five further shark species on Appendices I and/or II:

   - Blue Shark *Prionace glauca* (App. II)
   - Dusky Shark *Carcharhinus obscurus* (App. II)
   - Angelshark *Squatina squatina* (Apps. I and II)
   - Common Guitarfish *Rhinobatos rhinobatos* (Apps. I[2] and II)
   - Bottlenose Wedgefish / White-spotted Wedgefish *Rhynchobatus australiae* (App. II)

2. The Advisory Committee (AC) was requested to (a) review the proposals for amendments to Annex 1; (b) provide comments and make recommendations regarding the inclusion of the proposed species in Annex 1 of the MOU for the consideration of Signatories at MOS3 based on the criteria of CMS; (c) consider whether it is necessary to prioritize potential species that qualify for listing on the MOU in order to ensure the MOU remains manageable; (d) provide recommendations for additional listing criteria to MOS3; and (e) make suggestions for the inclusion of further species in Annex 1 as appropriate.

3. The five species proposed for listing were considered by the AC in relation to their conservation status and their migratory nature, which are the criteria under CMS for the inclusion of species in the CMS Appendices. In accordance with the Convention text,

   a. “Appendix I shall list migratory species which are endangered” (Article III, 1) and
   b. “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.” (Article IV, 1)

4. The CMS Convention text defines migratory species in Article I as “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”. The supplementary notes to the national reporting format provides further guidance on how understand the definition.

5. In accordance with CMS Article I c , “the conservation status of a species will be taken as "favourable" when: (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,

[2] Mediterranean Sea only

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;"

6. CMS Article I (d) further defines, that the conservation status will be taken as "unfavourable" if any of the conditions set out in sub-paragraph (c) of this paragraph is not met;

7. CMS Article I (e) states that "Endangered" in relation to a particular migratory species means that the migratory species is in danger of extinction throughout all or a significant portion of its range;

Recommendations on Amendments to Annex 1 of the MOU:

Blue shark (*Prionace glauca)*

8. The AC considers that the Blue Shark does not meet the criteria for inclusion in Annex 1.

- meets the criteria for "migratory"
- does not meet the criteria for "unfavourable"
- there are currently management measures in place for its conservation throughout most of its range through RFMOs (e.g. ICCAT), and as such, this species would not significantly benefit from additional international cooperation through the Sharks MOU.

9. The Blue Shark is a highly migratory, pelagic shark species with evidence of migrations between international and national waters of many countries, thus across national jurisdictional boundaries.

10. Blue Shark stocks are currently assessed by the major tuna-RFMOs in the Atlantic, Pacific and Indian Oceans. While declines have been observed, these stock assessments have not found Blue Shark stocks to be overfished or with overfishing occurring and thus the conservation status does not currently appear to be unfavourable. Blue shark stocks are being managed through tuna-RFMOs with a catch limit established for the North Atlantic, implying that international cooperation is already in place and catches are being monitored. The current IUCN global status lists Blue Sharks as Near Threatened.

11. Several inaccuracies were noted in the listing proposal (including an incorrect scientific authority, inaccurate and outdated information on population declines, and incorrect information relating to management measures applicable (see Annex 1 for further details).

Dusky shark (*Carcharhinus obscurus)*

12. The AC considers that the Dusky Shark meets the criteria for inclusion in Annex 1.

- meets the criteria for "migratory"
- meets the criteria for "unfavourable"

13. The Dusky Shark is a coastal pelagic shark that undergoes regional migrations, with sufficient evidence of migrations across national jurisdictional boundaries.

14. Dusky Shark stocks are currently assessed by the United States and Australia. These stock assessments have found Dusky Shark stocks to have declined by 73% and 75%, respectively and thus conservation status is currently unfavourable. The current IUCN global status lists Dusky sharks as Vulnerable.

Angelshark (*Squatina squatina)*

15. The AC considers that the Angelshark does not meet the criteria for inclusion in Annex 1.

- does not meet the criteria for "migratory" species
- meets the criteria for "unfavourable" and "Endangered"

16. Members of the AC and Conservation Working Group (CWG) highlighted that Angelsharks (Squatinidae) are of major conservation concern due to their high vulnerability to overexploitation, habitat degradation, and the unfavourable status of many species in this family.

17. The population of the European Angelshark (*Squatina squatina*) has both declined severely and is fragmented, as this species has been lost from several parts of its former range. The available evidence clearly indicates the species has an unfavourable conservation status. The IUCN lists this species of Angelshark as Critically Endangered.

18. The data and information available for the Angelshark (and as inferred from related species) indicate that seasonal, inshore-offshore migrations probably occur, but the depth range would not result in Angelsharks moving from national to international waters. Whilst there is also the capacity for north-south seasonal migrations, there is no indication that this is to an extent that results in "a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries".

19. The AC considered available evidence for *Squatina squatina* (and published studies on other species of Angelsharks), and noted the following points:

- Whilst the proposal noted that "*about 80% of tagged sharks were recaptured close to the tagging sites*", Quigley (2006), using data from the same study, reported that "*Nearly 96% … of the recaptures were taken in Irish coastal waters and only 4% … from abroad*" and concluded "*it seems that most fish remain in Irish waters and indeed, relatively close to their initial tagging location*".
- Whilst based on very limited data, tagging studies in the Mediterranean Sea inferred distances travelled as 10-44 km (Capapé et al., 1990).
- Whilst seasonal migrations likely occur, these include inshore-offshore migrations, as reported for other species of Angelshark (Colonello et al., 2007; Vögler et al., 2008), though there is also the possibility of some latitudinal migrations. Whilst there is evidence of some longer-distance movements, the frequency of such events appears low.
- Genetic studies on the related Pacific Angelshark (*Squatina californica*) reported significant genetic differences from samples from different parts of the California Channel Islands (Gaida, 1997), an archipelago that extends for <300 km. A subsequent study observed different haplotypes in specimens of this species from the Sea of Cortez

and Californian coast (Stelbrink et al., 2010). Cases of significant genetic differences suggest there can be limited mixing within the wider species range.

Common Guitarfish (*Rhinobatos rhinobatos)*

20. The AC considers that the Common Guitarfish meets the criteria for inclusion in Annex 1.

- meets the criteria for "migratory"
- meets the criteria for "unfavourable" and "Endangered"

21. 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.

22. Documented declines over parts of their range, particularly in the Mediterranean Sea, support the view that the conservation status is currently "unfavourable". The global population was assessed by IUCN in 2007 and the Mediterranean Sea population was evaluated again in 2016; in both cases the species was listed as Endangered.

