Atlantic States Marine Fisheries Commission

Coastal Sharks Management Board

May 4, 2022
10:15 – 11:15 a.m.
Hybrid Meeting

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order (*M. Bell*)	10:15 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from October 2021	10:15 a.m.
3.	Public Comment	10:20 a.m.
4.	Consider Zero Retention Limit/Closure of the Shortfin Mako Fishery **Final Action** • Overview of the NOAA Fisheries Proposed Rule (*K. Brewster-Geisz*)	10:30 a.m.
5.	Review Convention in the International Trade in Endangered Species of Wild Fauna and Flora Proposal to list 54 Shark Species in Appendix II (*D. Colson Leaning*) **Possible Action**	11:00 a.m.
6.	Review and Populate Coastal Sharks Advisory Panel Membership *(T. Berger)* **Action**	11:10 a.m.
7.	Other Business/Adjourn	11:15 a.m.

The meeting will be held at The Westin Crystal City (1800 Richmond Highway, Arlington, VA; 703.486.1111) and via webinar; click here for details

MEETING OVERVIEW

Coastal Sharks Management Board
Wednesday May 4, 2022
10:15 – 11:15 a.m.
Hybrid Meeting

Chair: Mel Bell (NC) Assumed Chairmanship: 05/21	Technical Committee Chair: Angel Willey (MD)	Law Enforcement Committee Representative: Greg Garner (SC)
Vice Chair: Erika Burgess (FL)	Advisory Panel Chair: Vacant	Previous Board Meeting: October 20, 2021
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NC, SC, GA, FL, NMFS (13 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 20, 2021

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Closing the Shortfin Mako Fishery Final Action (10:30-11:00 a.m.)

Background

- NOAA Fisheries recently published a proposed rule **(Briefing Materials)** that would establish a flexible shortfin mako shark retention limit with a default limit of zero in commercial and recreational HMS fisheries.
- The change in the retention limit to zero is to implement the 2021 International Commission for the Conservation of Atlantic Tunas (ICCAT) recommendation. NOAA Fisheries proposes to leave the default limit of zero in place until changed. During the fishing year, NOAA Fisheries could increase the shortfin mako shark retention limit from the default, or subsequently decrease the retention limit, for the commercial fishery, the recreational fishery, or both, based on regulatory criteria and retention allowed by ICCAT.
- NOAA conducted a public hearing for the proposed rule on April 27th.
- The Commission could consider closure of the shortfin mako fishery to have consistent regulations as federal waters.

Presentations

- Overview of the NOAA Fisheries Proposed Rule by K. Brewster-Geisz.

Board action for consideration at this meeting

- Consider a zero retention limit/closure of the shortfin mako fishery.

5. Review Convention in the International Trade in Endangered Species of Wild Fauna and Flora Proposal to list 54 Shark Species in Appendix II Possible Action (11:00-11:10 a.m.)
Background • Panama has proposed to list 54 shark species in the Convention in the International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II (**Supplemental Materials**). • A CITES Appendix II listing does not prohibit international trade but requires export permits and proof that the species was legally harvested and that the trade is not detrimental to the survival of the species. • The USFWS has reached out to determine if state agencies have any input or edits to the draft proposal to list 54 sharks in CITES Appendix II **(Supplemental Materials)**
Presentations • D. Colson Leaning will present an overview of the draft proposal
Board action for consideration at this meeting • Provide comment on the draft proposal

6. Review and Populate Coastal Sharks Advisory Panel Membership Action (11:10-11:15 a.m.)
Background • Thomas Newman from North Carolina has been nominated to the Coastal Sharks Advisory Panel.
Presentations • Nominations by D. Colson Leaning.
Board action for consideration at this meeting • Approve nomination.

7. Other Business/Adjourn

REPÚBLICA DE PANAMÁ
GOBIERNO NACIONAL

MINISTERIO DE
AMBIENTE

Panama April 06, 2022
DM-0630-2022

The Honorable Deb Haaland
Secretary of the United States Department of the Interior
United States of America

Support for Panama's proposal to list the grey reef shark (*Carcharhinus amblyrhynchos),* dusky shark (*C. obscurus*), smalltail shark (*C. porosus),* and the Ganges shark (*Glyphis gangeticus*) in Appendix II of CITES at CoP19

Dear Honorable Secretary Haaland,

Panama has long been committed to the effective management of marine biodiversity. Now, these efforts are even more topical. Between last year's Climate Change CoP commitments and this year's finalization of the Post-2020 Global Biodiversity Framework, governments around the world are working to ensure that our planet is sustainably managed and protected for the healthy future of all its people. Panama, like the United States, has taken these processes and their aims very seriously.

We are therefore honored to host yet another Convention aimed at the conservation of the world's wildlife, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) this November 14-25, 2022, in Panama City, Panama. As a known shark conservation champion, we would be honored to have the USA's partnership and support to secure an ambitious ocean agenda and a future for the world's sharks at this crucial meeting.

At this Conference of the Parties (CoP19), in order to enact better management for marine species and prevent global trade driving shark species to extinction, Panama aims to list the grey reef shark (*Carcharhinus amblyrhynchos)*, dusky shark (*C. obscurus)*, smalltail shark (*C. porosus)* and Ganges shark (*Glyphis gangeticus)* in Appendix II of CITES. These species fully meet criteria adopted in Resolution Conf. 9.24 (Rev.Cop17) Annex 2a, Criterion A and B, to be included in Appendix II, with the rest of the family Carcharhinidae (requiem sharks) included as look-alike species under Annex 2b, Criterion A.

Each of these species have suffered global population declines of over 70%, driven by unmanaged trade in their fins. Trade is the major threat, not only to grey reef, dusky, smalltail and Ganges shark, but to

the entire family. Together these species make up the majority of the unsustainable global trade in shark fins. Additionally, the grey reef shark, included in this proposal, is a predator that maintains the health of the world's coral reefs in the face of climate change. We are concerned that we have already seen this species disappear from many nation's reefs, despite their role in mitigating the worst effects of climate change on coral reefs, as well as their high value as an ecotourism resource. Strong intergovernmental action is needed now to end this serial depletion of the world's sharks and to secure the livelihoods of our coastal communities that depend on sustainable trade and tourism for their survival. Countries in our region do not have the widespread access to the international fishing grounds available to others and our coastal communities depend on coastal shark species of the requiem family for their food security.

Furthermore, Panama is convinced that the family level approach is essential, because this will bring the vast majority of the trade in shark fins under CITES control for the first time, an action that is long overdue. This approach will also assist in implementation efforts, as visual and genetic identification of traded products is simplest at the family level. Simply listing a few of these species would be incredibly complex and time consuming with regards to the visual identification of traded fins and meat, leading to customs officials searching for small numbers of fins that look very similar to large numbers of closely related unlisted ones. Ease of identification is essential for countries with limited customs enforcement capacity, a situation faced by many nations in our region. While the tools already exist to implement such a listing, an additional guide will also be produced to aid in implementation of our proposal, and we will be providing it to Parties before CoP19.

By listing species before they are critically endangered, fisheries management tools can still be effective. This is the case for several species in the requiem shark family, where effective uptake of available non-detriment finding (NDF) tools will be far easier to facilitate. Increasing examples of positive NDF's will also facilitate better relations between fisheries and environment departments in implementing CITES, and lead to far better provision of data on the overall trade in shark products.

As hosts of CITES CoP19, Panama looks forward to decisions by global governments to ensure that trade does not lead to further declines in wild populations of animals. This is especially true with regards to marine species, whose trade has often gone overlooked and undermanaged. We want to add your voice to ours, to tell countries that attend the CoP in Panama that the continued unsustainable trade in shark fins must end – full trade regulation is needed now to secure livelihoods and food security for future generations. Our proposal is attached here for your consideration.

We applaud the USA for its history of championing shark conservation efforts via CITES and providing critical support for capacity building and CITES implementation in our region. We hope that we can

continue to count on support from the USA for shark conservation and sustainable trade. We have attached the updated version proposal here, with additional data included, and hope that you will consider joining us as a formal co-sponsor. We are also in discussions with several other shark champion nations around the world, as we look to build a coalition of champions to make our CoP a true success for the world's oceans. Should you be able to join us as a cosponsor, once you have formally notified CITES of your intention to join us, please let us know, and we will add you to a revised draft of the proposal. We look forward to working with you to ensure that Panama's CoP19 is remembered as the turning point where we prevented the extinction of the world's sharks and rays.

Sincerely,

MILCIADES CONCEPCION
Minister Ambient

C.C: MC/DL/AGA/SB/JJC

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1. Summary of the requiem shark listing proposal

PROPOSAL:
Panama is proposing the listing of two Critically Endangered and two Endangered requiem sharks, and are including the remaining members of the family (50 species) as lookalikes due to similarity of appearance of highly frequently internationally traded products (including fins and meat).

WHY THIS PROPOSAL:
This Appendix II proposal would help bring the majority of the shark fin trade under CITES Appendix II regulation (i.e., ensure sustainable, legal trade). Noting that 70% of the fin trade (Cardenosa et al, in press) and over 68% of the requiem shark family is threatened with extinction (Dulvy et al 2021), such action is clearly overdue given that the intent of CITES Appendix II is to regulate the trade in species not necessarily threatened with extinction but in which trade must be controlled in order to avoid utilization incompatible with their survival (CITES Res. Conf. 9.24).

Management of all species in this heavily traded family under CITES, with NDFs in place, is the minimum the precautionary approach and CITES convention text indicates is necessary, if commercial trade is to continue.

SIGNIFICANCE OF PROPOSAL:
International trade is the major threat to this family of sharks. At least 35 species in the requiem shark family have been documented in the fin markets of Hong Kong, representing 46% of all species recorded in this market (Fields et al. 2018). The proportional contribution (volume) of requiem shark species in the overall fin trade could be as high as 85.5% (Clarke et al. 2006, Fields et al. 2018, Cardenosa et al. 2018a, Cardeñosa et al. 2020).

IMPLEMENTATION:
The family level listing approach is essential as visual and genetic ID of traded products is simplest at the family level, and ease of ID across so many species threatened by international trade is essential for countries with limited customs enforcement capacity.

Panama are updating the proposal with additional information from the world's leading shark and ray ID experts, who have produced new guides for all currently listed sharks and rays launched at the Standing Committee in Lyon this March. That information further confirms why a family level listing approach is needed. An ID guide for the Family will be produced to enable implementation of the proposal and will be launched prior to the CoP.

SUPPORT:
Panama have already secured the support of Colombia, and Senegal as co-sponsors and are conducting further outreach to add additional co-proponents from several regions ahead of the June deadline for the submission of listing proposals for CoP19.

2. Decline information and proposal justification

Evidence of rapid recent declines of 70% or more in populations of the grey reef shark (*C. amblyrhynchos),* the dusky shark (C. *obscurus*), the smalltail shark (*C. porosus*), and the Ganges shark (*G. gangeticus*) are documented across much of their range. These low-productivity marine, estuarine, and freshwater species fulfil the CITES criteria for inclusion in Appendix II, and, in many locations approach or exceed the threshold for inclusion in Appendix I (Rigby et al. 2019 and 2021, MacNeil et al. 2020, Pacoureau et al. 2021).

All the lead species in the listing proposal - the grey reef shark (*C. amblyrhynchos),* the dusky shark (C. *obscurus*) the smalltail shark (*C. porosus*) and the Ganges shark (*G. gangeticus*) – are classified by the IUCN Red List as Endangered or Critically Endangered on the IUCN Red List, with all assessments conducted in the last two years.

To date CITES has mainly listed pelagic, offshore species caught in RFMO fisheries. The species in the requiem shark family include many coastal species, which are particularly critical for food security, livelihoods, and regulate balance within the marine ecosystem which in turn contributes to economic growth; all factors highlighting why sustainable utilization of this group, through trade controls brought about by a CITES Appendix II listing, is vital.

68% of the requiem shark family is currently considered threatened by the IUCN Red List of Threatened Species (Dulvy et al 2021) and this CITES Appendix II listing at the family level is justified if the intent of CITES Appendix II, to regulate the trade in species not yet threatened with extinction, is to be met. An Appendix II listing is the minimum required for all the species within this family under the precautionary approach. For many it may already be too late and we cannot wait until it is also too late for those that can still be traded sustainably.

3. Requiem shark listing proposal – links to implementation of current listings

This proposal, at the family level, would incorporate up to 85.5% of the fin trade on Appendix II. When adopted, most shipments of shark fins would contain CITES listed species and require associated paperwork. Such an approach has multiple benefits for data collection and traceability of the overall trade, reduction in the current time-consuming efforts needed to identify small amounts of CITES listed fins in large shipments, in addition to preventing further overexploitation driven by the international trade. With visual ID possible to the requiem shark family level, this listing could be implemented in the manner of current CITES shark listings, with visual ID guides and customs trainings used to enforce listings in all capacity settings.

The proposal offers an opportunity to fully utilize the NDF and identification tools developed for sharks and rays since the first commercial listings in 2013. The significant investment over the last decade to develop effective visual and genetic identification techniques, along with shark specific non-detriment finding development guides has led to a suite of tools readily available for use by governments around the world. With these tools able to be adapted simply to implement all species in Panama's listing proposal, and sharks recently confirmed as the second

most threatened vertebrate group on the planet, there may never be a better time to bring the vast majority of the shark fin trade under CITES Appendix II control to prevent even further population loss.

Those existing tools are comprehensive and carefully designed, but their effective use to inspect large containers full of shark fins has been challenged by the CITES listing to date of species that only make up a small percentage (25%) of the overall trade in shark fins and meat. This makes inspecting large shipments of shark fins challenging and time consuming, allowing easy concealment of listed species fins in large shipments of unlisted species.

Additionally, over 90% of the sharks listed on CITES Appendix II to date are already IUCN threatened, which given shark's biology makes sustainable trade via NDF's challenging. Far more proactive and precautionary Appendix II regulation of traded shark products is needed if the implementation of shark listings via sustainable catch and trade management is to be effective. Comprehensive Appendix II regulation of the trade in shark fins will bring about such a transition.

There can be no doubt that many species within the requiem shark family exceed the CITES Appendix II listing criteria, and approach that of Appendix I, even if a conservative interpretation of the CITES listing criteria for marine species is used. The key question is which species should be included as lookalikes. This is a greater challenge than for previous shark listing proposals, as many species within the family are visually similar, and the family contains many traded species. The following sections detail why a family level listing is needed to allow for the implementation of the listing proposal in a manner that works for countries of all capacity levels, as per the existing CITES Appendix II listings.

a) <u>Identification implementation considerations</u>

Listing the requiem shark family would help facilitate more efficient implementation and enforcement of all current CITES shark listings at the customs and border control level. With over 80% of the trade in shark fins Appendix II listed, it would be likely that every shipment of fins would contain CITES Appendix II species. Customs officials should then expect that each shipment be accompanied by the appropriate CITES permit or certificate. Such a shift will reduce the burden on customs and border control agents, who currently face time-consuming searches of large shipments of fins for small numbers of CITES listed species products. Additionally, the additional permitting required for the majority of the fin trade would lead to far better data on, and CITES regulation for sustainability and legality of all trade in shark fins.

