UN environment CMS

MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION OF MIGRATORY SHARKS

CMS/Sharks/Outcome 3.3

14 December 2018

3rd Meeting of the Signatories (Sharks MOS3)
Monaco, 10 – 14 December 2018

RECOMMENDATIONS OF THE ADVISORY COMMITTEE ON SPATIAL MANAGEMENT AND THE IMPLEMENTATION OF ACTIVITY 9.1 IN THE CONSERVATION PLAN

Background

1. As stated in the Conservation Plan of the Sharks MOU under Activity 9.1 (Objective C), Signatories are requested to "designate and manage conservation areas, sanctuaries or temporary exclusion zones along migration corridors and in areas of critical habitat, including those on the high seas in cooperation with relevant RFMOs and RSCs where appropriate, or take other measures to remove threats to such areas".

2. In its function to "serve and assist the Signatories in the implementation of the Memorandum of Understanding including the Conservation Plan", the AC provides expert advice and makes recommendations to MOS3 on the implementation of Activity 9.1.

General considerations

3. Spatio-temporal management, such as MPAs (henceforth called spatial management) are not considered to be the 'single option' for managers and are just one of the tools that can be used. Special management approaches often have limited benefits for highly mobile and migratory species (Ketchum et al., 2014; Espinoza et al., 2015b; Heupel et al., 2015). The high individual variability in residency and large-scale connectivity of some shark species creates additional challenges for their management across multiple jurisdictions. For some species, a combination of approaches, which may include spatial management but also other measures, might be required. In particular for pelagic species, for which critical habitats might not be clearly defined, approaches other than spatial management might have to be prioritized.

4. Options for spatial management should be considered case by case, and the merits will depend on a range of factors, including location, species and life history stage. In general, spatial management is expected to be more effective for species or life history stages that are more site-specific. Shark sanctuaries have been criticized because they are limited to States with certain socioeconomic features (e.g., higher dependence on dive tourism and/or ecotourism), may have insufficient enforcement, may lead to overexploitation and degradation of other resources and habitats not included in the shark sanctuary regulations, and a diversion of resources from other fisheries management and conservation measures. In response to these criticisms, it has been argued that this type of moratorium can in fact be more easily enforced than other conservation tactics through trade export monitoring, and effectively preventing overexploitation. There is considerable debate on this subject (e.g. Davidson, 2012; Chapman et al., 2013)

5. Spatial management can have wider economic benefits, for example through ecotourism.

6. Spatial management will generally require appropriate enforcement, the resourcing of which depends on location and area covered.

7. To be most effective, spatial management requires a sound understanding of critical sites in space, over the course of the year (seasonality) and time (year-to-year importance). In addition to critical sites (e.g. mating, pupping, nursery, feeding and overwintering grounds, and on a more local scale, cleaning stations), migratory corridors can also be important, but are generally less studied. Areas of high density may also be considered, as unregulated fishing in such sites could have a much higher catch per unit effort. In most instances, there are insufficient data to identify and delineate critical habitats of CMS-listed elasmobranchs.

8. In some instances, there may be merit in spatial management of other ecological features (e.g. geological structures or prey species) that could have indirect benefits to elasmobranchs, rather than having spatial management for the elasmobranch per se.

9. Spatial management, which can range from seasonal restrictions on gear to a full no-take zone, would benefit from the use of appropriate and standardized terminology to facilitate discussions with stakeholders.

10. There is already a range of spatially managed areas, including MPAs, and the merits of those already in place could usefully be examined to gauge their efficacy for various elasmobranchs.

11. There needs to be a sound knowledge base with which to gauge likely changes to fisher's behaviour (e.g. changes to fishing gears, practices or grounds), and the wider ecosystem impacts of such changes. For example, a 'closed area' may simply re-distribute effort to the border of the protected area, or displace fishing effort to a different, and potentially another 'sensitive' area. Although shark sanctuaries may have the intended effect of reducing shark mortality, there is a need to address bycatch within shark sanctuary regulations, and to collect baseline data that can be used to monitor sanctuary effectiveness and make changes over time as needed (e.g., if fishing techniques change or if the range of the species changes over time).

Species-specific considerations

12. Sawfishes (Pristidae spp.)

    a. Spatial management was considered potentially useful for sawfish, as they have important coastal and estuarine habitats.
    b. Critical sites would need to be more clearly defined and delineated.
    c. Noting that sawfishes have been extirpated from most of their range, all known habitats in which they occur might be considered critical.