23. The AC noted that four similar proposals for this species had been submitted, and these were considered as one proposal with information reviewed from all proposals.

Bottlenose Wedgefish / White-spotted Wedgefish (*Rhynchobatus australiae)*

24. The AC considers that the Bottlenose Wedgefish / White-spotted Wedgefish meets the criteria for inclusion in Annex 1:

- meets the criteria for "migratory"
- meets the criteria for "unfavourable"

25. Data on the biology and ecology of this species remain limited, with little information on the extent of seasonal and predictable migratory patterns across international boundaries. However, there is some indirect evidence suggesting populations undertake transboundary migrations in some regions. The AC noted the following points:

- In Oman, landing site surveys (across the wider area and thus encompassing multiple fisheries and fishing grounds) revealed only large individuals (>150 cm total length, TL), comprised mostly males (Jabado, unpubl. data). This is despite the wide range of gear used by local fishermen, including gillnets, longlines, and beach seines. In contrast, fishermen using the same gear in the UAE frequently land individuals ranging from 59-290 cm TL. This suggests that Omani populations are likely to be using waters of neighbouring countries at other life-history stages and events, which suggests this species is crossing national jurisdictional boundaries on a regular basis.

- A recent study investigating genetic differentiation in *R. australiae* in Australia, South-East Asia, and the Andaman Sea did not provide evidence for substantial demographic connectivity among regions (Giles et al., 2016). However, the authors recommend separate conservation assessments and management of the species in each of the sampled sub-regions as separate stocks, suggesting individuals potentially range over several countries, particularly in Southeast Asia. Furthermore, the genetic results indicated episodic migration between Australia and Indonesia.
- Research in northern Australia, examining the spatial ecology, and particularly residency of *R. australiae*, provides evidence of individuals leaving specific areas for periods varying from days to weeks (White et al., 2014). Furthermore, individuals were not observed to return to the study area once they had been absent for more than 200 days, possibly suggesting movement beyond the study region.
- As shark-like batoids, *Rhynchobatus* spp. are morphologically similar to species such as sawfish (Pristidae) and share many of the same characteristics (i.e. large size). Adult sawfish are known to have large activity spaces and undertake migratory movements across international boundaries (Simpfendorfer 2005; Carlson et al. 2014; Harrison and Dulvy 2014). It is possible that the behaviour of *Rhynchobatus* sp. is similar to that of sawfish.

26. The Bottlenose Wedgefish / White-spotted Wedgefish is heavily exploited throughout its range with evidence of significant population declines in some regions (e.g. southeast Asia, Arabian Sea and its adjacent waters; White and McAuley, 2003; Jabado et al., 2017). At a global level, this species is listed by the IUCN as Vulnerable (noting this assessment dates back to 2003 and requires updating). A more recent IUCN regional assessment from the Arabian Sea and its adjacent waters categorised this species as Endangered, with a suspected population decline of between 50-80% over the past 39 years (three generations). This species is particularly susceptible to fishing because of its coastal habitat, vulnerability to incidental catch in multiple gear types (e.g. gillnets, trawls, and longlines) and large size. It also has extremely valuable fins. The AC therefore considers that the conservation status of the Bottlenose Wedgefish/White-spotted Wedgefish is “unfavourable”.

27. The AC also noted that there are currently no management measures in place for its conservation and so this species would significantly benefit from international cooperation through the Sharks MOU.

28. Given the morphological similarities among the three species, Bottlenose Wedgefish / White-spotted Wedgefish (*R. australiae*)*,* Smoothnose Wedgefish (*R. laevis*) and Giant Guitarfish / White-spotted Wedgefish (*R. djiddensis*) and their geographical overlap, there could usefully be consideration of including all three taxa on the Annex (see Annex 2).

Comments on listing criteria

29. In terms of listing criteria and prioritisation of species, the AC and CWG considered that 'population status' and 'migratory nature' should continue to be the main criteria. Species listed on the Appendices of CMS COP12 included two extremes in these criteria: the Blue Shark (highly migratory, but not considered in an 'unfavourable conservation status') and the Angelshark ('unfavourable conservation status', but not meeting the defined criteria for 'migratory').

30. One option for better clarifying and prioritizing species in the remit of CMS was suggested as outlined below (Figure 1), where the red cells indicate species (or stocks) of greater relevance to the CMS Sharks MOU, orange cells indicate species (or stocks) of moderate importance (though potentially greater importance regionally) and blank cells indicating species (or stocks) that could be considered of lower priority to the MOU.

Extent of migratory nature					
	Highly migratory	*Blue Shark*			
	Regional migratory			*Dusky Shark*	
	Sub-regional migratory				*Wedgefish* *Guitarfish*
	Smaller scale coastal migrations or non-migratory				*Angelshark*
		Moderate [1]	Moderate [2]	High	Very high
		Scale of depletion			

Figure 1. Priority species (red and orange) in relation to the extent of their migratory nature and scale of depletion of Species ([1] Moderate decline, but the stock is either assessed routinely and/or the main fishery taking the species is under routine management; [2] Moderate decline, but the stock is unassessed, and/or the fishery is not under routine management)

31. 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 were suggested:

- Highly migratory: Those species whose migrations extend over the scale of oceanic basins, so encompassing national waters and high seas. An example of this is the Blue Shark.
- 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. An example of this is Dusky Shark.

- Sub-regional migratory: Those species that migrate over smaller spatial scales, but with clear evidence of cyclical and predictable migrations across jurisdictional boundaries. Examples of this are guitarfishes and wedgefishes.
- 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). An example of this is the Angelshark.

32. The AC recommends that the CMS Scientific Council (ScC) consults the Sharks MOU AC on listing proposals for species of sharks and rays.