For existing CITES listed sharks, dorsal fin visual ID has been used as the primary technique to identify species at the point of trade. Some species, such as the oceanic whitetip were able to be listed at the species level due to clear markings on their fins, and others such as wedgefish to the family level due to similarity of dorsal fins between all wedgefish species. Governments made these decisions based on the ease of visual identification of the unprocessed fins, the first point of trade/high value product from sharks. The use of visual ID guides to implement listings

has been crucial, as CITES-specific visual ID guides for listed species in their primarily traded form allow for simple implementation of shark listings for customs officials in countries of all capacity level. Via these tools, effective implementation of current listings has been documented in nations that vary greatly in both geography and capacity such as Hong Kong, Ecuador, Fiji and Bangladesh.

To ensure the development of an effective and enforceable proposal, Panama has taken this into account. Panama has undertaken an analysis of fin ID for the lead species in this proposal with the authors of the existing CITES shark and ray ID guides to determine which species within the family should be included as lookalikes. For the four proposed species, this analysis confirmed that there are visual lookalike fins throughout the family, but requiem shark dorsal fins can only be identified visually to the family level—resulting in our shared proposal.

CITES Parties must list species that clearly meet the criteria and are threatened by international trade. But they also must ensure that implementation is equitable for Parties of all capacity levels. By listing the rest of the requiem shark family to allow for simple visual identification of traded fins, we are accomplishing both. This has proven effective with other shark listings, such as wedgefish or mobulid rays—both listed at the family level due to ID concerns within the family.

A family level listing will be far simpler for customs staff to implement than only the four leading species of our proposal. If we just listed a few of these species, visual identification of traded fins and meat would be incredibly complex and time consuming, searching for small numbers of fins that look very similar to large numbers of closely related unlisted ones.

As noted in the proposal itself, a recent analysis of the implementation of existing CITES shark and ray listings reveals compliance issue due to similarity of appearance of shark products in trade, compounded by large shipments of mixed CITES and non-CITES listed species (Villate-Moreno 2021). All unlisted species found in the shipment analysed in this study, and misidentified as potentially CITES listed belong to the family Carcharhinidae. Listing the entire family as per this listing proposal, would remove this issue of mixed shipments and misidentification. With the vast majority of the shark fin trade consisting of CITES listed species, almost all legal shipments of shark fins would need to be accompanied by CITES paperwork. Furthermore, even shipments without paperwork would almost certainly contain CITES-listed species. Coupled with the ability to visually identify Carcharhinidae fins to the family level, this would make the basic steps of inspection and confiscation far simpler and more efficient for customs staff, especially in locations where genetic tools, or wider customs capacity are lacking or limited.

It is crucial to maintain the ease of visual ID we have had to date, and just like for the wedgefish and mobulid proposals at CoP's 17 and 18, any species within this family will need a family level listing due to similarity of fins. Avoiding listing requiem sharks at all is also not an option, with nearly 70% of the family already IUCN threatened, and many species already Endangered or Critically Endangered. CITES action is needed now.

Panama continues to partner with leading experts in visual and genetic shark identification to further strengthen the ID sections of the proposal (newer draft of the proposal attached to this note). In the coming weeks that will be finalized, and Panama will add a full visual identification guide to show the means of family level identification implementation before the CoP.

The revised version of the proposal contains a set of matrices that compares fins from all known requiem shark species and all currently CITES listed sharks. The green indicates where it is possible to visually distinguish between the fins of species (see table 5 for dorsal, table 6 for pectoral, table 7 for caudal and table 8 for meat). The left-hand side columns show that it is easy to distinguish between currently CITES listed species and unlisted species from the requiem family for most fin positions. The red sections on the right-hand side indicate that it is not possible to distinguish between the fins of many (currently unlisted) requiem shark species.

This shows the wide range of lookalikes within the family when visual ID is considered. With this wide range of lookalikes, and given that shark fins are typically traded in mixed shipments containing a range of species, a family level listing is by far the most resource-efficient way to regulate this trade. If a subset of species within the family were listed, customs level enforcement would be incredibly time consuming due to the numerous lookalikes identified in the matrix. But at the same time – the listing of threatened species within the family that meet the CITES listing criteria cannot be ignored, again supporting the need for a family level approach if any species within the family are to be listed.

Blue sharks are a lookalike for the four-lead species in terms of several of their fins, and particularly their meat. Given the increasing scale of the meat trade, with blue sharks one of the most commonly traded sharks, the species inclusion is an essential part of the proposal. The removal of the blue shark from Panama's proposal could lead to small numbers of Critically Endangered species easily being hidden in shipments predominated by lookalike blue shark fins or meat. This is already seen in Europe with current shark listings (Villate-Moreno 2021). Blue sharks would be an excellent candidate for sustainable, traceable CITES Appendix II trade via the NDF process, especially because unlike other sharks they are able to support higher sustainable catches—if listed before they reach endangered status (as per the intent of Appendix II).

b) <u>Non-Detriment Finding (NDF) implementation</u>

Led by the German government, new electronic Non-Detriment Finding (eNDF) software has been developed in an effort to simplify and standardize the approach governments take to conducting NDFs. Aimed at facilitating increased NDF use and improving the performance of those conducted, the eNDF software consolidates and simplifies the initial 136-page NDF shark guidance document (produced after CoP16), allowing for improved NDFs that ensure only trade that is demonstrated to be sustainable is permitted.

These NDF tools for sharks have facilitated a wide range of NDF's for listed shark and ray species, many of which are publically available on the CITES website. Similar to visual ID training, there has been a high level of investment in trainings and workshops for officials in lower capacity countries around the world, with strong results demonstrating that the NDF process (i.e., a CITES listing), drives positive change in ensuring the sustainability of sharks and rays.

The late listing of sharks on CITES Appendix II (see section C, below) has precluded positive NDF's in many situations, hampering the use of the new NDF tools for shark and ray species. With NDF's often negative, fostering closer relationships between countries fisheries and environment departments to implement listings has been challenging, and has often resulted in landing prohibitions for listed species and poor or absent provision of data to CITES on any ongoing trade (with good data provision an ongoing implementation concern, as noted in the outcomes of the Animals and Standing committees shark discussions).

Including the vast majority of the shark fin trade under CITES Appendix II will aid the use of NDF tools, which are already developed and ready to use for any shark or ray species that is listed. By listing species at a stage where fisheries management tools can still be effective, as is the case for several species in the requiem shark family, effective uptake of these NDF tools will be far easier to facilitate (which will ensure sustainable trade/catch, prevent further declines, and ensure these species would not become eligible for inclusion in CITES Appendix I). Increasing examples of positive NDF's will also facilitate better relations between fisheries and environment departments in implementing CITES, and lead to far better provision of data on the overall trade in shark products.

c) <u>Why list more sharks on CITES?</u>

A wide range of scientific and political action, including these CITES listings, has significantly raised the profile of the declines in shark populations (Dulvy et al 2014 MacNeil et al 2020, Pacoureau et al 2021). There is a growing recognition that sharks can strongly benefit from fisheries management (Davidson et al 2015) but cannot be treated the same as other fish from a management perspective. A range of domestic and intergovernmental interventions have been developed to reflect their conservative biology, rapid declines and the need for precautionary management (Dulvy et al 2017 and 2021, MacNeil et al 2020).

Unfortunately, given the ongoing controversy around the listing of heavily traded shark species, CITES is failing to take timely, precautionary action to regulate the trade in all shark species that meet the intent of Appendix II, which states that it should address:

> *'all species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival'* (CITES Convention Text).

However, given the ongoing concerns by some CITES parties around the listing of marine species, Appendix II Listings to date have often been for Endangered and Critically Endangered

species, and in many cases have come too late to support sustainable catch and trade. Any fisheries or trade pressure is inappropriate for sharks once they are found to be Endangered or Critically Endangered, and again scientific consensus is clear that for such species immediate policy action should be taken to prohibit all take and commercial utilization (Pacoureau et al 2021, Dulvy et al 2021) – measures in line with CITES Appendix I, not CITES Appendix II listing criteria.

d) Policy change and data collection

A peer reviewed paper that is currently in review (Bond et al), and likely to be published ahead of the CoP, summarizes the impact of CITES shark and ray listings, and how they have shaped implementation since the listing of the first commercially traded species in 2013. Some of the papers key findings are summarized here, as they have relevance to the discussion of implementation and the potential for additional listings:

The CITES-shark listings have been found to have driven regulatory and policy changes by 39 Parties, with the potential to improve global shark management if implemented correctly. These policy changes have adopted a variety of formats including continued trade via NDFs (13 parties including Peru, Australia, Indonesia), species protections (31 Parties), and trade prohibitions for shark fins or all shark products (9 Parties, including India, Gabon, Colombia, Canada).

While the evidence provided here suggests that the CITES listings have been a great driver of policy change, across a broad geography, it is clear from the near dearth of examples, more is needed to translate such policy change into mortality reductions, which is the key challenge in the decade ahead. Indonesia's national manta moratorium, along with the trade bans (E.g., Canada) and catch prohibitions (E.g., Gabon) observed elsewhere, serve as examples of Parties going beyond just policy change to implement CITES and taken action required to effectively protect sharks and prevent trade driven extinctions.

Though the progress in global shark management as a result of the existing CITES measures is commendable, given the conservation crisis facing sharks and rays, it is far from sufficient at present. If we are to address overexploitation patterns and promote the future sustainability of shark fisheries, the issue requires greater political priority. One such step could be the regulation of the entire fin trade under CITES, with the view that such action would address lookalike issues, assist enforcement efforts (as all shark trade would require CITES permits), while giving greater political importance to properly regulating both catch and trade in all commercially exploited sharks.

In the CITES context, one non-marine example of a higher order listing that led to improved trade management is the crocodylians (Order Crocodylia). At the 1973 Plenipotentiary Conference (Washington DC) at which CITES was signed, a number of crocodylians were included in the initial proposals for Appendix I or II, which entered into force in 1975. Following the listing proposals at CoP1 (Bern, 1976), Switzerland proposed, and the Parties accepted, Family level listing of the Alligatoridae and Crocodylidae in Appendix II except those species

included in Appendix I – resulting in all recognized crocodylian taxa at that time appearing in at least Appendix II. Because of on-going debate about the higher-level systematics and taxonomy of crocodylians, as well as look-a-like issues with crocodylian skins and skin-based products, at CoP4 (1983, Gaborone) the Nomenclature Committee proposed to simplify the Appendix II listing by including the Order Crocodylia, with annotation including the Families Alligatoridae, Crocodylidae, and Gavialidae, instead of the Families individually (Doc. 4.16). This proposal was accepted by the Parties and entered into force in August 1983. Since then, several Parties have undertaken the burden of proof of non-detriment to downlist individual crocodylian species or specific national populations retained in Appendix I to Appendix II, allowing for trade to resume under certain conditions. Though there are clear biological differences between the Crocodylia and sharks and rays, notably those that facilitate ranching and farming of crocodylians, the Crocodylia is a successful example of a higher Order listing.

Following this model by listing all elasmobranchs on CITES Appendix II may lead to more immediate improvements in the management of the entire fin trade and reduced shark/ray mortality in the wild. It would also reduce enforcement and compliance issues currently confronting Parties, at least partially also due to the look-a-like issue among others and would also likely facilitate improved reporting. Further examples of where CITES Parties have taken a similar approach to listing broad-level taxa to best safeguard wild populations include seahorses (Family Syngnathidae) and parrots (Suborder Psittacidae).

4. <u>The blue shark</u>

Blue sharks are a lookalike for the four-lead species in terms of some of their fins in trade (e.g., lower caudal fin), and more importantly, their meat. Given the increasing scale of the global meat trade, with blue sharks one of the most commonly traded sharks, the species inclusion is an essential part of the proposal, as without it, small numbers of Critically Endangered species can easily be hidden in shipments predominated by lookalike blue shark meat (or fins); something already seen in Europe with the current shark listings (Villate-Moreno 2021).

Blue sharks are included as lookalikes, so their declines are not relevant to their inclusion in the proposal (only the identification of commonly traded products is).

However, they are likely the planets most caught and traded shark, are already assessed by the IUCN Red List as Near Threatened, and are only managed by one RFMO. They would be an excellent candidate for sustainable, traceable CITES Appendix II trade via the NDF process and unlike other sharks would be able to be traded at higher (sustainable!) volumes if listed now, before they inevitably become threatened with extinction (as per the intent of Appendix II).

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

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Nineteenth Meeting of the Conference of the Parties
(Panama City, 14th-25th November 2022)

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of the grey reef shark (*Carcharhinus amblyrhynchos),* dusky shark (*C. obscurus*), smalltail shark (*C. porosus),* and the Ganges shark (*Glyphis gangeticus*) in Appendix II in accordance with Article II paragraph 2(a) of the Convention and satisfying Criterion A and B in Annex 2a of Resolution Conf. 9.24 (Rev. CoP17).

Inclusion of all other species in the Family Carcharhinidae (Requiem sharks): Genus *Carcharhinus*, Genus *Isogomphodon*, Genus *Loxodon*, Genus *Nasolamia*, Genus *Lamiopsis*, Genus *Negaprion*, Genus *Prionace*, Genus *Rhizoprionodon*, Genus *Scoliodon*, Genus *Triaenodon* and any other putative species of Family Carcharhinidae in Appendix II in accordance with Article II paragraph 2(b) of the Convention and satisfying Criterion A in Annex 2b of Resolution Conf. 9.24 (Rev. CoP17).

Qualifying Criteria (Conf. 9.24 Rev. CoP17)

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

The grey reef shark (*C. amblyrhynchos),* the dusky shark (C. *obscurus*) the smalltail shark (*C. porosus*) and the Ganges shark (*G. gangeticus*) are all assessed as Endangered or Critically Endangered on the IUCN Red List of Threatened Species, as a result of unsustainable fishing mortality driven at least partly by international trade demand for their products.

Evidence of rapid recent declines of 70% or more in populations of the grey reef shark (*C. amblyrhynchos),* the dusky shark (C. *obscurus*), the smalltail shark (*C. porosus*), and the Ganges shark (*G. gangeticus*) are documented across much of their range. These low-productivity marine, estuarine, and freshwater species fulfil the CITES criteria for inclusion in Appendix II, and, in many locations approach, or exceed the threshold for inclusion in Appendix I (Rigby et al. 2019 and 2021, MacNeil et al. 2020, Pacoureau et al. 2021).

Given most of these species' large size, in many cases restricted range, and the high fishing pressure and lack of trade or catch management throughout their range (Quieroz et al. 2019), Appendix II listing is clearly justified now, before they reach the Appendix I listing criteria threshold.