13. White Shark (Carcharodon carcharias)

    a. The White Shark is a protected species in many areas of high local abundance.
    b. Some of the areas of high local abundance are associated with areas of prey abundance (e.g. pinniped colonies) that may already have some form of protection.
    c. Given its protected status in the waters of important range states, and CITES listing, there is probably less rationale for further protection through spatial management.
    d. Further studies in the Mediterranean Sea, to determine whether the Sicily/Malta region are critical sites (and potential migratory corridor) could usefully be undertaken.

14. Mako sharks (Isurus paucus and I. oxyrinchus)

    a. Whilst there may be potential benefits of spatial management, the lack of data to identify critical sites and to assess likely efficacy precludes spatial management at the present time.

15. Basking Shark (Cetorhinus maximus)

    a. Areas of high abundance of Basking Shark when surface feeding are documented, but such sites can vary over time. Data on any sub-surface distributions are insufficient to identify critical sites.
    b. Given its protected status in the waters of important Range States, and CITES listing, there is likely less rationale for further protection through spatial management.

16. Spiny Dogfish (Squalus acanthias, northern hemisphere populations)

    a. Whilst there may be potential benefits of spatial management, the lack of data to identify critical sites and to assess likely efficacy precludes spatial management at present.
    b. Management measures for NE and NW Atlantic stocks have been more restrictive in recent years, and so there is less rationale for further protection through spatial management in these areas.
    c. Both the taxonomic status and population status of nominal Mediterranean Sea and Black Sea stocks require further study, including identification of critical sites.

17. Whale Shark (Rhincodon typus)

    a. Areas of high local abundance of Whale Shark when feeding near the surface are documented. Data on sub-surface distribution are insufficient to identify other critical sites, including migratory corridors.

b. There may already be some overlap between feeding aggregations of whale shark with other features that may already be spatially managed (e.g. Ningaloo Reef; Maldives).
c. Given its protected status in the waters of important Range States, and CITES listing, there is likely less rationale for further protection through spatial management.
d. Areas of high local abundance tend to be based mainly on juvenile males, and so further data to inform on the distribution and potential critical sites for immature females and mature whale sharks are required.
e. There can be economic benefits in relation to ecotourism in areas of high seasonal abundance, and so such sites may already be incorporated in marine spatial planning.
f. Considering spatial management for important spawning grounds for other species (which may form the basis of feeding grounds) may be an alternative consideration.

18. Silky Shark (Carcharhinus falciformis)

a. Whilst there may be potential benefits of spatial management, the lack of data to identify critical sites and to assess likely efficacy precludes spatial management at present.
b. Juvenile Silky Sharks are known to aggregate with seamounts (and FADs), and further studies of this could usefully be undertaken.

19. Thresher sharks (Alopias spp.)

a. Whilst there may be potential benefits of spatial management, the lack of data to identify critical sites and to assess likely efficacy precludes spatial management at present, especially for Pelagic and Bigeye Threshers.
b. The Common Thresher is more associated with shelf seas, and there may be more rationale for spatial management in such areas, but sites would need to be identified, and data are currently too limited.

20. Hammerhead sharks (Sphyrna lewini and S. mokarran)

a. Whilst there may be potential benefits of spatial management, the lack of data to identify critical sites and to assess likely efficacy limits options for spatial management at present.
b. There are some known aggregation sites for *S. lewini* (e.g. Cocos), which can be important for ecotourism. There can also be important nursery grounds in some coastal zones.
c. There may already be some overlap between some areas of aggregations with other features that may already be spatially managed (e.g. Sudan). Further studies to determine whether such sites are benefitting hammerhead sharks are required.
d. Numerous studies have reported that the survival of hammerhead sharks, when caught in a range of gear (e.g. gillnets and longlines), is generally lower than observed in other elasmobranch species captured in the same fishery. Unless changes in fishing practices can be shown to enhance discard survival, spatial management may be an important alternative management measure to reduce mortality.

21. Porbeagle (Lamna nasus)

a. Whilst there may be potential benefits of spatial management, the lack of data to delineate critical sites and to assess likely efficacy precludes spatial management at present. Porbeagle occurs in both shelf seas and ocean ecosystems, and further studies relating to critical sites in shelf seas are required, as these may have greater overlap with human activities.

22. Mobulids (Manta spp. and Mobula spp.)

    a. Whilst there may be potential benefits of spatial management, the lack of data to identify critical sites (including migratory corridors) and to assess likely efficacy precludes spatial management at present for most mobulid species.
    b. Areas of high local abundance of some mobulid species are documented, particularly *Mobula alfredi*, and sites include feeding grounds and cleaning stations.
    c. There may already be some overlap between some described mobulid aggregations with sites already spatially managed (e.g. the Maldives).
    d. There can be economic benefits in relation to ecotourism in areas of high seasonal abundance, and so such sites may already be incorporated in marine spatial planning.