Other Species recommended for Inclusion in Annex 1

33. The AC and CWG were requested to make suggestions for the inclusion of further species in Annex 1 as appropriate. The following species were proposed:

- **Oceanic Whitetip Shark** *Carcharhinus longimanus*
- **Smooth Hammerhead** *Sphyrna zygaena*
- **Winghead Shark** *Eusphyra blochii*
- **Wedgefish:** "look-alike" species of the Bottlenose Wedgefish / White-spotted Wedgefish *Rhynchobatus australiae*
    - **Smoothnose wedgefish** *Rhynchobatus laevis*
    - **Whitespotted Wedgefish / Giant Guitarfish** *Rhynchobatus djiddensis*

34. The AC and CWG recognize that there is an increasing number of larger-bodied coastal elasmobranchs that have high conservation interest, including some species of skates (Family Rajidae), angelsharks (Family Squatinidae), guitarfishes/wedgefishes and sawfishes (Order Rhinopristiformes) as well as various members of the Order Myliobatiformes. Many of the more threatened species within these groups will be data-limited, and determining which of these are 'migratory' will likely be problematic. Approaches that could be used to inform or infer migratory extent may include:

- Conventional and electronic tagging studies;
- Genetic studies;
- Considering the home range/scale of movements in relation to the sizes of the various jurisdictional areas within the geographic range;
- Information from similar species;
- Habitat modelling, that may indicate likely habitat in relation to temperature, depth, sediment (but noting that these should be robust studies, as such approaches can often exaggerate species distributions).

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FURTHER NOTES ON THE PROPOSAL FOR THE INCLUSION OF THE BLUE SHARK IN ANNEX 1 OF THE MOU (*original proposals for CMS Appendix II*)

Section 4.2 (population estimates and trends)

The proposal listed several indices of relative abundance showing different degrees of decline. It is important to highlight that relative abundance indices are only stock status indicators and not full stock assessments providing a formal determination of the status of a stock. Additionally, the choice of some particular catch rate series seemed biased, since other indices of abundance showing different trends were not mentioned. One example is the analysis shown in Baum et al. (2003) that has been rebutted several times by the scientific literature but was still listed in the proposal. As another example, of the eight standardized catch rate series used in the 2015 ICCAT stock assessment for the North Atlantic stock, four displayed a positive trend, one no overall trend, and three had a negative trend, while the six catch rate series used for the South Atlantic stock all showed a positive trend. None of those catch rate-based indicators were listed in the proposal. The same is true for all the standardized catch series indexes used for the Indian Ocean and Pacific assessments.

Section 5.2 (equivalent information relevant to conservation status assessment)

The proposal stated that "*fisheries stock assessments have been undertaken (or attempted) for some Blue Shark stocks*". In fact, the Blue Shark is the most ubiquitously assessed pelagic shark species in the world given its naturally high abundance, with assessments now available for Atlantic, Pacific, and Indian Oceans. There are also several management measures in place which have allowed for better data collection in recent years.

Section 5.3 (threats to the population)

It is unclear where the landings used for Figure 5 in the proposal come from. Using the catches reported in the 2015 Blue Shark stock assessment combined for North and South Atlantic stocks, catches increased by about 50% from 2005 (51,602 t) to 2011 (76,692 t).

Section 6.2 (*International protection status*)

The proposal states that "*none of the major oceanic RFMOs have yet adopted catch limits for this species*...". This is incorrect as ICCAT has in 2016 established a catch limit for the North Atlantic stock, specifically 39,102 t (ICCAT Rec. 2016-12).

The proposal also mentions that "*no RFMO has put in place management measures that would bind fishing countries to work together to ensure that* P. glauca *is managed sustainably*". This is also not entirely correct, as the same ICCAT Rec (2016-12) mentions that "*the SCRS shall provide, if possible, options of Harvest Control Rules with the associated limit, target and threshold reference points for the management of this species in the ICCAT Convention area*". While this is not a binding measure, it implies that scientific work has now to be carried out to provide options for *Harvest Control Rules*, with the respective reference points, for future management of the stock.

Section 6.5 (population monitoring)

The proposal states that the "*there are no formal programmes dedicated specifically to monitoring of Blue Shark*...". The indices of relative abundance (commented in section 4.2) and that are used in the stock assessments are a form of population monitoring at least on a relative basis, if they properly account for all variables that can affect abundance.

References:

Baum, J., Myers, R. A., Kehler, D. G., Worm, B., Harley, S. J., & Doherty, P. A. (2003). Collapse and Conservation of Shark Populations in the Northwest Atlantic. Science (New York, N.Y.). 299: 389-392. 10.1126/science.1079777.

ICCAT Rec. 2016-12: Recommendation by ICCAT on Management Measures for the Conservation of Atlantic Blue shark caught in association with ICCAT Fisheries.

ADDENDUM TO THE PROPOSAL FOR THE INCLUSION OF *Rhynchobatus australiae (Whitley, 1939)* IN ANNEX 1 OF THE SHARKS MOU (*original proposals for CMS App II*)

Recognizing that the Bottlenose Wedgefish / White-spotted Wedgefish *Rhynchobatus australiae* (Whitley, 1939) is previously considered as part of a species complex to which taxonomic confirmation has only been recently done, the potential for "look-alike species" overlapping in various regions needs to be addressed. "Look-alike species" are those species whose specimens closely resemble or resemble those of species listed for conservation reasons. Globally, there are at least eight distinct guitarfish/wedgefish species confirmed present, two of which considerably overlap in geographic distribution and have often been confused or mistaken with *R. australiae* or each other (L.J.V. Compagno pers. comm. in: Cavanagh et al. 2003; Compagno et al. 2005; Giles et al. 2016). These two species are the **Giant Guitarfish / Whitespotted Wedgefish *R. djiddensis* (Forsskål, 1775)** and the **Smoothnose Wedgefish *R. laevis* (Bloch & Schneider, 1801).** Both species have been assessed as Vulnerable on the IUCN Red List, with declining populations from interactions with various fisheries and increasing demand and high value of their fins.

- ***Rhynchobatus djiddensis* (Forsskål, 1775).** The Giant Guitarfish / White-spotted Wedgefish *R. djiddensis* was previously referred to as wide-ranging, and is now considered a complex of four species: *R. djiddensis* sensu stricto, *R. australiae*, *Rhynchobatus* sp. nov. B in Last & Stevens, 1994 and possibly *R. laevis* (L.J.V. Compagno pers. comm. in: Cavanagh et al. 2003). The Broadnose Wedgefish *Rhynchobatus* sp. nov. B in Last & Stevens, 1994, a synonym of the *Rhynchobatus* sp. 2 in the Western Central Pacific (Compagno & Last, 1999) and in the Philippines (Compagno *et al.* 2005), is recently described as a new species of wedgefish, *Rhynchobatus springeri* Compagno and Last, 2010 which is distinct from the other three species and found to occur in the Indo-Malay: from Java (Indonesia) to Thailand, including Borneo, Singapore and the Philippines. The current known range of *R. djiddensis* is in the Western Indian Ocean, from South Africa to Oman (Last et al. 2016; see Figure 2). Countries of occurrences include: Bahrain; Djibouti; Egypt; Eritrea; Kenya; Kuwait; Mozambique; Oman; Qatar, Iran; Saudi Arabia; Somalia; South Africa; Sudan, United Arab Emirates; United Republic of Tanzania, Yemen (Dudley and Cavanagh, 2006).