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

Declines in the grey reef shark (*C. amblyrhynchos),* the dusky shark (*C. obscurus*), the smalltail shark (*C. porosus*) and the Ganges shark (*G. gangeticus*), due to unsustainable fishing pressure and the high value of dried shark fins in international trade, are reported throughout much of their range (Rigby et al. 2019, Simpfendorfer et al 2020, MacNeil et al 2020, Pacoureau et al 2021, Dulvy et al 2021). These species all occur in the global shark fin trade hubs in China (Hong Kong Special Administrative Region and Guangzhou; Fields et al 2018, Cardeñosa et al 2020), where even small percentages of the overall trade equate to tens, or hundreds of thousands of individual Critically Endangered or Endangered sharks entering the international fin trade every year.

With limited fisheries management measures in place across their known ranges, in the absence of international trade regulation, the value of their fins and meat will encourage continued targeted fisheries, or the retention of bycatch that could otherwise be released alive, and drive these species to extinction in the near future.

iii) Annex 2b, Criterion A: The specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2 (a), or in Appendix I, so that enforcement officers who encounter specimens of CITES-listed species are unlikely to be able to distinguish between them.

There is a close visual resemblance between the most commonly traded forms of the four threatened species proposed here for listing, primarily their fins (Clarke et al. 2006, Fields et al 2018) but also dressed carcasses (i.e., headless, finless trunks) and meat (FAO 2015), and the same products from many currently unlisted species in the family Carcharhinidae, along with already Appendix II listed members of the family, such as the silky shark (*C. falciformis*).

Several other species within Family Carcharhinidae have caudal and pectoral fins that are similar in appearance to those of currently listed species, such as scalloped and great hammerhead sharks (family Sphyrnidae). This further justifies the benefit of a family-level listing of requiem sharks (Family Carcharhinidae), to aid the enforcement of existing CITES listings.

Regional and global identification guides are available for whole bodies of the proposed species, and all other members of the family Carcharhinidae. These enable species or genus-specific identifications at the point of landing, which will aid implementation and enforcement of this listing. However, for traded products such as dressed carcasses, meat and fins, many of the proposed species are similar in appearance to those of other members of family Carcharhinidae. However, visual identification is possible at the family level, with the use of a fin identification guide (under development and summarized in Annex 1).

The international trade in shark fins continues to drive population declines of shark species globally, with recent studies finding that over 70% of species traded for their fins are already IUCN threatened (Cardenosa et al in press), twice the background level for all chondrichthyans. CITES must regulate this trade comprehensively now, before widescale Appendix I listings are needed.

At least 35 species in the family Carcharhinidae have been documented in the fin markets of Hong Kong, representing 46% of all species recorded in this market (Fields et al. 2018). The proportional contribution of carcharhinid species to the overall volume could be as high as 85.5%, as many of species traded in the highest volumes are in this family (Clarke et al. 2006, Fields et al. 2018, Cardeñosa et al. 2018a, Cardeñosa et al. 2020). Due to the complications of identifying products in trade within the family Carcharhinidae, and the large proportion of the fin trade that this family represents, it would be challenging for customs officials to separate a subset of listed Carcharhinidae species from unlisted species within the family in a timely and easy manner.

However, a listing at the family level would bring the majority of the shark fin trade under CITES Appendix II regulation, and given that 70% of the fin trade (Cardenosa et al in press) and over 68% of the family

Carcharhinidae is already considered threatened according to the IUCN Red List of Threatened Species Categories and Criteria (Dulvy et al 2021), such action is clearly justified if the intent of CITES Appendix II, to regulate the trade in species not yet threatened with extinction, is to be met.

This step would assist the implementation and enforcement of all shark listings at the customs and border control level, since almost every shipment of fins would contain CITES Appendix II species, and should be accompanied by the appropriate CITES permit or certificate. This would also limit the ability to hide small quantities of listed species among large quantities of unlisted fins, a common issue encountered in the implementation of current shark listings (Villate-Moreno 2021), with around 25% of the fin trade already being CITES Appendix II listed (Cardeñosa et al. 2018a).

Therefore, to facilitate the implementation of this, and existing CITES shark listings, all members of the family are included in this proposal, under criteria Annex 2b, Criterion A.

B. <u>Proponent</u>

Government of Panama

C. <u>Supporting statement</u>

1. Taxonomy

1.1 Class: *Chondrichthyes*

1.2 Order: Carcharhiniformes

1.3 Family: Carcharhinidae

1.4 Species: *Carcharhinus amblyrhynchos, Carcharhinus obscurus, Carcharhinus porosus, Glyphis gangeticus* (and all remaining species found within the family Carcharhinidae under Annex 2b, Criterion A, as detailed in section 9 of this proposal)

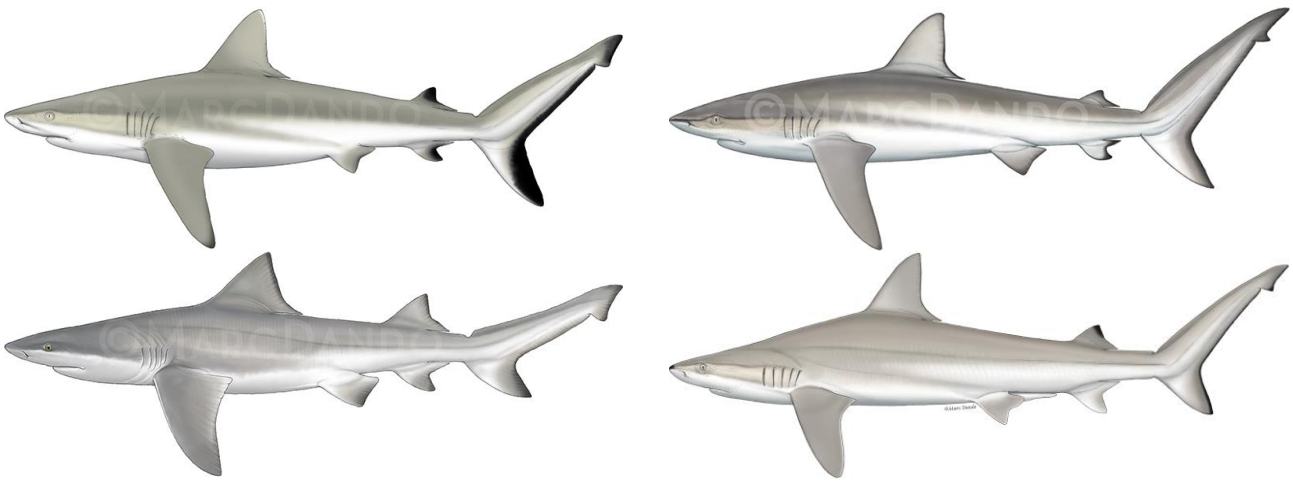
1.5 Scientific synonyms:

1.6 Common names:

English: Grey reef shark, dusky shark, smalltail shark, Ganges shark

1.7 Code Numbers: Not applicable.

Figure 1 - Grey reef shark (*C. amblyrhynchos) top left,* dusky shark (C. *obscurus*) top right, Ganges shark (*Glyphis gangeticus)* bottom left, smalltail shark (*C. porosus*), bottom right



2. Overview

Grey reef shark (*C. amblyrhynchos) summary:*

The grey reef shark (*Carcharhinus amblyrhynchos*) is a medium-sized coastal shark that occurs in coral reef habitats in tropical waters of the Indian and Pacific Oceans from the surface down to a depth of at least 280 meters. The species has relatively low biological productivity. *C. amblyrhynchos* is assessed as Endangered globally on the IUCN Red List of Threatened Species (Simpfendorfer et al. 2020).

The declines in the populations of reef associated sharks around the world are well represented by the grey reef shark (*C. amblyrhynchos).* Historically this species was thought to have been abundant on coral reef ecosystems throughout its Indo-Pacific range, but it has declined significantly due to overfishing. In the coming decades, these declines will be compounded by the impacts of climate change, thus extirpating a key predator from coral reefs, further impacting reef health.

A recent global survey highlighted the poor status of reef-associated sharks, including *C. amblyrhynchos*, finding widespread depletion of reef sharks across much of the world's tropical oceans (MacNeil et al. 2020). The key finding was the profound impact that fishing has had on reef shark populations: on almost 20% of reefs surveyed, no sharks were found at all, and they were almost completely absent from reefs (effectively functionally-extinct) in several countries, particularly in the Western Pacific and Indian Ocean regions. Grey reef sharks were not detected on reefs from 8/40 countries where they should occur based on historical range; in over half of the remaining countries they were rarely sighted. This indicates widespread declines, far exceeding the CITES listing threshold. Grey reef shark fins still occur in landings sites around the Indo-Pacific, are found in illegal seizures on high seas vessels, and are commonly sampled in random surveys of the Hong Kong SAR fin trade hub (Fields et al. 2018, Cardeñosa et al. 2018a, Bonaccorso et al 2021, Appleyard et al 2018).

Ganges shark (*Glyphis gangeticus) summary:*

The river sharks of the genus *Glyphis* are represented by three described species (the speartooth shark *Glyphis glyphis*, northern river shark *G. garricki*, and Ganges shark *G. gangeticus*). All are considered threatened and restricted to freshwater, estuarine and occasionally adjacent nearshore systems in Australasia and South and Southeast Asia. They are rare, poorly known and hard to accurately identify. Undescribed species may still exist, if they are not already extinct, in South and South East Asia.

The most widely distributed, the Ganges shark (*G. gangeticus*) is among the world's most threatened shark species, and is considered Critically Endangered on to the IUCN Red List due to high human pressures on its restricted habitat throughout its South Asian range (Rigby et al. 2021). Despite their rarity, river sharks are recorded as being processed for the fin trade at landing sites and have been detected in random surveys of the shark fin trade hub of Hong Kong SAR (White et al 2015, Fields et al. 2018, Cardeñosa et al. 2018a).

Continued trade, even in small quantities, is of high concern, given the species' low numbers, highly restricted ranges, poorly understood life history, and the high extinction risk to surviving unprotected populations.

Dusky shark (C. *obscurus*) summary:

The dusky shark (*Carcharhinus obscurus*) is a large (to 420 cm total length) coastal and pelagic shark with a patchy distribution in tropical and warm temperate seas from the surface down to depths of 500 m. The species has low biological productivity with late age-at-maturity and a long reproductive cycle. It is highly migratory and listed in Appendix II of the Convention on the Conservation of Migratory Species (CMS). Significant declines have been recorded throughout much of the species' range and it is assessed as

Endangered in the IUCN Red List of Threatened Species (Rigby et al. 2019). The species is still regularly found in the global shark fin trade (Fields et al. 2018, Cardeñosa et al. 2018a).

Smalltail shark (*C. porosus*) summary:

The smalltail shark (*Carcharhinus porosus*) is a small (<150 cm total length) Central and South American coastal requiem shark. It is heavily fished and in at least part of its range has declined by over 90% in ten years. It is assessed as Critically Endangered globally on the IUCN Red List of Threatened Species (Pollom et al. 2020). The species been detected in the most recent random surveys of the shark fin trade hub of Hong Kong SAR (Fields et al. 2018, Cardeñosa et al. 2018a).

Family level summary

The family Carcharhinidae forms the core of the global shark fin trade, with estimates from recent studies conducted in trade hubs indicating these species make up 46% of all the species recorded in trade (Fields et al. 2018, Cardeñosa et al. 2018a). Given the relative contribution of some of the species within the family to that trade, the family Carcharhinidae make up as much as 85.5% of fins found for sale in the world's largest shark fin retail markets (estimate determined via an index of relative species contribution to the trade, see Fields et al. 2018, Cardeñosa et al. 2018a, 2020 for details on this index).

As highlighted in this proposal to amend the Appendices, many species within the family are already Critically Endangered or Endangered, and meet, and in many cases greatly exceed the threshold for CITES Appendix II listing, several meeting the Appendix I listing criteria. Recent global analysis of shark populations found 37.5% of shark, ray, and chimaera species to be threatened with extinction, the second highest of all vertebrate lineages (Dulvy et al 2021). However, within the family Carcharhinidae the situation is far worse, with 68.4% of species considered threatened (Dulvy et al 2021 – supplementary information), one of the highest rates among all shark families. Given that this family forms the majority of the trade in shark fins and meat, this clearly makes the case for CITES Appendix II regulation, as the family is clearly already deeply impacted by unregulated international trade.

The global trade in shark fins, and increasingly other products such as meat, is highly reliant upon species in family Carcharhinidae. Most species in this family are caught in multi-species fisheries in which it is not possible to target one species over another and in most cases caught individuals are dead when the fishing gear is collected. Optimal conservation outcomes require management of the entire group, with regulations and limits based on the needs of the most threatened species caught. Under current management regimes, international trade will continue to drive fisheries for these ecologically important species, sequentially depleting species after species as each one declines and become harder to source. The precautionary solution is to bring most of the high value international fin trade under CITES regulation control now, as proposed here. This will secure their legal, sustainable, traceable and well-regulated use, with associated economic benefits, and allow depleted stocks to recover, thus averting the need for future Appendix I listings.

3. Species characteristics

3.1 Distribution

Grey reef shark (*C. amblyrhynchos*) – top left image (figure 1)
Tropical Indo-West and Central Pacific Oceans; some parts of the Eastern Tropical Pacific Ocean (Last and Stevens 2009, Simpfendorfer et al 2020, Ebert et al. 2021).

Ganges shark (*G. gangeticus*) – bottom right image (figure 1)

Relatively poorly known, patchy distributions in tropical rivers, estuaries and adjacent coastal waters in South Asia (Compagno, L.J.V. 2007, Ebert et al. 2021).