Figure 1. Distributional map of *Rhynchobatus australiae* (from Last *et al.* 2016).

Figure 2. Distributional map of *Rhynchobatus djiddensis* (from Last *et al.* 2016).

- ***Rhynchobatus laevis* (Bloch & Schneider, 1801**). The current known range of the Smoothnose Wedgefish *R. laevis* is in the Indo-West Pacific, from Oman to Japan, primarily in the Indian Ocean (Last *et al.* 2016; see Figure). Countries of occurrences include: Bahrain; Bangladesh; China; India; Iran; Japan; Kenya; Kuwait; Oman; Pakistan; Qatar; Saudi Arabia; Sri Lanka; Tanzania, United Arab Emirates (Compagno and McAuley, 2016). First described from India, the Smoothnose Wedgefish, was widely confused with the Western Indian Ocean *R. djiddensis* across its range from the Arabian Sea to the Western Pacific. Recent taxonomic study of *Rhynchobatus* species have resulted in improved understanding of the distribution of the Smoothnose Wedgefish and it is no longer considered to occur in East Africa and Australian waters (P. Last, CSIRO, pers. comm., 2015 in Compagno and McAuley, 2016).

Figure 3. Distributional map of *Rhynchobatus laevis* (from Last *et al.* 2016).

As with the Bottlenose Wedgefish / White-spotted Wedgefish *Rhynchobatus australiae*, both *R. djiddensis* and *R. laevis* are taken by multiple artisanal and commercial fisheries throughout their ranges, both as a target and bycatch species. They are susceptible to capture by multiple fishing gear types, including trawl, gillnets and hooks, and have high-value fins. Their numbers have been inferred as locally reduced by generally unregulated fishing throughout their range. Management measures for these species are either limited or none existent across large parts of this range.

The AC thus recommends to the Signatories that they include the two-look-alike species of the Bottlenose Wedgefish / White-spotted Wedgefish *Rhynchobatus australiae* (Whitley, 1939) in Annex 1 to the Sharks MOU. Further investigations into the taxonomy, population and range, biology and ecology of *R. australiae* and the look-alike species are needed. Recent catch and trade data for the species throughout their ranges are required to assess to what extent the population decline is occurring. Improved species composition data from all fisheries that take these species is necessary.

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Cavanagh, R.D., Kyne, P.M., Fowler, S.L., Musick, J.A. and Bennett, M.B. 2003. The Conservation Status of Australasian Chondrichthyans: Report of the IUCN Shark Specialist Group Australia and Oceania Regional Red List Workshop, Queensland, Australia, 7-9 March 2003. School of Biomedical Sciences, University of Queensland, Brisbane.

Compagno, L.J.V. and Last, P.R., 1999. Order Rhinobatiformes. Rhinidae (= Rhynchobatidae). Wedgefishes. In: Carpenter, K.E. and V.H. Niem (eds), 1999. FAO Species Identification Guide for Fishery Purposes. The living marine resources of the Western Central Pacific. Rome, FAO, 3: 1418–1422, figs.

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Giles, J., Riginos, C., Naylor, G. .Dharmadi and Ovenden, J.. (2016). Genetic and phenotypic diversity in the wedgefish *Rhynchobatus australiae*, a threatened ray of high value in the shark fin trade. Marine Ecology Progress Series. 548: 165–180. 10.3354/meps11617.

Last, P., White, W., de Carvalho, M., Séret, B., Stehmann, M. and Naylor, G. (eds). 2016. Rays of the World. CSIRO Publishing.

ANNEX 2

COMMENTS OF THE ADVISORY COMMITTEE ON PROPOSALS FOR THE INCLUSION OF

Carcharhinus longimanus
Sphyrna zygaena
Rhynchobatus australiae*, *R. laevis, R. djiddensis

1. The Advisory Committee has provided the following recommendations and comments on proposals for the inclusion of species, that were submitted by Signatories to MOS3:

Oceanic Whitetip Shark (*Carcharhinus longimanus*)
Document: CMS/Sharks/MOS3/Doc.9.1.1/Rev.1

2. The AC considers that the Oceanic Whitetip Shark meets the criteria for inclusion in Annex 1.

   - meets the criteria for "migratory"
   - meets the criteria for "unfavourable"

3. Section 2.1 states that Oceanic Whitetip Shark is the "*only true oceanic species within the* Carcharhinus *genus*", which is questionable, as Silky Shark is also an important oceanic carcharhinid.

4. Section 2.2 states *"C. longimanus, once among the most abundant oceanic sharks, has experienced serious declines as high as 70% within the western North Atlantic between 1992 and 2000"*, without citing scientific sources for the statement.

5. Section 2.2 refers to the study of Baum et al. (2003), and this study may not be the most appropriate source of information (Burgess et al., 2005), and so the more robust study of Cortés et al. (2008) should have been given more weight.

6. Section 2.2 could have better separated information on species composition from studies providing information on population estimates and trends.

7. There have been several studies conducted under the auspices of the WCPFC that could usefully have been incorporated for the Pacific Ocean (e.g. Rice, 2012; Rice & Harley, 2012; Rice et al., 2015). Similarly, studies conducted under the auspices of the Indian Ocean Tuna Commission (IOTC) (e.g. Ramos-Cartelle et al., 2012; Yokawa & Semba, 2012) have provided relevant information for the Indian Ocean. These studies would have provided further support for the species meeting the criteria for "unfavourable".

8. Section 2.4 states that Kohler et al. (1998) reported a maximum distance travelled of 1,226 km, when this study reported it to be 1,226 nm (=2,270 km).

9. The text in Section 3 (Fisheries; ICCAT) discusses hammerhead sharks rather than Oceanic Whitetip Shark and does not refer to Oceanic Whitetip Shark when summarising the Ecological Risk Assessment.

10. Range States that have developed NPOA should include the UAE and West African countries (they have a regional plan as well as NPOAs in Senegal, Sierra Leone, Guinea and Guinea Bissau).

Smooth Hammerhead Shark (*Sphyrna zygaena*)

Document: CMS/Sharks/MOS3/Doc.9.1.2

11. The AC considers that the Smooth Hammerhead Shark meets the criteria for inclusion in Annex 1.

    - meets the criteria for "migratory"
    - meets the criteria for "unfavourable"

12. The proposal highlights that, although robust species-specific population trends for S. zygaena are unavailable, populations of hammerhead sharks (at a generic level) have declined in various parts of their ranges.

13. The proposal provides evidence of both latitudinal migrations (which would mean they may move between the waters of different range states) and inshore-offshore migrations (which means they may move into international waters). The latter was supported by recent tagging data and the presence of oceanic cephalopods in their diet.

14. The proposal also notes that two other species of hammerheads are listed, and as such the issue of look-alike species is an additional factor to be considered.

15. The map in Figure 2 is incorrect and needs to be updated. For example, this species does not occur in the Arabian/Persian Gulf but across the whole of the Arabian Sea.

16. Range States that have developed NPOA should include the UAE and West African countries (they have a regional plan as well as NPOAs in Senegal, Sierra Leone, Guinea and Guinea Bissau) – Oman should be removed.

17. Saudi Arabia, Iraq, Kuwait, Qatar are not a Range States, but all West African countries should be added to the list of Range States.

White-Spotted/Bottlenose Wedgefish (*Rhynchobatus australiae*), Smoothnose Wedgefish (*Rhynchobatus laevis*) and Whitespotted Wedgefish/Giant Guitarfish (*Rhynchobatus djiddensis)*
Document: CMS/Sharks/MOS3/Doc.9.1.3

18. The AC considers that the three *Rhynchobatus* species meet the criteria for inclusion in Annex 1.

    - *Rhynchobatus australiae* meets the criteria for "migratory"; for *R. laevis* and *R. djiddensis* available data are insufficient to inform on their migratory behaviours
    - All three species meet the criteria for "unfavourable"

19. The vulnerability of these three species of wedgefish was noted in the proposal, highlighting the high commercial value of their fins and that their coastal habitats overlap with various fisheries.

20. Quantitative evidence of species-specific population trends and estimates of population size are unavailable. Available species-specific data are likely too limited to allow for robust stock assessments. Those landings data that are available could have usefully been included in the proposal, to help provide relevant supporting evidence. For example, Raje (2006) reported "*The annual landing of* R. djiddensis *range from 1156.6 t during 1989 to 174.3 t in 2003. The 5 yearly average landings of species during 1989-1993, 1994-1998 and during 1999-2003 were 532.3 t, 231.6 t and 172 respectively, thus indicating a sharp decline over the years*." Whilst reported landings data are not necessarily indicative of population size, such information could have been presented.

21. As noted above (Annex 1, bullet 25), there is anecdotal evidence that indicates that *R. australiae* may move between range states. There is little supporting evidence for whether or not the other two proposed species also move between range states.

22. As explained in detail in Annex 1 to this document, the AC recommends the inclusion of *Rhynchobatus australiae* and its two look-alike species *Rhynchobatus laevis* and *Rhynchobatus djiddensis* in Annex 1 of the Sharks MOU*.*

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Raje, S.G. (2006). Skate fishery and some biological aspects of five species of skates off Mumbai. Indian Journal of Fisheries, 53: 431–439.

Ramos-Cartelle, A., García-Cortés, B., Ortíz de Urbina, J., Fernández-Costa, J., González-González, I. and Mejuto, J. (2012). Standardized catch rates of the oceanic whitetip shark (Carcharhinus longimanus) from observations of the Spanish longline fishery targeting swordfish in the Indian Ocean during the 1998–2011 period. 8th Working Party on Ecosystems and Bycatch, 17–19 September 2012, Cape Town, South Africa. IOTC document IOTC–2012–WPEB08–27; 15 pp.

Rice, J. (2012). Catch per unit effort of oceanic whitetip sharks in the Western and Central Pacific Ocean. 8th Regular Meeting of the Scientific Committee of the WCPFC, 7-15 August 2012, Busan, Republic of Korea. WCPFC document WCPFC-SC8-2012/SA-IP-10; 35 pp.

Rice, J. and Harley, S. (2012). Stock assessment of oceanic whitetip sharks in the western and central Pacific Ocean. 8th Regular Meeting of the Scientific Committee of the WCPFC, 7-15 August 2012, Busan, Republic of Korea. WCPFC document WCPFC-SC8-2012/SA-WP-06; 53 pp.

Rice, J., Tremblay-Boyer, L., Scott, R., Hare, S. and Tidd, A. (2015). Analysis of stock status and related indicators for key shark species of the Western Central Pacific Fisheries Commission. 10th Regular Meeting of the Scientific Committee of the WCPFC, 5-13 August 2015, Pohnpei, Federated States of Micronesia. WCPFC document WCPFC-SC11-2015/EB-WP-04-Rev 1; 146 pp.

Yokawa, K. and Semba, Y. (2012). Update of the standardized CPUE of oceanic whitetip shark (*Carcharhinus longimanus*) caught by Japanese longline fishery in the Indian Ocean. 8th Working Party on Ecosystems and Bycatch, 17–19 September 2012, Cape Town, South Africa. IOTC Document IOTC–2012–WPEB08–26; 5 pp.

ANNEX 3

MODIFYING THE SPECIES LIST (ANNEX 1) OF THE MOU

Adopted at the First Meeting of the Signatories (Bonn, 24-27 September 2012)

Background:

1. According to paragraph 2 of the Memorandum of Understanding on the Conservation of Migratory Sharks, the MoU is intended to apply to all migratory species of sharks included in Annex 1 of this Memorandum of Understanding.

2. Furthermore, in paragraph 3p of the MoU, sharks are defined as "any of the migratory species, subspecies or populations in the Class *Chondrichthyes* (which includes sharks, rays, skates and chimaeras) that are included in Annex 1 of this Memorandum of Understanding.

3. At the Third Preparatory Meeting, at which the MoU was finalized (Manila, March 2010), participants concluded that no automatic listing of those species already included on Appendix I or II of the Convention should take place, on account of the fact that Signatories to the MoU are not necessarily Parties to the Convention.

4. Paragraph 20 of the MoU specifies that any proposed amendments to Annex 1 should be assessed by the Signatories at each session of the Meeting of the Signatories. Paragraph 33 states that modifications should be by consensus.