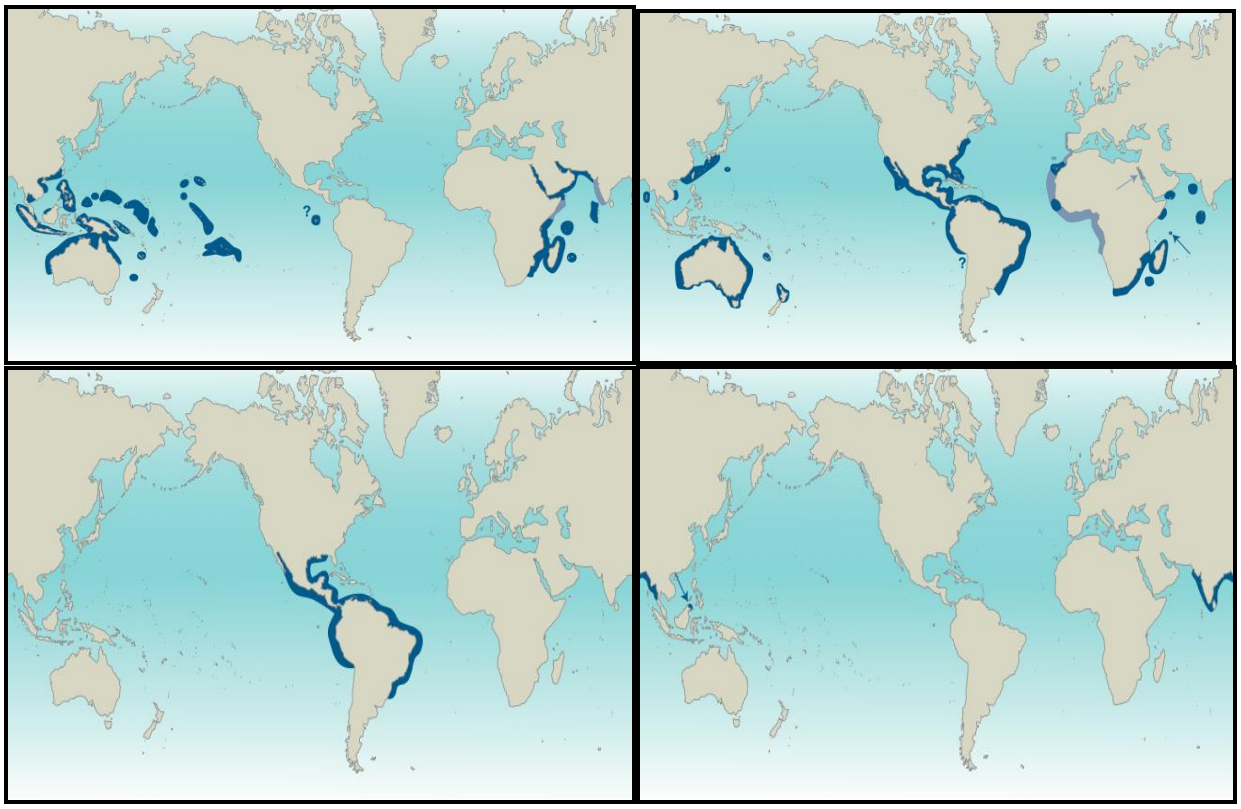
Dusky shark (*C. obscurus*) – top right image (figure 1)

Wide-ranging migratory species with a mainly coastal global distribution in tropical, sub-tropical and temperate oceans (Compagno 1984, Ebert et al. 2021).

Smalltail shark (*C. porosus*) – bottom left image (figure 1)

West Atlantic from the Gulf of Mexico and mainland Caribbean coast to southern Brazil, and central East Pacific (Ebert et al. 2021).

Figure 2 – range maps



3.2 Habitat

All species included in this proposal are members of the family Carcharhinidae (Requiem sharks). This is the dominant family of sharks in tropical continental shelf and offshore habitats, but some also occur in subtropical and warm temperate seas. Several requiem sharks prefer coral reefs and oceanic islands, while other species, including the Appendix II silky and oceanic whitetip sharks, range far into open ocean ecosystems.

The grey reef shark (*C. amblyrhynchos)* is found in clear tropical waters from the surface to depths of around 280 m (Last and Stevens 2009) and is common around coral reefs, particularly near drop-offs and fringing coral reefs. Its distribution is patchy in continental shelf waters (Simpfendorfer et al 2020)

Ganges shark (*G. gangeticus*) are restricted to turbid waters in large rivers, estuaries; also adjacent coastal areas during the monsoon, when salinity is reduced (Compagno, L.J.V. 2007).

The dusky shark (C. *obscurus*) is found on continental and insular shelves, from the shoreline to the outer reaches of the continental shelf and adjacent oceanic waters, at depths 0-500m where it is generally a mid-level to bottom feeder (Rigby et al 2019).

The smalltail shark (*C. porosus*) inhabits muddy inshore areas and estuaries down to a depth of 84 m (Ebert et al. 2021, Weigmann et al. 2016). The species is strongly associated with mangrove forests, which can be considered as essential habitat for the species on the basis of probability of occurrence and patterns of habitat use (Feitosa et al. 2020, Pollom et al 2020).

3.3 Biological characteristics

All species included in this proposal are members of the family Carcharhinidae (Requiem sharks), which currently includes 56 species. Most are viviparous with a yolk sac placenta; litters range in size from just one or two pups to (rarely) over 100. They are active, strong swimmers. Some species are 'ram-ventilators' needing to swim continually to oxygenate their gills, while others are capable of resting motionless for extended periods on the bottom. Many are more active at night, or dawn and dusk, than during the daytime. Some are solitary or socialize in small groups, and some are social schooling species.

Table 1 - Life history characteristics of proposed species

Species	Maximum size (total length TL)	Size of maturity (M - male/F - female)	Litter size	Frequency of reproduction/gestation period	Estimated three generation length	References
C. amblyrhynchos	265 cm	M - 130–145 cm TL, F 120–142 cm TL	1–6 pups	Biennial	43.5 years	Wetherbee et al. 1997, Ebert et al. 2021 Compagno 1984, Anderson and Ahmed 1993, Last and Stevens 2009, Simpfendorfer et al 2020
G. gangeticus	275 cm, possibly larger	M – 178 cm	Unknown	Unknown	Unknown	Ebert et al 2021, Compagno, L.J.V. 2007
C. *obscurus*	420 cm	M- 265–280 cm, F- 257–310 cm	7	Biennial, 18-24 month gestation	90-114 years, depending on region	Cortés 1998, Romine 2009, Hoffmayer 2014 Castro 2009, Compagno 1984, Ebert and Stehmann 2013
C. porosus	150 cm	M- 70cm TL, F- 71cm TL	2–7 pups	Biennial	27 years	Weigmann 2016, Lessa and Santana 1998, Pollom et al 2020

3.4 Morphological characteristics

See section 6.3 for details.

3.5 Role of the species in its ecosystem

Requiem sharks are, in lightly disturbed or well managed environments, the dominant group of tropical sharks, both in biodiversity and abundance (MacNeil et al. 2020). These are major predators, feeding on a wide range of prey, including bony fishes, elasmobranchs, cephalopods, crustaceans, and a wide range of other marine fauna including sea birds, turtles, sea snakes, marine mammals, benthic invertebrates, and marine carrion. Smaller species tend to specialise on a fairly narrow selection of prey, but larger species take a wider range of prey items (Ebert et al. 2021).

4. Status and trends

4.1 Habitat trends

See section 3.2 for habitat preferences; these species are all found predominantly in the inshore/coastal and riverine zones. For all species included in this proposal, particularly heavy fisheries mortality (targeted and bycatch) takes place virtually throughout their range, driving population declines globally.

4.2 Population size

Data are not available to determine the precise global population size of any species in the family Carcharhinidae. However, all species highlighted in this proposal are caught by artisanal and commercial fisheries, both as target species and as bycatch in trawl, net, and longline fisheries. Their high susceptibility to multiple fishing gear types, and geographic range along some of the world's most heavily fished coastal and riverine regions correlate with estimates of severe population decline, even when data are incomplete.

4.3 Population structure

Data are not available on population structure.

4.4 Population trends

Based on evidence of population reduction due to fisheries exploitation, habitat deterioration, conservative life history characteristics and demand for their fins in trade, all four species highlighted in this proposal have been assessed by experts as Endangered or Critically Endangered on the IUCN Red List, with extensive, continuing declines noted throughout much of their range, driven by a lack of appropriate catch and trade management.

4.4.1 - Population trends by region

<u>The grey reef shark (*C. amblyrhynchos)*</u>

In the **Pacific Ocean**, data from 15 locations found that grey reef shark populations far from human populations (Jarvis Reef, Phoenix Islands, Line Islands, Johnston Atoll, Wake Island, Northwest Hawaiian Islands and western and northern Mariana Islands) were likely close to their original population size, while those close to human populations (Main Hawaiian islands, American Samoa and southern Mariana Islands) were heavily depleted (<3% of carrying capacity) (Nadon et al. 2012, Simpfendorfer et al 2020)

The Global FinPrint project sampled in countries containing 88.6% of the coral reefs within the species' global historic range, creating the largest and most recent data set available to assess the status of this species. Reef-level depletion estimates were aggregated, weighted by jurisdictional coral reef area (relative to global coral reef area), to produce an estimate of global depletion. This research concluded that the grey reef shark has undergone a global population reduction of 59% in the last three generation lengths (44 years) and is classified on the IUCN Red List as **Endangered** (MacNeil et al 2020, Simpfendorfer et al 2020).

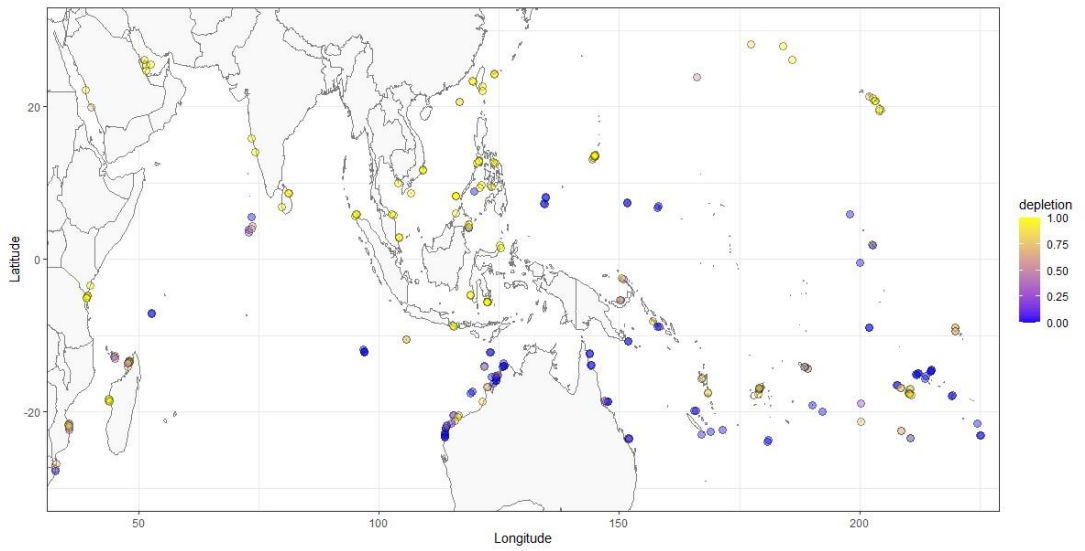


Figure 3. Estimated reef level depletion of grey reef sharks from Global Finprint data (IUCN Red List Assessment supplementary note, from Simpfendorfer et al 2020).

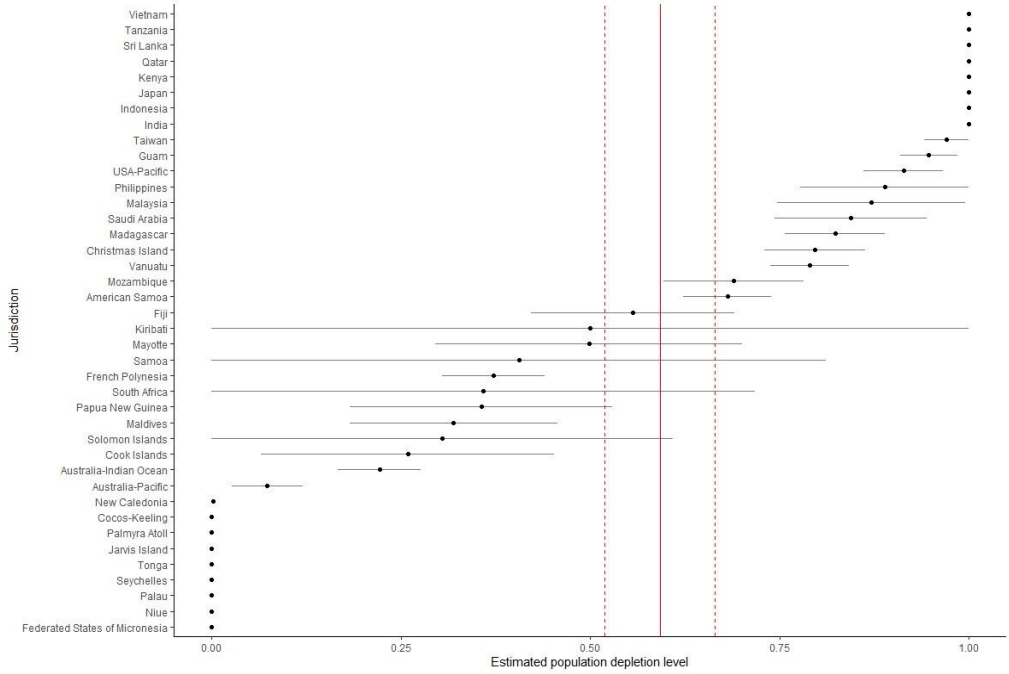


Figure 4. Estimated depletion of grey reef sharks by jurisdiction from Global FinPrint data. Error bars represent standard error. Red solid line indicates the global coral reef weighted depletion estimate (59% - Endangered), red dashed lines represent standard error, which also fall within the **Endangered** category (IUCN Red List assessment supplementary note, Simpfendorfer et al 2020).

As seen in Figure 4, in almost half of the countries sampled, the grey reef shark has declined by more than 60%, making its globally Endangered status a conservative estimate of declines. In locations in Vietnam, Tanzania, Sri Lanka, Qatar, Japan, Indonesia, India, Taiwan, Guam, the Philippines, Malaysia, Saudi Arabia and Vanuatu, the species is estimated to have declined by over 75 percent within three generations, satisfying IUCN Red List **Critically Endangered** status and CITES Appendix I listing criteria.

Ganges shark (*G. gangeticus*)

The Ganges shark is assessed as **Critically Endangered** on the IUCN Red List due to small population size and reduction exceeding 80% over three generations (Jabado et al 2017, Rigby et al 2021)

Records of the Ganges shark (*Glyphis gangeticus*) from its **South Asia** range in the northern Indian Ocean are sparse and the species is considered to be extremely rare, although its historical population size is unknown. Its known range extends from the Indus River outside Karachi, Pakistan, to Bangladesh and Myanmar. Its reliance on riverine and estuarine habitat makes it particularly susceptible to intensifying threats across its limited range from fishing, habitat degradation, increased river use, and dams and barrages which have altered flow, river productivity and migration pathways.

The species is possibly locally extinct in Pakistan, Myanmar, and Borneo with recent records only known from west and east India and Bangladesh. It is suspected that the Ganges Shark has undergone a population reduction of >80% over the past three generation lengths (54 years) due to levels of exploitation and given the rarity of contemporary records, it is estimated that the number of mature individuals of the Ganges Shark is very small (< 250) with an inferred continuing decline due to ongoing intensive and unmanaged fishing pressure and habitat degradation across its entire range (Rigby et al 2021).

The dusky shark (C. *obscurus)*

New research has identified 'an alarming, ongoing, worldwide decline in oceanic shark populations across the world's largest ecosystem over the past half-century'. This study, which found average declines of pelagic sharks globally of >70% since 1970, included dusky sharks as well as the previously-listed CITES Appendix II Carcharhinids: silky and oceanic whitetip sharks (Pacoureau et al 2021). The dusky shark is the only pelagic shark in an IUCN Red List threatened category (CR, EN, VU) not yet listed in CITES Appendix II.

In the Americas: a stock assessment in the Northwest Atlantic estimated that the dusky shark stock is overfished and overfishing has been occurring since the mid-1980s, with a prohibition on retention in the United States in 2000 that has reduced, but not ceased, overfishing (SEDAR 2016). The estimated population reduction over three generations (89.4 years) is 89.9%, qualifying for **Critically Endangered** in the region (Rigby et al 2019).

In **Southeast Asia and Oceania:** following serious historical stock depletion, the species now appears to be beginning to recover in Western Australia under sustainable fisheries management **(**Braccini and O'Malley 2018). The Eastern Indian Ocean CPUE trend for 1975–2015 (41 years) revealed annual rates of reduction of 3.8%, consistent with an estimated median reduction of 98.7% (i.e. to less than 2% of baseline) over three generation lengths (114 years), and the species qualifies for **Critically Endangered** in the region.

In Africa, the trend analysis of the Western Indian Ocean CPUE for 1978–2003 (26 years) revealed annual rates of reduction of 0.9%, consistent with an estimated median reduction of 60.9% over three generation lengths (114 years), and the species qualifies for **Endangered** in the region**.**

The **global** estimated median reduction was 75.8%, slightly below the highest probability of >80% reduction over three generation lengths (89.4–114 years), and the species is assessed as **Endangered** globally.

Region	GL (years)	Data length (years)	PA weighting	Median change	LC	NT	VU	EN	CR	Likely Status
N.W. Atlantic[1]	29.8	56	0.21	−89.9	0	0	0	0.9	99.1	CR
N.E. Atlantic	No trend data		0.13	–	–	–	–	–	–	–
S. Atlantic	No trend data		0.14	–	–	–	–	–	–	–
N. Pacific	No trend data		0.09	–	–	–	–	–	–	–
S. Pacific	No trend data		0.12	–	–	–	–	–	–	–
E. Indian[2]	38	41	0.11	−98.7	0	0	0	0.1	99.9	CR
W. Indian[3]	38	26	0.19	−60.9	25.6	4.1	11.6	32.1	26.6	EN
Global	–	–	–	**−75.8**	16.9	5.9	12.2	21.7	43.3	CR

Table 2 - Carcharhinus obscurus – Population change (%) and posterior probabilities for changes falling within the IUCN Red List categories (Rigby et al 2019).

The smalltail shark (*C. porosus*)

Due to documented declines in catches in several areas, combined with the level of unmanaged fishing pressure it is exposed to, it is suspected that the smalltail shark has undergone a population reduction of 50–79% over the past three generations (27 years), qualifying as **Endangered** in the West Central Atlantic.

In Northern Brazil, this species was the most commonly captured elasmobranch in shrimp trawl and gillnet fisheries targeting Acoupa Weakfish (*Cynoscion acoupa*) and Brazilian Spanish mackerel (*Scomberomorus brasiliensis*) off Amapá, Pará and Maranhão states at depths of 50–80 m (Pollom et al 2020). During the 1980s, it comprised up to 70% of the total catch weight in the artisanal gillnet fisheries. Catch rates declined from 2.87 kg per hour to 0.43 kg per hour in the 2000s, which is equivalent to a **population reduction of 85%** over the equivalent of three generation lengths (27 years) (Santana et al 2020). Demographic modelling suggests that fishing mortality far exceeded population growth rates and a population reduction of >90% over three generations, qualifying for **Critically Endangered** status for the core distribution of this species (Santana et al. 2020). In Maranhão State, it was the most common shark in the 1980s, but is now scarce, although it is still caught in landings in Raposa, Maranhão state (R. Lessa unpubl. data 2020), where it has undergone a 90% decline over the past 27 years (Santana 2020).

Due to the intense and largely unmanaged nature of fisheries in the region, the decreasing probability of catches, documented declines in some areas, and the relative lack of recent records in many parts of its range, combined with alarming declines in other elasmobranchs in the core of its range (northern South America), it is inferred that the smalltail shark has undergone a population reduction of >80% over the past three generations (27 years) and is considered **Critically Endangered** globally (Pollom et al 2020).

Table 3- Summary of declines by region:

Region	**Noted declines**
Global	Grey reef – **over 75%** in more than half of the countries surveyed (Simpfendorfer et al 2020, MacNeil et al 2020) Ganges shark – **near 100% depletion**, possibly extinct in several countries (Compagno, L.J.V. 2007, Rigby et al 2021) Dusky- **over 80%** (Rigby et al 2019) Smalltail- **50-90%** (Santana et al. 2020)
Southeast Asia - Oceania	Grey reef - **50–79%** in the last three generation lengths (MacNeil et al 2020) - **90%** plus in some locations (Nader 2012) Dusky – **98.7%** – with declines now halted and initial signs of recovery (Rigby et al 2019) Ganges shark (if present) – likely near extirpation (**approaching 100%** declines) Compagno, L.J.V. 2007)
Southern Asia/Gulf/Arabia	Grey reef - **50–79%** in the last three generation lengths (MacNeil et al 2020) Grey reef - **50-80%** with declines ongoing (Jabado et al 2017) Ganges shark – **Over 80%** (Jabado et al 2017, Rigby et al 2021) Dusky - **>80%** plus over the last 50 years (Rigby et al 2019)
Africa	Grey reef - **50–79%** in the last three generation lengths (MacNeil et al 2020) Dusky - **>80%** over three generation lengths (Pacoureau et al 2021)
Americas	Grey reef - **50–79%** in the last three generation lengths (MacNeil et al 2020) Dusky – **89%** in three generations (Rigby et al 2019, SEDAR 2016) **>70%** over the last 50 years in the Atlantic Ocean (Pacoureau et al 2021) Smalltail - **50–79%** in the Western Central Atlantic Smalltail **- 90%** over three generations in Northern South America (Santana et al. 2020)

4.5 Geographic trends

See 4. 4.1

5. Threats

All species are listed as Endangered or Critically Endangered on the IUCN Red List of Threatened Species, with the primary threat to these species taking the form of unsustainable and unregulated fisheries mortality throughout their range (see section 4.4 for additional detail).

All species are caught by artisanal and commercial fisheries both as a target species and as bycatch in demersal trawl, net, and longline fisheries – with retention incentivized due to the significant value of their fins in international trade. Their use of inshore and riverine habitats and susceptibility to multiple gear types makes them particularly vulnerable, which is compounded as their range includes some of the world's most heavily fished rivers and coastal regions (Dulvy et al. 2014, Jabado et al., 2017, Quieroz et al 2019).

Their dependence upon inshore and freshwater habitats adds additional significant threats, namely those of habitat loss and degradation, with the river systems in South Asia that support species such as the Ganges shark already deeply compromised by anthropogenic activity (Aggarwal et al 2020). The inshore habitats used by species in the family, such as coral reef ecosystems on which grey reef sharks act as key predators, are already suffering catastrophic reductions globally due to climate change (Hoegh-Guldberg 2017). This additional threat, compounded by this global overfishing only heightens the concern for these species' survival (MacNeil et al 2020).

6. Utilization and trade

The grey reef shark (*C. amblyrhynchos),* river sharks (Genus *Glyphis),* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) were all recorded in recent assessments of the global shark fin trade, during a study that has now been underway for seven years (Fields et al. 2018, Cardeñosa et al. 2018a and 2020, Cardenosa et al. in press). With the high value of shark fins in retail markets in East Asia, the global fin trade remains a key threat to shark and ray populations globally, where species aren't subject to formal catch or trade management, as is the case for these species in most locations globally (Dulvy et al 2021).

Grey reef sharks were encountered in 28.3% of sampling events in the Hong Kong SAR retail fin market from 2014-2018. The dusky shark accounted for 1.4% of the shark fin imported in Hong Kong SAR in 1999-2001, translating to hundreds of thousands of individuals per year (Clarke et al 2006). More recently, dusky sharks were encountered in 70.7% of sampling events in the retail market 2014-2018. Both the smalltail shark and river sharks are rarely sampled in the fin trade (Fields et al 2018, Cardeñosa et al 2018a and 2020), but due to their Critically Endangered status and limited geographical range, any unregulated trade in their products is of acute conservation concern.

Cardenosa et al. (in press) have reviewed the global distribution (number of FAO regions occupied) and IUCN status of shark species occurring in the dried shark fin trade in Hong Kong during 2014-2018 (methodology described by Fields et al. (2018) and Cardeñosa et al. (2018)). Table 3 is sourced from that work, and highlights species found in this analysis that are IUCN threatened and heavily traded, but non-CITES listed.

Species	Common Name
Carcharhinus acronotus	Blacknose shark
Carcharhinus albimarginatus	Silvertip shark
Carcharhinus altimus/plumbeus	Bignose/Sandbar shark
Carcharhinus amblyrhynchos	Grey reef shark

Carcharhinus amboinensis	Pigeye shark
Carcharhinus cf. dussumieri/dussumieri	Whitecheek shark
Carcharhinus obscurus/galapagensis	Dusky/Galapagos shark
Carcharhinus porosus	Smalltail shark
Glyphis spp.	River shark
Hemipristis elongata	Snaggletooth shark
Lamiopsis temminckii	Broadfin shark
Mustelus mustelus	Common smoothhound shark
Mustelus schmitti	Narrownose smooth-hound shark
Negaprion acutidens	Sicklefin lemon shark
Dalatias licha	Kitefin shark
Galeorhinus galeus	School shark

Table 4: Sixteen species combining threatened (Critically Endangered – CR; Endangered – EN; or Vulnerable – VU) and Data Deficient status that were commonly encountered in Hong Kong fin market surveys 2014-2018 (~1-15% incidence in sampling events). Lead species in this proposal are all included in this analysis and highlighted (yellow) for reference, with wider species in the family, included in the proposal as look-alikes also highlighted (beige).

This analysis reveals 16 species/species groups that combine threatened IUCN Red List status and common incidence (> ~ 1% of sampling events) in the dried fin trade. All but four of these species also exhibit restricted geographic range (occupying < 7 FAO regions), which implies they have much a smaller global population than some of the more common species in trade. This may cause them to be even less likely to sustain exploitation and suggests that there are fewer geographic refuges for these species. Eleven of these species/groups (69%) are members of family Carcharhinidae. The conclusion of this study is a recommendation that Parties consider the CITES Appendix II listing of river sharks (Genus *Glyphis),* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*), along with many other costal species within the family Carcharhinidae, as such action is needed to properly manage the shark fin trade (Cardenosa et al in press).

The shark meat trade is also increasingly recognized to be a contributory threat to many shark and ray species (FAO 2015), although there are limited data on the species composition of the meat trade. Given the utilization of the fins of grey reef shark (*C. amblyrhynchos),* river sharks (genus *Glyphis),* dusky shark (C. *obscurus*) and smalltail shark (*C. porosus*), and the retention of carcasses for their meat (Rigby et al 2019, Simpfendorfer et al 2020), these species' meat, as well as oil, skins, jaws and other secondary products are likely being utilized (albeit mostly in domestic markets). A recent study noted that global shark catches are dominated by members of the family Carcharhinidae, with the blue shark alone making up 16% of global shark landings in 2017, with the study noting that the blue shark may now be dominating the meat trade via international commerce to meat markets in Japan, Spain, Taiwan PoC, and Uruguay (Okes, N. and Sant, G. 2019).

In summary, it is clear that when the grey reef shark (*C. amblyrhynchos),* river sharks (Genus *Glyphis),* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) are targeted in fisheries, or retained when incidentally caught, their products, particularly fins, enter international trade (Fields et al 2018). Given the comparatively high value of the shark fin trade, and the growing threat of the meat trade (FAO 2015), it is clear that this trade continues to drive both illegal and poorly regulated fisheries and therefore drives declines in these species' and wider members of the Family Carcharhinidae populations throughout much of their range (Davidson et al 2016).

6.1 National utilization:

The grey reef shark (*C amblyrhynchos),* river sharks (*Glyphis* spp.)*,* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) form important, but decreasing, components of mixed inshore, and occasionally offshore (particularly for the dusky shark) fisheries throughout their range (Rigby et al 2019, Simpfendorfer et al 2020, Jabado et al., 2017, McNeil et al 2020, Pacoureau et al 2021). Key products produced from this catch includes fins (usually for export) and meat, oil and skins that are used domestically, but are also, for some species likely to be exported to key shark meat consuming countries (Rigby et al 2019, Simpfendorfer et al 2020, FAO 2015).

The requirement to issue CITES Non-Detriment Findings (NDFs) encourages Parties to assess and improve the sustainability of all sources of fisheries mortality for listed species; therefore, a CITES Appendix II listing for these species will also facilitate sustainable domestic use.

For species such as the grey reef shark (*C. amblyrhynchos*), dive tourism revenue can outweigh the value found in fisheries. With the species of particular significance to dive and snorkel tourism globally, studies have shown the huge economic value of healthy populations of reef associated sharks. For example, shark diving is a major contributor to the economy of Palau, generating US$18 million per year and accounting for approximately 8% of the gross domestic product of the country (Vianna et al 2012). This is common in many small island, dive tourism-focused countries, which are often those where such sustainable, long term high value industries are badly needed for local livelihoods (and far outweighs any benefits from commercial trade). It offers another strong rationale for precautionary management of any extractive use (such as sale and trade) for these species, to safeguard their use as a source of tourism revenue in the long term.

6.2 Legal trade

Products enter trade legally, unless taken in contravention of national legislation or regional fisheries management measures (see sections 6.4 and 7) and enforced accordingly.

6.3 Parts and derivatives in trade

a) <u>Identification at the point of landing to aid traceability:</u>

At the point of landing, all species within the family Carcharhinidae can be identified to a species level, allowing for species specific management and monitoring, and the issuance of CITES permits before products enter international trade (with the appropriate non-detriment and legal acquisition findings). This will allow for the effective implementation of this listing proposal. Multiple regional guides for members of this family are already available (FAO elasmobranch field identification guide series and WCS CITES species full carcass ID guide (Jabado & Abercrombie 2021)).

b) Identification at the point of trade – fin ID:

As per the introduction to section 6, the fin trade is the major trade based threat to the grey reef shark (*C amblyrhynchos),* river sharks (*Glyphis* spp.)*,* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) along with the wider family (Carcharhinidae). Identifying traded fins visually is important to allow for effective implementation of the proposal in all capacity settings, as seen with the effective implementation of CITES shark listings at the customs level since regularly commercially traded species were first listed on CITES Appendix II in 2013 (Cardenosa et al 2020).