Procedure for modifying the Species list (Annex 1) of the MoU:

5. Annex 1 may be modified by consensus at any session of the Meeting of the Signatories;

6. Proposals for modification may be made by any Signatory;

7. The process and timing for submission should be as follows:

    a) Signatories should endeavour to provide the text of any proposed modification and the reasons for it, based on the best scientific evidence available, to the Secretariat at least 150 days before the meeting.
    b) The Secretariat is expected to promptly communicate the proposal to all Signatories and the Advisory Committee.
    c) The Signatories should endeavour to provide any comments on the text to the Secretariat at least 60 days before the meeting begins.
    d) The Secretariat is expected to communicate such comments to the Signatories as soon as possible after receipt.
    e) Signatories have the right to refuse consideration of any proposed modification that is submitted to the Secretariat later than the timeframes referred to in this paragraph.

8. Modifications should be made by consensus as provided for under paragraphs 18 and 33 of the MoU;

9. Any shark or ray species listed on the CMS Appendices will automatically be considered by the Advisory Committee as a proposed listing on Annex 1 of the MoU. This is without prejudice to the final listing decision of the MoU; and

10. If the CMS COP agrees on the inclusion of a new shark or ray species in Appendix I or II of CMS, the following procedure should be applied, and the Rules of Procedure and the Terms of Reference for the Advisory Committee respectively adapted:

    a) The Secretariat transmits the relevant documents for this species to the Advisory Committee of the Sharks MoU.

    b) The said Advisory Committee should analyse the proposal based on these documents (and if needed any additional available relevant data and literature) and prepare for the Meeting of Signatories a recommendation concerning the inclusion of the species in Annex 1 of the Sharks MoU.

    c) The Meeting of Signatories of the Sharks MoU should decide by consensus on the inclusion of the new species in Annex 1 of the Sharks MoU.

Criteria for the inclusion of species in the Species list (Annex 1) of the MoU:

Background

11. The Sharks MoU is an agreement in accordance with Article IV (4) of the Convention on the Conservation of Migratory Species of Wild Animals, which had been developed for migratory shark species listed on Appendix II to the Convention.

12. Although Annex 1 of the MoU is independent from CMS Appendices I and II, Signatories have decided to adopt the Convention's broad criteria for the inclusion of species in Appendix II. These are laid down in Article IV(1) of the Convention and have been modified to suit the MoU.

Listing Criteria

13. 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.

14. 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.

15. 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.

15 bis. 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. An example of this is Blue Shark.
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. An example of this is Dusky Shark.
c) Sub-regional migratory: Those species that migrate over smaller spatial scales, but with clear evidence of cyclical and predictable migrations across jurisdictional boundaries Examples of this are guitarfish and wedgefish.
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). An example of this is Angelshark.

~~**Additional considerations for the Advisory Committee, regarding Listing Criteria**~~

16. 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.

16 bis. In order to more clearly determine whether a species meets the criteria and to prioritize species for listing, proposals should be evaluated based on the specie's level of depletion and extent of its migratory nature. To this end a matrix as shown below (Figure 1) may be applied. Red cells indicate species (or stocks) of greater relevance to the CMS Sharks MoU, orange cells indicate species (or stocks) of moderate importance (though potentially greater importance regionally) and blank cells indicating species (or stocks) that could be considered of lower priority to the MoU.

Extent of migratory nature					
	Highly migratory	*Blue Shark*			
	Regional migratory			*Dusky Shark*	
	Sub-regional migratory				*Wedgefish* *Guitarfish*
	Smaller scale coastal migrations or non-migratory				*Angelshark*
		Moderate [1]	Moderate [2]	High	Very high
		Scale of depletion			

Figure 1. Priority species (red and orange) in relation to the extent of their migratory nature and scale of depletion of Species ([1] Moderate decline, but the stock is either assessed routinely and/or the main fishery taking the species is under routine management; [2] Moderate decline, but the stock is unassessed and/or the fishery is not under routine management)

16 ter. 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.

~~17. The Advisory Committee should consider whether these listing criteria are sufficient or whether additional criteria are necessary in order to identify species which may be appropriate for inclusion under the MoU. The broad principles of the CMS criteria (unfavourable status) should remain but any new criteria would take into account harvested species.~~

~~18. If additional criteria are deemed necessary then, in the first instance existing criteria should be drawn upon such as those used within CITES and the IUCN (bearing in mind that these criteria are for "risk of extinction" rather than "favourable status").~~

~~19. Consideration of the need for additional listing criteria should be undertaken before the Second Meeting of Signatories and should not unduly delay the Committee from delivering the tasks listed under Paragraph 24 of the MoU.~~

~~20. The Advisory Committee should consider whether it is necessary to prioritize potential species which qualify for listing on the MoU in order to ensure the MoU remains manageable.~~

~~21. The above is dependent upon the final decision on the listing of a species by Signatories being by consensus, in accordance with paragraph 33 of the MoU.~~

Format for listing proposals

22. A format for listing proposals is annexed to this document[3].

[3] Note from the Secretariat: The new proposed format is included in Annex 4 to this document.

ANNEX 4

FORMAT FOR PROPOSALS TO AMEND CMS APPENDICES

UNEP/CMS/Resolution 11.33 (Rev.COP12)/Annex 2

As adopted by the Standing Committee at its 45th meeting

A. PROPOSAL

B. PROPONENT

C. SUPPORTING STATEMENT

1. Taxonomy
    - 1.1 Class
    - 1.2 Order
    - 1.3 Family
    - 1.4 Genus, species or subspecies, including author and year
    - 1.5 Scientific synonyms
    - 1.6 Common name(s), in all applicable languages used by the Convention

2. Overview (should include a summary of key points from 3.1/3.2 and 4.2)

3 Migrations
    - 3.1 Kinds of movement, distance, the cyclical and predicable nature of the migration
    - 3.2 Proportion of the population migrating, and why that is a significant proportion

4. Biological data (other than migration)
    - 4.1 Distribution (current and historical)
    - 4.2 Population (estimates and trends)
    - 4.3 Habitat (short description and trends)
    - 4.4 Biological characteristics
    - 4.5 Role of the taxon in its ecosystem

5. Conservation status and threats
    - 5.1 IUCN Red List Assessment (if available)
    - 5.2 Equivalent information relevant to conservation status assessment
    - 5.3 Threats to the population (factors, intensity)
    - 5.4 Threats connected especially with migrations
    - 5.5 National and international utilization

6. Protection status and species management
    - 6.1 National protection status
    - 6.2 International protection status
    - 6.3 Management measures
    - 6.4 Habitat conservation

6.5 Population monitoring

7. Effects of the proposed amendment

7.1 Anticipated benefits of the amendment
7.2 Potential risks of the amendment
~~7.3 Intention of the proponent concerning development of an Agreement or Concerted Action~~ (not relevant for the MOU)

8. Range States

9. Consultations

10. Additional remarks

11. References

Explanatory Notes to the Format for Proposals to amend CMS Appendices

Information should be provided for <u>all</u> sections of the template – in a concise and factual manner.