At the first point of trade, all the lead species included in this listing proposal can be visually identified to the family (Carcharhinidae) level using their unprocessed dorsal fins (and pectoral fins for some species), as per the techniques used in existing CITES shark ID guides:
https://static1.squarespace.com/static/5be1cec125bf028361db95dc/t/5f34579e0d86192a0f01a02e/1597265832828/2018_PEW_SharkFinGuide_English_09-2018_r2_WEB.pdf

However, depending on the type of product, identification is not always possible to the species level, with multiple look-alike species within the wider family Carcharhinidae (Ebert et al. 2021, Jabado 2021, personal communication). This necessitates the family level approach of this listing proposal.

Overall, at the point of landing visual identification is possible to species level, aiding traceability and facilitating continued CITES-regulated trade. At the point of trade, visual identification is possible in a manner that allows for implementation of this listing in all capacity settings to the family level, allowing customs officials to easily hold shipments without the proper CITES permits, but necessitating a family level listing. Full details of the visual identification of fins from the family Carcharhinidae, showing the close similarity of many species fins, and the techniques for identification using dorsal and pectoral fins to the family level is included in Annex 1 to this proposal.

Additionally, a specific visual identification guide using the same techniques as existing CITES shark fin ID guides is in development to accompany this proposal, and support its implementation. This guide will be annexed to this proposal when complete, ahead of CoP 19.

Some species within the family can be identified to the species level by their fins, notably the oceanic whitetip, silky and blue shark. Those species would not be lookalikes from the perspective of visual fin ID, but, for those that aren't currently listed on CITES Appendix II, they are lookalikes when the trade in other products, such as meat, or processed fins is considered.

c) Identification at the point of trade – meat and carcass ID

As noted in the introduction to section 6, the lead species in this proposal are not major components of the shark meat trade. However, other members of the family Carcharhinidae are, with blue sharks and members of the Rhinozprionodon genus likely the most traded shark species for their meat. Identification of meat and carcasses (along with processed fins) is more challenging than for unprocessed fins, and depending on the carcass processing isn't possible to the species level. However the meat trade is predominated by fewer countries than the fin trade, and most countries that reportedly trade meat in significant quantities have a higher capacity to implement CITES listings, such as Japan, Spain, Taiwan PoC, and Uruguay (Okes, N. and Sant, G. 2019).

Genetic ID would be needed to identify traded meat in those higher capacity countries that trade large quantities of meat, and that is simplest when conducted to the family level. This gives further justification to a family level listing approach, to allow for the simplest testing regime for traded meat products, and to prevent small quantities of meat from the grey reef shark (*C amblyrhynchos),* river sharks (*Glyphis* spp.)*,* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) being concealed within shipments of other members of the family Carcharhinidae that are more heavily traded for their meat.

There is a robust publicly available database of cytochrome oxidase I sequences that allows lab-based genetic identification of products from all sharks in the family Carcharhinidae (Wong et al. 2009). There are research laboratories all over the world conducting DNA barcoding studies of these species that could be engaged to identify products for CITES enforcement applications (Sembiring et al 2015, Almeron-Souza et al 2018, among many others). Hong Kong SAR and some other countries and territories are currently using real time PCR to detect and prosecute illegal trade in CITES-listed sharks (Cardenosa et al. 2018b). The technology used is low cost (USD$1 per sample), fast (15-94 samples processed in 3.5 hours) and easily implemented in port settings (Cardenosa et al. 2018b) with efforts now underway in Spain, Indonesia, Belize, Peru, Guatemala and Colombia to implement it.

A test for the family Carcharhinidae could be developed if this proposal were adopted, and there are emerging real time PCR methods that are applied to bony fish that initial testing also shows works for sharks and could be also used to identify any shark product to the species level in the field (Naaum et al. 2021).

Additional information on species ID and lookalike species is included in Annex 1.

6.4 Illegal trade

The grey reef shark (*C. amblyrhynchos),* river sharks (*Glyphis* spp.*),* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) are subject to limited management globally, and with their inshore range are subject to the national laws of countries throughout their range, rather than those of regional fisheries bodies and agreements. It is assumed that the vast majority of international trade in their fins and other products is legal, but from widely unregulated fisheries. While shark finning is banned in most fisheries with many requiring landings of animals with fins attached, it still occurs and these species could be illegally finned due to the high value of their fins when traded internationally, and the comparatively low value of their meat.

See section 7 for details on countries that are thought to have management measures in place for these species.

A recent analysis of the implementation of existing CITES shark and ray listings reveals compliance issue due to similarity of appearance of shark products in trade, compounded by large shipments of mixed CITES and non-CITES listed species (Villate-Moreno 2021). All unlisted species found in the shipment analysed in this study, and misidentified as potentially CITES listed belong to the family Carcharhinidae. Listing the entire family as per this listing proposal, would remove this issue of mixed shipments and misidentification, as with the vast majority of the shark fin trade consisting of CITES listed species, almost all legal shipments of shark fins would need to be accompanied by CITES paperwork. Those shipments without paperwork would almost certainly contain CITES-listed species. Coupled to the ability to visually identify Carcharhinidae fins to the family level, this would make the basic steps of inspection and confiscation far simpler and more efficient for customs staff, especially in locations where genetic tools, or wider customs capacity are lacking or limited.

6.5 Actual or potential trade impacts

While overfishing is the major threat to sharks and rays globally (Pacoureau et al 2021), the demand from international shark fin markets is a major driving economic force behind the unsustainable mortality of these species (Fields et al 2018), driving that overfishing. Regulation of the fin trade through an Appendix II listing of these species is necessary to ensure that the trade is sustainable, and does not drive them to extinction, helping facilitate national level sustainable management and conservation.

7. Legal instruments

7.1 National

Few legal instruments exist that specifically apply to the grey reef shark (*C. amblyrhynchos),* the Ganges shark (*Glyphis gangeticus*)*,* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*), although where species or family specific measures are known, they are listed in section 8.1. They are often managed as part of mixed inshore fisheries, with limited or no species-specific controls to limit overexploitation (see sections 4 and 5 for detail).

7.2 International

The mainly coastal distribution of the grey reef shark (*C. amblyrhynchos),* river sharks (*Glyphis* spp.*),* the dusky shark (C. *obscurus*) and the smalltail shark (*C. porosus*) limits the application of high seas Regional Fisheries Management Organizations (RFMO) regulations, and none of these species has been prioritized for conservation action in other Regional Fisheries Bodies (RFB's).

In 2017, the 124 Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS) listed the dusky shark (C. *obscurus*) on Appendix II of the Convention, thereby recognizing this species in need of collaborative, international conservation action. No collaborative action has yet been taken outside of the subsequent listing on the CMS Shark Memorandum of Understanding (MoU); however, listing the species on CITES Appendix II would represent a strong commitment to co-operative, global action by those CITES Parties that are also signatories to CMS.

8. Species management

8.1 Management measures

The 15 countries that have declared their waters shark sanctuaries (no retention or sale of sharks), that amount to 3% of the world's oceans (Ward Paige 2017) protection should be in place for any of these species found in their waters. Of the species included in this proposal, this is likely to hold the greatest benefit for the grey reef shark (*C. amblyrhynchos),* as the majority of these shark sanctuary countries are small island states with high levels of coral reef habitat and a recent global survey found reef sharks were abundant in sanctuary nations (MacNeil et al. 2020). However, few additional countries with significant coral reef habitat have offered any protections or management to sharks more generally, or gray reef shark specifically.

Australia and the United States (US) have implemented fishery management measures aimed specifically at reducing dusky shark mortality, and US commercial and recreational fishers are prohibited from retaining the species. South Africa has imposed a recreational bag limit for dusky sharks. Outside of these countries, however, there is no evidence of specific management of the dusky shark, despite its vulnerability and extensive global range (Rigby et al 2019, CMS dusky shark listing proposal 2017).

There are no species-specific protections or conservation measures in place in the Western Central Atlantic range of the smalltail shark, although some wider fisheries management measures may offer the species limited management and protection (Pollom et al 2020).

In India, the Ganges Shark is one of 10 species of chondrichthyans protected under Schedule I, Part II A of the Indian Wildlife (Protection) Act, 1972 (Government of India Ministry of Environment and Forests 2006). However, the effectiveness of this measure is unknown, with ongoing issues in enforcement and compliance. In Bangladesh, the Ganges Shark has been protected since 2012 under Schedule I of the Wildlife (Conservation and Security) Act, 2012, however the effectiveness of this measure is limited due to a general lack of awareness of the protection among fishers and traders. To conserve the population and to permit recovery, a suite of measures will be required which may include species protection, spatial management, bycatch mitigation, and harvest and trade management measures (including international trade measures) (Rigby et al 2021).

Outside of this limited range of management measures, it is assumed that the grey reef shark (*C. amblyrhynchos),* river sharks (Genus *Glyphis),* the dusky shark (*C. obscurus*) and the smalltail shark (*C. porosus*) are largely unmanaged throughout their range. Even when protected by the measures noted here, or measures not publically available, trade could be continuing without inspection or enforcement, due to a lack of complementary trade management, monitoring and enforcement that a CITES Appendix II listing can offer.

8.2 Population monitoring

Outside of the US and Australia, there are no formal programs dedicated specifically to monitoring any of these species' populations. In addition, the lack of species-specific catch and effort data and the difficulties in species identification and clear nomenclature have resulted in difficulties in monitoring the population status to a species level. The management priority that a CITES Appendix II listing will provide will help prioritize data collection for these species.

9. Information on similar species

As noted throughout the proposal, particularly in sections 4 and 6, a listing at the family level (Carcharhinidae) is needed, due to identification issues within the family, and fully in line with Article II.2.(b) of the CITES treaty.

The full list of species contained in the proposal is found in Annex 1.

10. Consultations
11. Additional Remarks
12. References

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Annex 1- full species list and visual ID guidance

The unlisted members of the family Carcharhinidae, included in this proposal in accordance with Article II paragraph 2(a) of the Convention and satisfying Criterion A and B in Annex 2a of Resolution Conf. 9.24 (Rev. CoP17), along with Annex 2b, Criterion A of Resolution Conf. 9.24 (Rev. CoP17) are detailed as follows:

1. **BLACKNOSE SHARK** *Carcharhinus acronotus*
2. **BIGNOSE SHARK** *Carcharhinus altimus*
3. **SILVERTIP SHARK** *Carcharhinus albimarginatus*
4. **GREY REEF SHARK** *Carcharhinus amblyrhynchos*
5. **GRACEFUL SHARK** *Carcharhinus amblyrhynchoides*
6. **PIGEYE SHARK** *Carcharhinus amboinensis*
7. **BORNEO SHARK** *Carcharhinus borneensis*
8. **NERVOUS SHARK** *Carcharhinus cautus*
9. **BRONZE WHALER** *Carcharhinus brachyurus*
10. **SPINNER SHARK** *Carcharhinus brevipinna*
11. **PACIFIC SMALLTAIL SHARK** *Carcharhinus cerdale*
12. **COATES'S SHARK** *Carcharhinus coatesi*
13. **WHITECHEEK SHARK** *Carcharhinus dussumieri*
14. **CREEK WHALER** *Carcharhinus fitzroyensis*
15. **GALAPAGOS SHARK** *Carcharhinus galapagensis*
16. **PONDICHERRY SHARK** *Carcharhinus hemiodon*
17. **HUMAN'S WHALER SHARK** *Carcharhinus humani*
18. **FINETOOTH SHARK** *Carcharhinus isodon*
19. **SMOOTHTOOTH BLACKTIP SHARK** *Carcharhinus leiodon*
20. **BULL SHARK** *Carcharhinus leucas*
21. **BLACKTIP SHARK** *Carcharhinus limbatus*
22. **HARDNOSE SHARK** *Carcharhinus macloti*
23. **SMALLTAIL SHARK** *Carcharhinus porosus*
24. **BLACKTIP REEF SHARK** *Carcharhinus melanopterus*

25. **LOST SHARK** *Carcharhinus obsoletus*
26. **DUSKY SHARK** *Carcharhinus obscurus*
27. **CARIBBEAN REEF SHARK** *Carcharhinus perezi*
28. **SANDBAR SHARK** *Carcharhinus plumbeus*
29. **NIGHT SHARK** *Carcharhinus signatus*
30. **BLACKSPOT SHARK** *Carcharhinus sealei*
31. **SPOTTAIL SHARK** *Carcharhinus sorrah*
32. **AUSTRALIAN BLACKTIP SHARK** *Carcharhinus tilstoni*
33. **INDONESIAN WHALER SHARK** *Carcharhinus tjutjot*

34. **GANGES SHARK** *Glyphis gangeticus*
35. **NEW GUINEA RIVER SHARK** *Glyphis garricki*
36. **SPEARTOOTH SHARK** *Glyphis glyphis*

37. **DAGGERNOSE SHARK** *Isogomphodon oxyrhynchus*

38. **BROADFIN SHARK** *Lamiopsis temmincki*
39. **BORNEO BROADFIN SHARK** *Lamiopsis tephrodes*

40. **SLITEYE SHARK** *Loxodon macrorhinus*

41. **WHITENOSE SHARK** *Nasolamia velox*

42. **SICKLEFIN LEMON SHARK** *Negaprion acutidens*
43. **LEMON SHARK** *Negaprion brevirostris*

44. **BLUE SHARK** *Prionace glauca*

45. **MILK SHARK** *Rhizoprionodon acutus*
46. **BRAZILIAN SHARPNOSE SHARK** *Rhizoprionodon lalandii*
47. **PACIFIC SHARPNOSE SHARK** *Rhizoprionodon longurio*
48. **GREY SHARPNOSE SHARK** *Rhizoprionodon oligolinx*
49. **CARIBBEAN SHARPNOSE SHARK** *Rhizoprionodon porosus*
50. **AUSTRALIAN SHARPNOSE SHARK** *Rhizoprionodon taylori*
51. **ATLANTIC SHARPNOSE SHARK** *Rhizoprionodon terraenovae*

52. **SPADENOSE SHARK** *Scoliodon laticaudus*
53. **PACIFIC SPADENOSE SHARK** *Scoliodon macrorhynchos*

54. **WHITETIP REEF SHARK** *Triaenodon obesus*

A visual ID guide for the family will be produced ahead of CoP19, that can be used to identify all species in the family to a species level at point of landing, and identify dorsal fins to a family level at point of trade, and will be included in this proposal as Annex 2. Specific fin identification cues for each lead species are detailed below, but show that for many products there is confusion within the family, so necessitating a family level listing approach to aid implementation.

Cues for the identification of traded products from the four focal species in the proposal:

1. Grey reef shark

a. First dorsal fin

This fin can be confused with a range of other carcharhinids that have plain/non-colored and short dorsal fins

b. Pectoral fins

Fins with prominent black markings – this could be confused with a range of other carcharhinids, especially from the blacktip complex

c. Caudal fin

Very distinct from other shark species – has a dark black/grey line that comes down along the caudal fin. No other shark species has this so is easy to identify and unlikely to be mistaken for another species.

d. Trunk

If all fins except the dorsal and caudal fin are retained, then it is possible to ID to a species level.

e. Meat

The meat in any form (filet, chilled, frozen etc.) cannot be distinguished from other carcharhinids in trade.

2. Glyphis

a. First dorsal fin

The base is very broad and these would be distinct – but could also be confused with other smaller carcharhinid species if they are mixed together in a bag.

b. Pectoral fins

Quite distinct due to width – very different from most carcharhinids but could be confused with others within the family, such as Lamniopsis, depending on the size of the animal.

c. Caudal fin

Characteristic of all carcharhinids with a subterminal notch on the upper caudal fin. Would be easy to confuse with other CITES listed species within the family, such as silky sharks.

d. Trunk

Could be confused with other species within the family such as the bull shark or the pigeye shark.

e. Meat

The meat in any form (filet, chilled, frozen etc.) cannot be distinguished from other carcharhinids in trade.

3. Smalltail shark

a. First dorsal fin

Not able to tell it apart from many of the other small carcharhinids.

b. Pectoral fins

These have no markings like most of the other small carcharhinids creating look-alike issues within the family.

c. Caudal fin

Characteristic of all carcharhinids with a subterminal notch on the upper caudal fin. Would be easy to confuse with other carcharhinids, especially the black tip complex species.

d. Trunk

If all fins except the dorsal and caudal fin are retained, then it is possible to ID but only to a family level.

e. Meat

The meat in any form (filet, chilled, frozen etc.) cannot be distinguished from other carcharhinids in trade.

4. Dusky shark

a. First dorsal fin

Challenging to differentiate from other carcharhinids.

b. Pectoral fins

Fins with black markings – could be confused with a range of other carcharhinids, especially from the blacktip complex

c. Caudal fin

Characteristic of all carcharhinids with a subterminal notch on the upper caudal fin. Would be easy to confuse with other CITES Appendix II listed species within the family, such as the silky shark.

d. Trunk

If all fins except the dorsal, pectorals, caudal fin are retained, then it is possible to ID but only to a genus level.

e. Meat

The meat in any form (filet, chilled, frozen etc.) cannot be distinguished from other carcharhinids in trade.

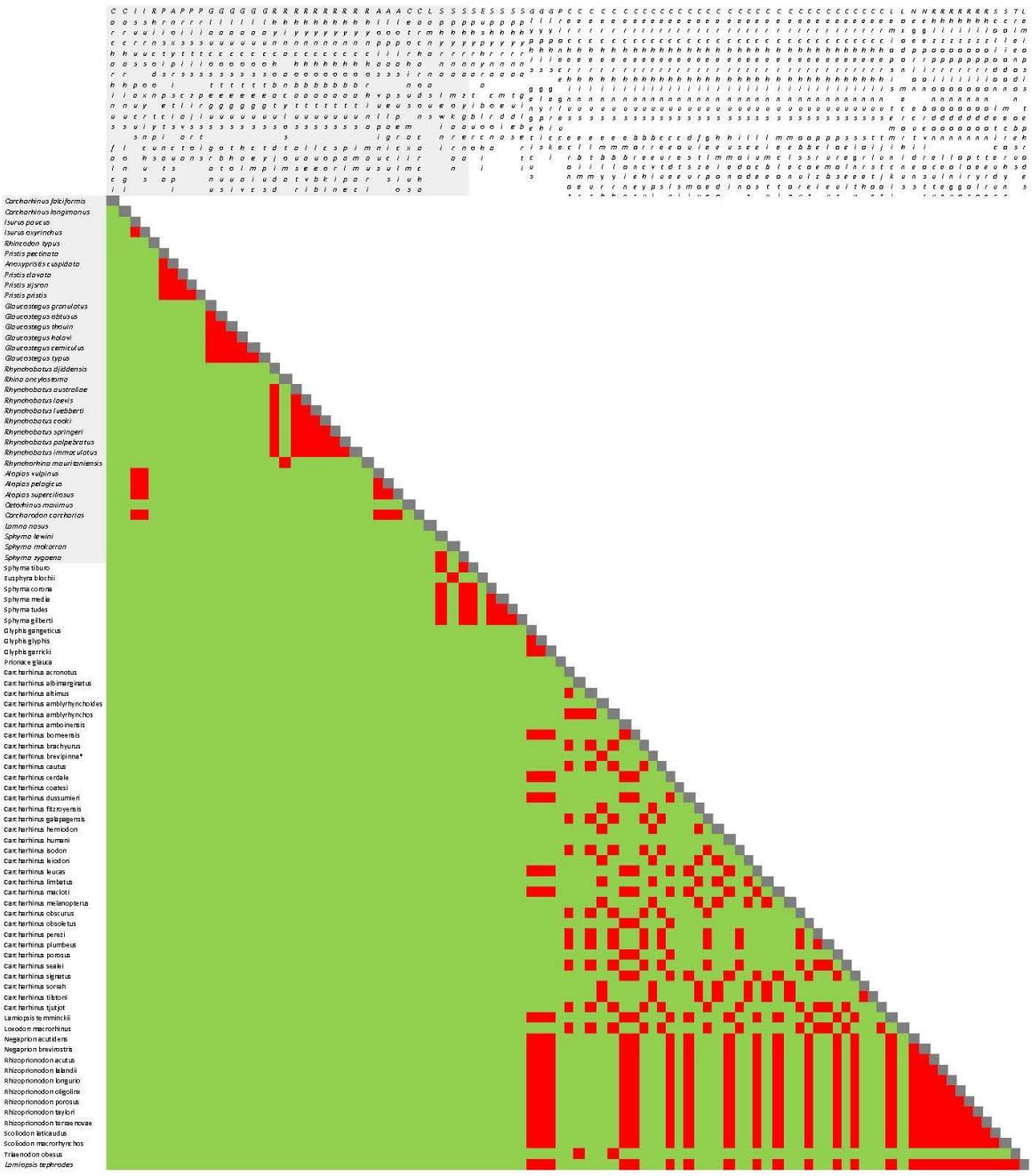
The following matrices (tables 5, 6, 7, and 8) compare the ability to identify fins and meat from all known requiem shark species and all currently CITES listed sharks in additional detail. The green indicates where it is possible to visually distinguish between the fins of species (see table 5 for dorsal, table 6 for pectoral, table 7 for caudal and table 8 for meat). The left-hand side columns are predominantly green, showing that it is easy to distinguish between currently CITES listed species and unlisted species from the requiem family for most fin positions. The red sections on the right-hand side indicate that it is not possible to distinguish between the fins and meat of many (currently unlisted) requiem shark species.

With this wide range of lookalikes, and given that shark fins are typically traded in mixed shipments containing a range of species, a family level listing is by far the most resource-efficient way to regulate this trade. If a subset of species within the family were listed, customs level enforcement would be incredibly time consuming due to the numerous lookalikes identified in the matrices.

This proposal, at the family level, would incorporate up to 85.5% of the fin trade on Appendix II, and therefore most shipments of shark fins would contain CITES listed species and require the associated paperwork. Such an approach has multiple benefits for data collection and traceability of the overall trade, in addition to preventing further overexploitation driven by the international trade. With visual ID possible to the requiem shark family level, this listing could be implemented in the manner of current CITES shark listings, with visual ID guides and customs trainings used to enforce listings in all capacity settings.

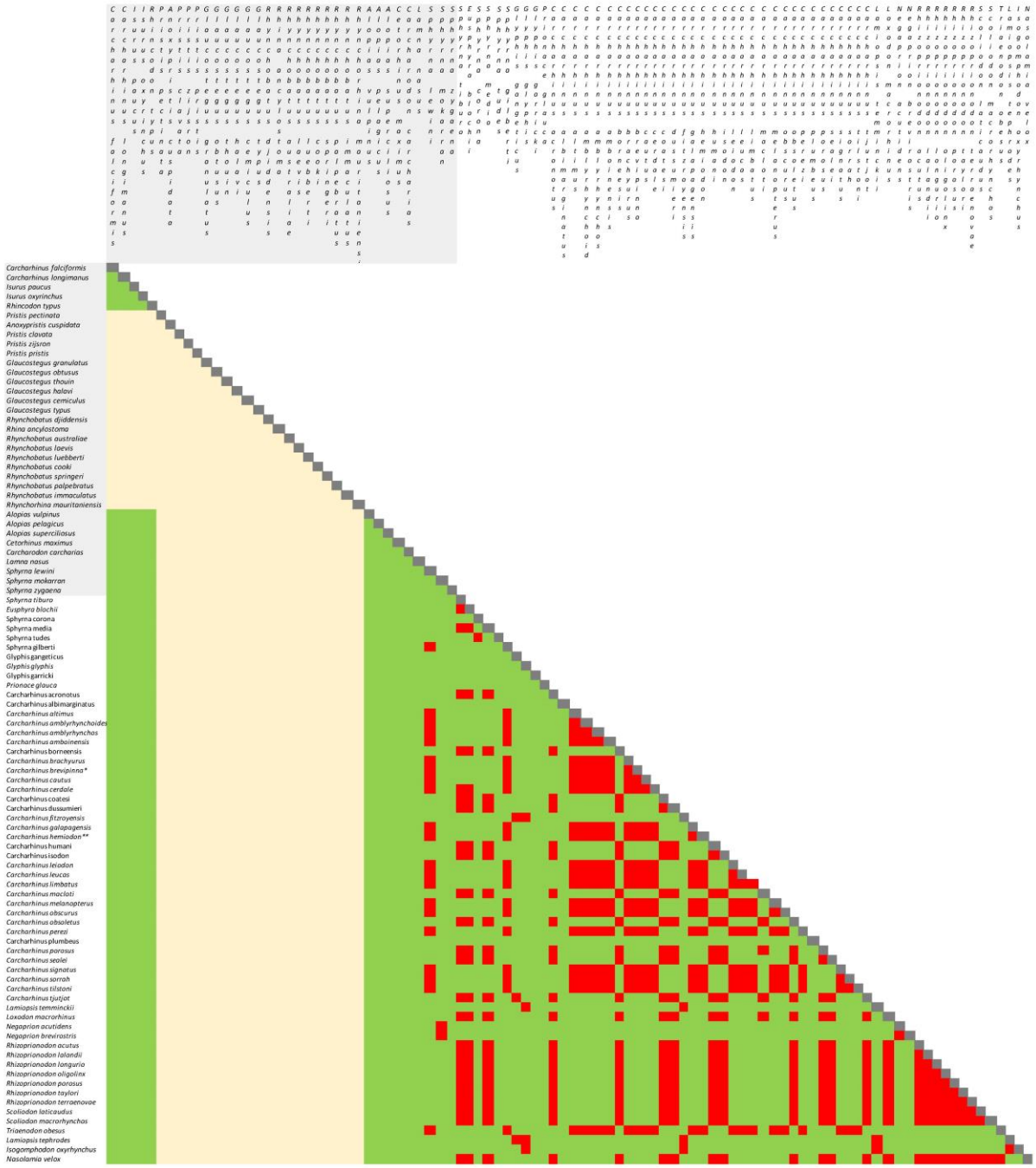
Tables 5-8 - identification analysis matrices:

Table 5 – dorsal fin lookalikes:



Note- A few Carcharhinidae have unique D1 characteristics (e.g. C. falciformis, C. longimanus, P. glauca). Most have one or more lookalikes. D1 fins were therefore grouped:
Group 1: Tall fins with indistinct markings (e.g., C. obscurus, Pacific C. amblyrhynchos)
Group 2: Tall fins with distinct black apical markings (e.g. C. brevipinna, C.limbatus)
Group 3: Tall fins with distinct white apical markings (e.g., Indian C. amblyrhynchos, C. albimarginatus)
Group 4: Broad fins with indistinct markings (e.g. C. porosus, Glyphis spp.)

Table 6 – pectoral fin lookalikes:



Notes:

Not applicable - rhinopristid pectoral fins are different to sharks, not comparable, and do not enter the trade (unless as meat fillets)

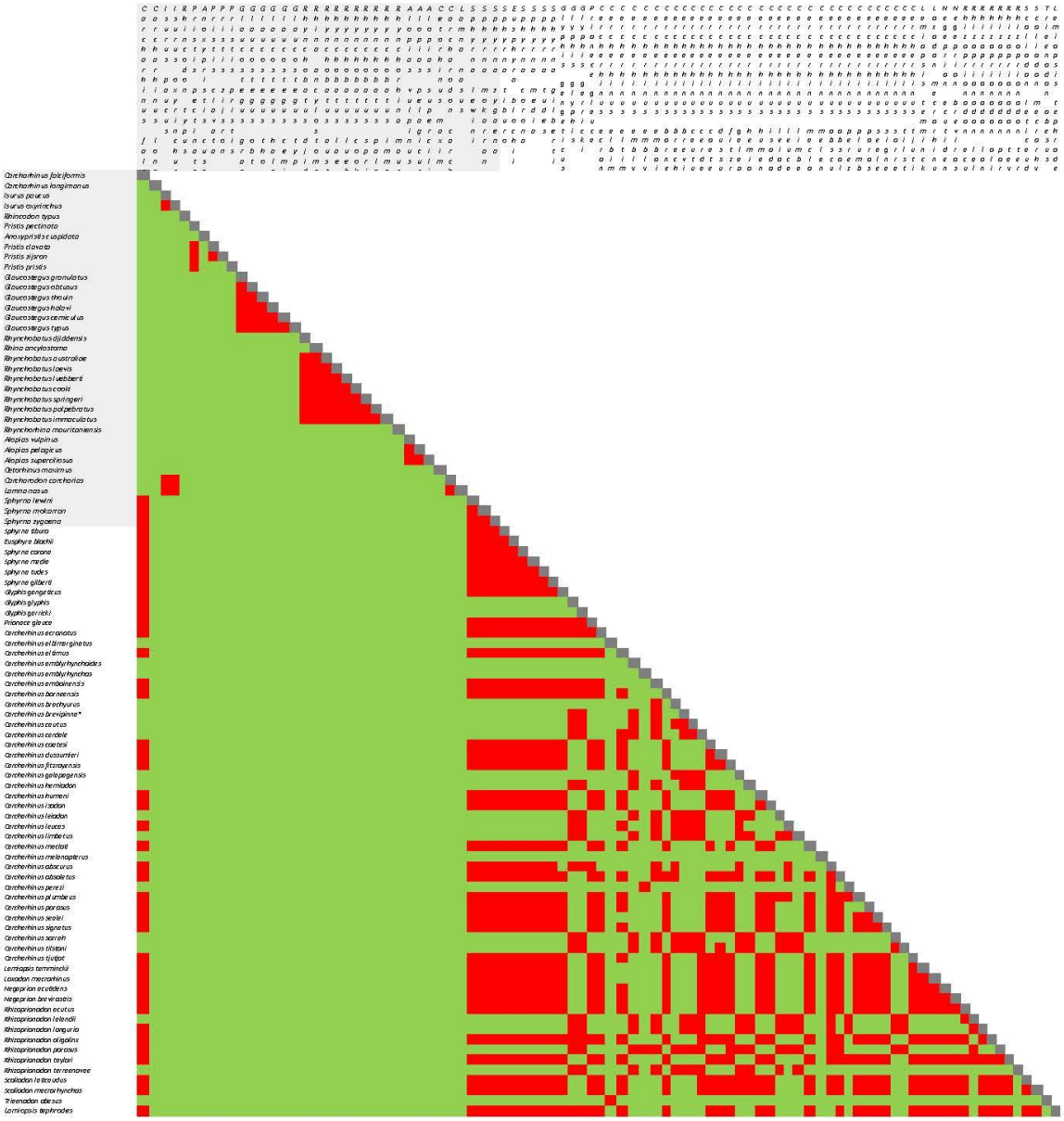
* fins change color between juveniles and adults