A. The proponent(s) should indicate the specific amendment to the Appendices, and in particular
- whether a taxon is proposed to be included in, or removed from one or both Appendices;
- species or sub-species or higher taxon;
- whether the entire population or a geographically separate population of the taxon is concerned by the proposed amendment.

The proponent(s) should justify the basis of the proposed amendment. In particular, in the case of a taxon being proposed for inclusion in the Appendices, the proposal should justify how the taxon meets the relevant criteria (see section 5.1 for details). This is particularly important in cases where the IUCN classification does not align with the Appendix proposed. The proposal should also clearly articulate the benefit expected to result from the species' inclusion on the proposed Appendix. In the case of a taxon being proposed for removal from the Appendices, the proposal should justify why the taxon no longer meets the criteria for inclusion, and no longer needs the protection provided by the listing (see also section 7.2).
Proposals for the inclusion of taxa above the species level should not normally be accepted unless all of the species within that taxon meet the requirements of the Convention. Information on each species in the higher taxon should be included in the proposal, and each species should be assessed on its own merits. If a proposal is adopted, the individual species within the higher taxon should be listed in the Appendices of the Convention rather than the higher taxon.

B. Official name of the Contracting Party to the Convention submitting the proposal. A proposal can be submitted by more than one Party.

C. A selection of the most important scientific data which explain and substantiate the proposal; these data may be gathered from technical literature or from reports which have so far not been published (references and web links should be provided).

1. <u>Taxonomy</u>: the proposal should include sufficient information to allow the Scientific Council and

the Conference of the Parties to identify clearly the taxon that is the subject of the proposal.

1.4 If the species concerned is included in one of the standard lists of names or taxonomic references adopted by the Conference of the Parties, the name provided by that reference should be entered here. If a different name is used, the reason for the divergence from the taxonomic reference should be explained. If the species concerned is not included in one of the adopted standard references, the proponent should provide references as to the source of the name used.

1.5 The proponent should provide information on other scientific names or synonyms under which the taxon concerned may be known currently, especially in case of significant dispute on its taxonomic status.

1.6 Common names of the taxon proposed should be provided. As a minimum these should include all of the official languages of the Convention.

2. Overview. This section should provide a brief overview of key elements of the proposal, taken from key sections of the supporting statement.

3. Migrations

Proponents should bear in mind the definition of migration in Article I paragraph 1 (a) of the Convention:

a) "Migratory species" means 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;

3.1 Description of the character of migrations, indicating the geographical extent of population movements. With reference to the definition of “migratory species” in Article I, paragraph 1 (a) of the Convention, as interpreted in Resolution 11.33, the cyclical and predictable nature of migrations across national boundaries should be demonstrated.

Resolution 11.33 Paragraph 2 states:
Decides that in the interpretation of the term "migratory species" in Article I, paragraph 1 (a) of the Convention:

(i) The word "cyclically" in the phrase "cyclically and predictably" relates to a cycle of any nature, such as astronomical (circadian, annual etc.), life or climatic, and of any frequency;

(ii) The word "predictably" in the phrase "cyclically and predictably" implies that a phenomenon can be anticipated to recur in a given set of circumstances, though not necessarily regularly in time;

3.2 Information on whether the entire or only part of the population undertakes migrations should be provided, together with why this should be considered a significant proportion of the population. Where only some parts of the population migrate, a description should be provided. Detail on the actual proportion of the species which is migratory should be provided, and the basis on which that is calculated should be stated.

It is difficult to provide a guide on a numerical proportion that should be considered 'significant' due to differences in life history and ecology of the range of taxa to which the Convention applies. Bearing this in mind, a pragmatic approach should be taken. In the spirit of the Convention text, and in the light of existing listings, the species or particular population should benefit from cross-border conservation action. However, some explanation of why the proposal covers a significant proportion of the species concerned (whether a global listing or a geographically distinct population) should be provided to enable reviewers to assess whether the definition is met, as it is the migratory nature of species populations that provides the basis for international co-operation under the Convention.

4. Biological data

4.1 This section should comprise a description of the range, including changes in historical times as well as division of the overall range into reproduction, migrating and wintering (resting) ranges, when applicable; a map should be added, when available. If possible, information should be provided to indicate whether or not the distribution of the species is continuous and, if it is not, to what degree it is fragmented. If relevant, data on the degree and periodicity of fluctuations in the area of distribution should be provided.

4.2 This section should provide an estimate of the current total population or number of individuals differentiated by relevant age classes where possible, or other indices of population abundance, based on the most recently available data. Where appropriate, the number of subpopulations, and their estimated sizes, should be provided. Information on the source of the data used should be provided.

Basic quantitative and qualitative information, when available, should be provided on current and past trends in the species' abundance (providing sources). The period over which these trends, if any, have been measured should be indicated. If the species naturally undergoes marked fluctuations in population size, information should be provided to demonstrate that the trend transcends natural fluctuations If generation-time has been used in estimating the trend, a statement should be provided of how the generation-time has been estimated.

4.3 Specification of the types of habitats used by the taxon over its entire migration range and, when relevant, the degree of habitat specificity and dependency.

When available, information on the nature, rate and extent of habitat change (e.g. loss, degradation or modification) should be provided, noting when applicable the degree of fragmentation and discernible changes in the quality of habitat. Where appropriate, the relationship between habitat and population trends should be described.

4.4 Summary of general biological and life history characteristics of the taxon relevant to its conservation status (e.g. reproduction, recruitment, survival rate, sex ratio, reproductive strategies).

4.5 If available, information about the role of the taxon in its ecosystem, and other relevant ecological information, should be provided, as well as about the potential impact of the proposal on that role.

5. Threats and conservation status

5.1 This section should provide information on the IUCN Red List assessment for a taxon, if

available. The scale of the Red List assessment should match the scale of the listing proposal. Thus for a proposal to include a species in the Appendices, the Red List assessment used should be a global assessment. However, if it is proposed to include a population or geographically separate part of a population of any species, then the Red List assessment used should be with respect to that population or part of that population.