** only known from holotype - preserved animal appears to have black on apex on the ventral side of pectorals

Grouping 1: short with white margin and no color on underside
Grouping 2: medium to large with black markings or dusky markings concentrated on apex - recognizing that this group can be further broken down but would still ma
pectoral fins)

Grouping 3: wide/broad relatively short pectorals with no markings on ventral side (Lamnopsis spp., G. glyphis, and C. fitzroyensis)
Grouping 4: Broad/falcate with black / dusky apex

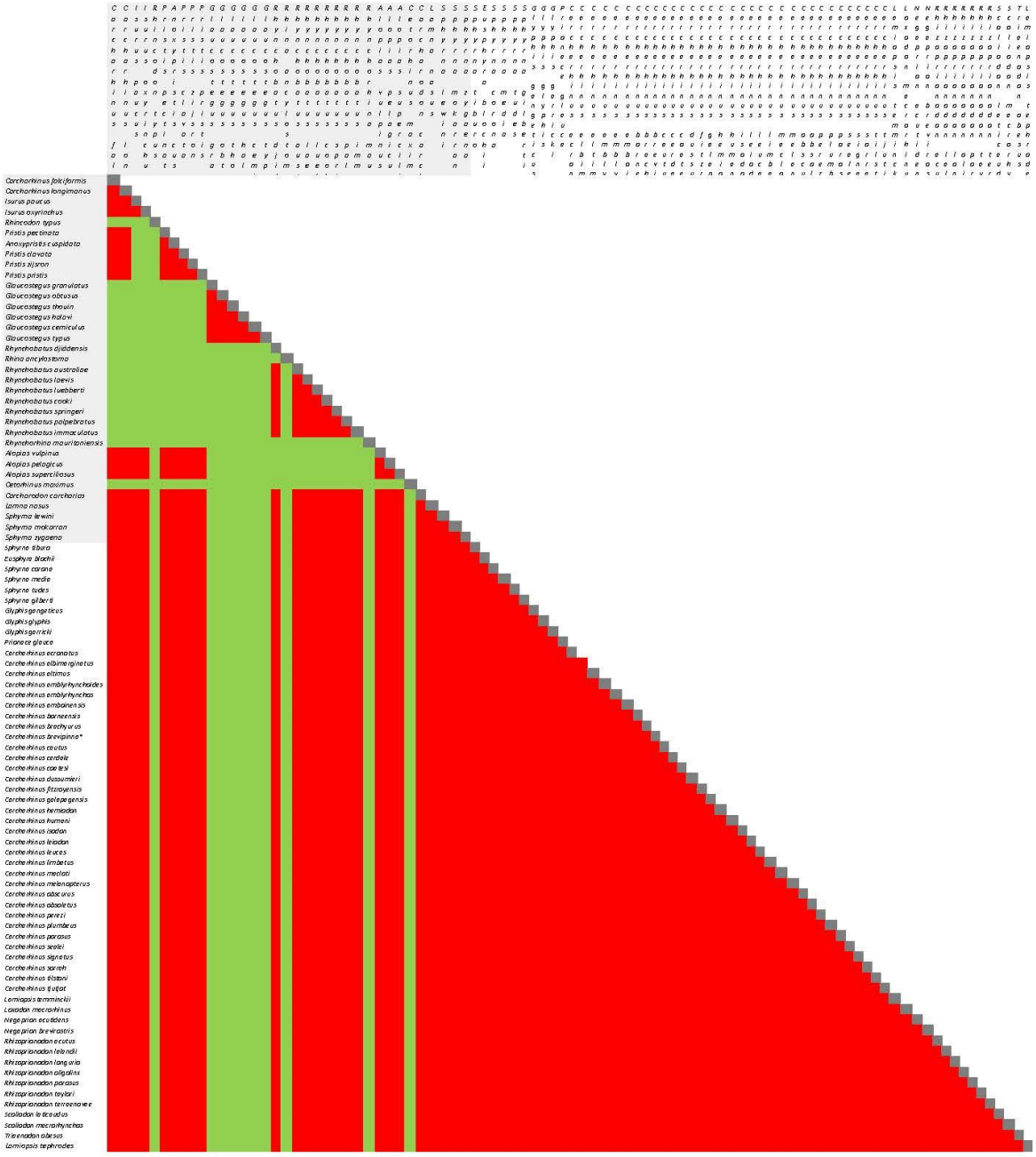
Table 7 – lower caudal fin lookalikes



Notes - most of this pertains to having the caudal fins either traded whole (rare) or with just the lower caudal fin. It is extremely difficult to distinguish caudal fins from most species, especially when considering that we are only looking at the lower caudal lobe. Generally, for species not already listed on CITES, this is really about the overall shape of the caudal fin and whether it has a black spot on the lower caudal or not. Those with black spots can be differentiated from those without but not between each other. Same with it is acknowledged that there may be some slight differences that impact the results of this matrix depending on the lifestages of some species. For example, some species have dusky fins as juveniles that disappear as adults or vice-versa.

Grouping 1: Lower caudal fin with black spot prominent or dusky
Grouping 2: lower caudal fin with white spots
Grouping 3: no marking on lower caudal fin
Grouping 4: caudal fin with black margin - sometimes leading into a black spot on lower caudal fin

Table 8 – meat lookalikes:



Notes - This is to showcase that meat can't be distinguished - have included the meat with skin which is why for some species we have green - but if the skin is removed - there is no way to distinguish between species

Annex 2 - Requiem shark family level shark fin ID guide (in the process of being finalized)

Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

April 25, 2022

To: **Coastal Sharks Management Board**

From: **Tina Berger, Director of Communications**

RE: **Advisory Panel Nomination**

Please find attached a nomination to the Coastal Sharks Advisory Panel – Thomas Newman, a inshore gillnetter from North Carolina. Thomas replaces Dewey Hemilight on the AP. Please review this nomination for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Dustin Colson Leaning

COASTAL SHARKS ADVISORY PANEL

Bolded names await approval by the Coastal Sharks Management Board

April 25, 2022

Rhode Island (2)
Stephen C. Segerson (rec)
37 Myrna Road
Warwick, RI 02818
Phone (day): 401.467.3143 ext. 108
Phone (eve): 401.439.5349
FAX: 401.941.2453
Email: ssegerson@etco.com
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

Captain Rick Bellavance (commercial rod and reel/for-hire)
140 Jerry Lane
North Kingstown, RI 02852
Phone: 401.741.5648
rickbellavance@gmail.com
Appt Confirmed 2/3/21

New York (2)
Steve Witthuhn (charterboat)
118 Kenneth Ave.
Greenlawn, NY 11740
Tel. 631.368.1315
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

Charles Witek (rec)
1075 Tooker Avenue
West Babylon, NY 11704-5047
Phone: 212.412.6707
Cell: 631.587.2211
charleswitek@gmail.com
Appt Confirmed 10/24/16

New Jersey (2)
Marty Buzas (comm./longline & gillnet)
558 Shunpike Road
Cape May Courthouse, NJ 08210
Phone (day): 609.827.2626
Phone (eve): 609.465.5776
Email: MBEileenB@yahoo.com
Appt. Confirmed 5/19/06
Appt Reconfirmed 5/17/10

Peter Grimbilas (rec/for-hire)
3 Oakwood Court
Towaco, NJ 07082
Phone (day): 973.696.1200
Phone (eve): 973.454.0315
FAX: 973.696.1411
Email: peterg@njoutdooralliance.org
Appt Confirmed 8/3/10

Delaware (2)
Daniel T. Dugan (rec)
20 South Woodward Avenue
Wilmington, DE 19805
Phone: 302.636.9300
Email: dugan@delanet.com
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

1 Vacancy – commercial or for-hire

Maryland (2)
Mark Sampson (for-hire)
10418 Exeter Road
Ocean City, MD 21842
Phone (home): 410.213.2442
Phone (cell): 410.726.7946
SharkQuest2@gmail.com
Appt Confirmed 8/3/10

Vacancy – comm gillnet/pots

Virginia (2)
Ernest L. Bowden Jr. (comm./gillnet)
4219 School Street
Chincoteague, VA 23336
Phone (day): 757.894.1243
Phone (eve): 757.336.5792
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

Vacancy – recreational

COASTAL SHARKS ADVISORY PANEL

Bolded names await approval by the Coastal Sharks Management Board

April 25, 2022

North Carolina (2)

Thomas E. Newman, III (inshore gillnet)
7821 Holly Springs Church Road
Williamston, NC 278892
Phone: 252.542.0449
Thomas.Newman03@gmail.com

1 Vacancy – for-hire or recreational

South Carolina (2)

Terry Annibale (comm)
1511 Holly Drive
North Myrtle Beach, SC 29582
Phone: 843.224.2104
Email: Capt-terry@hotmail.com
Appt Confirmed 8/3/10

Reese (Chip) Michalove (charterboat)
PO Box 6257
Hilton Head Island, SC 29938
Phone: 843.290.0371
Email: outcastfishing@yahoo.com
Appt Confirmed 8/3/10

Georgia (2)

Capt. Greg Hildreth (charterboat/rec)
477 Midway Circle
Brunswick, GA 31523
Phone: 912.261.1763
Email: hildrethcharters@bellsouth.net
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

1 Vacancy – commercial

Florida (2)

Russell Howard Hudson (comm. hook & line/for-hire captain)
1045 West International Speedway Boulevard
Daytona Beach, FL 32114
Phone (home): 386.239.0948
Phone (cell): 386.253.2843
FAX: 386.253.2843
Email: **DSF2009@aol.com**
Appt. Confirmed 5/19/06
Appt Reconfirmed 4/22/10

1 Vacancy – recreational

Non-Traditional Stakeholders (2)

Sonja Fordham
Shark Advocates International
Rue Franz Merjay, 14
1050 Brussels
Belgium
+32 495 101468
Email: sonja@sharkadvocates.org
OR
The Ocean Foundation
1990 M Street, NW, Suite 250
Washington, DC 20036
Phone: 202.436.1468
Email: sonjaviveka@gmail.com
Appt. Confirmed 5/19/06

Katie Westfall
1875 Connecticut Avenue, NW
Washington, DC 20009
Phone (day): 202.572.3376
Phone (eve): 202.607.6775
kwestfall@edf.org
Appt Confirmed 8/2/16

ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Chris Batsavage (your name) State: NC

Name of Nominee: Thomas E Newman, III

Address: 7821 Holly Springs Church Rd.

City, State, Zip: Williamston, NC 27892

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): (252) 542-0449 Phone (evening): (252) 542-0449

FAX: _____ Email: Thomas.Newman03@gmail.com

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
   1. Weakfish
   2. Coastal Sharks
   3. _____
   4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

   yes _____ no X

3. Is the nominee a member of any fishermen's organizations or clubs?

   yes X no _____

   If "yes," please list them below by name.

North Carolina Fisheries Association

Coastal Carolina Riverwatch

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Spanish Mackerel

Coastal Sharks

Bluefish

King Mackerel

Spot

Sea Mullet

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Monkfish

Oysters

Sea Scallops

Croakers

Shrimp

Spiny Dogfish

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? 25 years

2. Is the nominee employed only in commercial fishing? yes_____ no_____

3. What is the predominant gear type used by the nominee? Gillnets

4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? Inshore

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____ years

2. Is the nominee employed only in the charter/headboat industry? yes _____ no_____

If "no," please list other type(s)of business(es) and/occupation(s):_____

3. How many years has the nominee lived in the home port community? _____ years

If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years

2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no _____

   If "yes," please explain.

_____

_____

_____

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____years

2. Is the nominee employed only in the business of seafood processing/dealing?

   yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

_____

3. How many years has the nominee lived in the home port community? _____ years

   If less than five years, please indicate the nominee's previous home port community.

_____

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years

2. Is the nominee employed in the fishing business or the field of fisheries management? yes _____ no _____

   If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

_____

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Please see attached Bio

Nominee Signature: T E N III Date: 4-14-2022

Name: Thomas E Newman III
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

Chris Batsavage
State Director

State Legislator

Governor's Appointee

Thomas Newman, Williamston, NC

Mr. Newman is the owner/operator of the 40-ft. F/V Gotta Go with his homeport in Hatteras, NC. He has been commercial fishing for 25 years mostly in North Carolina, but ranging as far north as New York and has fished many seasons in Virginia. He is currently serving on the Mackerel Cobia Advisory Panel (South Atlantic Fishery Management Council) and Northern Regional Advisory Panel (North Carolina Division of Marine Fisheries). Mr. Newman holds permits and fishes for Spanish mackerel, bluefish, spiny dogfish, smooth dogfish, king mackerel, croakers, large and small coastal sharks and monkfish, species which are mainly managed by the Mid-Atlantic Fishery Management Council, the South Atlantic Fishery Management Council, the Atlantic States Marine Fisheries Commission. He is a member of the Coastal Carolina River Watch, serves on the Citizen Science Projects Advisory Team (SAFMC), and is involved in state and federal fisheries management issues working directly with fisheries managers and industry groups.

Mr. Newman received a B.S. in biology from Furman University in 2008. His focus was towards wildlife management but he also did a study abroad marine biology program in the Florida Keys and Belize directly observing habitats and multiple aquatic species. For his senior project he traveled to New Mexico to study an isolated population of desert bighorn sheep in the Fra Cristobal Range. The results of this study was published in The Southwestern Naturalist:

Evaluation of Methods Used to Estimate Size of a Population of Desert Bighorn Sheep (*Ovis canadensis mexicana*) in New Mexico
Author(s): Travis W. Perry, Thomas Newman, and Katherine M. Thibault
Source: The Southwestern Naturalist, 55(4):517-524. 2010.

Mr. Newman is also involved in climate change scenario planning and is looking forward to continue working with recreational, commercial, and ecosystem stakeholders to get ahead of these issues we are already seeing while planning for the future. He believes that flexibility, adaptation, and all user groups working together are going to be imperative for the future of our oceans.