In line with the use of the IUCN Red List Categories and Criteria (Version 3.1, second edition) recommended by Resolution 11.33, a taxon assessed as 'Extinct in the Wild', 'Critically Endangered', or 'Endangered' using the IUCN Red List criteria is eligible for consideration for listing in Appendix I, recognizing that CMS Appendix I species are broadly defined as 'endangered';

Resolution 11.33 Paragraph 1 states:

Decides to interpret the term "endangered" in Article I, paragraph 1(e), of the Convention, as meaning: "facing a very high risk of extinction in the wild in the near future";

The guidelines annexed to Resolution 11.33 state:

- *a taxon assessed as 'Vulnerable' or 'Near Threatened' would not normally be considered for listing in Appendix I unless there is substantive information subsequent to the IUCN Red List assessment that provides evidence of deteriorating conservation status, and information about the conservation benefits that an Appendix I listing would bring;*

- *a taxon assessed as 'Extinct in the Wild', 'Critically Endangered', 'Endangered', 'Vulnerable' or 'Near Threatened' using the IUCN Red List criteria will be eligible for consideration for listing in Appendix II, recognizing that such taxa meet the definition of 'unfavourable conservation status' under the Convention;*

- *a taxon assessed as 'Data Deficient' using the IUCN Red List criteria should be evaluated in terms of the merit of any individual Appendix II proposal. Information that may be available since the Data Deficient assessment should be considered on a case by case basis. It would be exceptional for a 'Data Deficient' assessed taxon to be considered for listing in Appendix I.*

5.2 This section should include information complementary or equivalent to the IUCN Red List Assessment.

Information that has become available since the last IUCN Red List assessment for a taxon should be provided, using the same principles and percentage changes in populations as the red-listing process.

If an IUCN Red List assessment is not available for a taxon, equivalent information, using the same principles and percentage changes in populations as the red-listing process, should be provided to enable the proposal to be assessed on an equivalent basis.

5.3 This section should include a specification of the nature, intensity and, if possible, relative importance of human-induced threats (e.g. habitat loss or degradation; over-exploitation; effects of competition, predation or disease by introduced species; climate change; toxins and pollutants; etc.). Where possible, a determination of the level of threat should be provided, for the purpose of future assessments of the effects of the amendment.

5.4 This section should include a description of any threat related specifically to the migratory

behaviour of the taxon or affecting it (e.g. obstacles to migration).

5.5 This section should include a description of the types and extent of all known uses of the taxon, indicating trends if possible.

6. Protection status and species management

6.1 This section should include details of legislation in relevant Range States relating to the conservation of the species, including its habitat, either specifically (such as endangered species legislation) or generally (such as legislation on wildlife and accompanying regulations). The nature of legal protection (i.e. whether the species is totally protected, or whether harvesting is regulated or controlled) should be indicated. Where appropriate, an assessment of the effectiveness of this legislation in ensuring the conservation and/or management of the taxon should be provided.

6.2 This section should include details of international instruments relating to the species in question, including the nature of the protection afforded by such instruments. This section should also indicate where the species is captured by management measure of a Regional Fisheries Management Organization (RFMO), whether as a targeted species or bycatch. Where appropriate, an assessment of the effectiveness of these instruments in ensuring the conservation and/or management of the species should be provided.

6.3 This section should include details of programmes in place in the individual Range States as well as of joint programmes between Range States to manage populations of the taxon in question (e.g. recovery plans, RFMO management systems and/or conservation measures, controlled harvest from the wild, captive breeding or artificial propagation, reintroduction, ranching, quota systems, etc.). It should include, where appropriate, details such as planned harvest rates, planned population sizes, procedures for the establishment and implementation of quotas, and mechanisms for ensuring that wildlife management advice is taken into account. Where applicable, details should be provided of any mechanisms used to ensure a return from utilization of the species in question to conservation and/or management programmes (e.g. pricing schemes, community ownership plans, export tariffs, etc.).

6.4 This section should provide information, where available, regarding the number, size and type of protected areas relevant to the habitat of the species, and on habitat conservation programmes outside protected areas.

6.5 This section should provide details of programmes in place to monitor the status of wild populations and the sustainability of offtake from the wild (referencing information provided in section 6.1, 6.2 and 6.3).

7. Effects of the proposed amendment

7.1 This section should clearly demonstrate how the proposed amendment will benefit the taxon. Coherence with existing measures in other multilateral fora should be demonstrated. As far as possible information should also be provided on the following:

i. whether existing legislation in the Range States is sufficient, or if further protection is needed;

ii. the extent to which the factors that have led to an unfavourable conservation status are anthropogenic or natural;

iii. whether existing bilateral or multilateral measures/agreements need to be boosted or amended;

iv. the extent to which all range states already protect the species or have management recovery plans in place; and

v. how listing in a CMS Appendix would support measures in other multilateral fora, especially those under the Convention on International Trade in Endangered Species (CITES), or RFMOs.

7.2 This section should include a statement of the potential risks to conservation of the proposed amendment. In the case of proposals to removing a taxon from the Appendices, an assessment of the suitability of removing the protection provided by the CMS Appendices should be provided. Consideration should also be given to coherence with protection under other regimes – such as CITES or RFMOs.

7.3 The proponent(s) must provide a statement of its/their intention of the following:

- concluding an international agreement or concerted action; and

- adopting the role of Focal Point for the nominated taxon and lead the development of an international agreement or concerted action.

8. Range States

The proponent(s) should provide a list of States where the occurrence of species has been proved (indicating, where possible, whether these are breeding, migrating or resting ranges).

9. Consultations

The proponent(s) should consult, as far as possible, nature conservation and/or fisheries authorities of the other Range States before the proposal is submitted and give a brief outline of any comments received upon the proposal. Where comments were sought but not received in sufficient time to enable their inclusion in the supporting statement, this should be noted, as well as the date of the request.

In the case of taxa that are also managed through other international agreements or intergovernmental bodies, consultations should be undertaken to obtain the comments of those organizations or bodies. Where comments were sought but not received in sufficient time to enable their inclusion in the supporting statement, this should be noted, as well as the date of the request.

10. Additional remarks

This section should be used for any other relevant information that does not fit into the sections above. This section may be left blank if there are no additional remarks to be made.

11. References

Full bibliographic references should be provided, including names of all authors so that readers of the proposal who wish to cross-check the references can find them easily. As far as possible references should be from peer-reviewed rather than 'grey' literature or unpublished sources. Where possible please provide web-links or 'doi' numbers to make finding the reference easily.