Ottobrunn, 6 October 2023

Communication from StopFinningEU

on the Commission's response to the European Citizens' Initiative (ECI)
"Stop Finning - Stop the Trade"

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1. Introduction

On 5 July, the organisers of the ECI "Stop Finning - Stop the Trade" received the Commission's response to their demand to end the trade of loose shark fins in Europe through additional trade legislation. The organisers welcome the Commission's recognition of the importance of sharks and their protection. It is understood that the Commission will launch an impact assessment on the environmental, social and economic consequences of a trade ban of loose shark fins in the European Union by the end of 2023.

Throughout the political process leading up to this assessment, the Stop Finning - Stop the Trade initiative has continuously provided feedback and responses to statements made to demonstrate the best available science on the issue, the ECI's willingness to contribute to the legislative and democratic process, and to ensure that the voice of 1.1 million EU citizens is heard. The ECI community of conservation organisations, experts and citizens has a deep knowledge of the science and data that can be of great help in the assessment. The best outcome will be ensured if the process is transparent and the impact assessment covers all necessary sectors.

Scientific evidence and a balanced view of all industries and communities affected, both positively and negatively, will result in an assessment that moves the EU towards its goals of protecting biodiversity and future livelihoods. Most importantly, this assessment must avoid the traditional tendency to prioritise the interests and financial impact of the commercial fishing industry over other communities, small-scale operations and long-term economic, environmental and social impacts.

In order to meet the requirements of a detailed response, the following pages address aspects necessary for a fair and balanced impact assessment, as well as issues related to the content of the Commission's response. The aim is to assist the Commission and its Institutions in carrying out the Impact Assessment to provide a holistic picture of a shark fin ban.

The organisers would like to emphasise the calling for an "additional" regulation to address the trade in loose shark fins, not an extension of the Fins Naturally Attached (FNA) regulation. As a result, this new policy will ensure that there is no longer an enforcement loophole that enables the illegal trade in shark fins of endangered, threatened and protected (ETP) species in the EU. As such, it will further improve the EU's efforts to minimise biodiversity loss and ensure the sustainability of our blue economy and fisheries sector, which are high priorities of the EU Green Deal.

2. Impact Assessment

As highlighted, the Initiative, supported by over 1.1 million citizens and over 100 NGOs, welcomes the suggested plan of action by the EU Commission. In the responses, the Commission highlights rightfully the strong connection of the loose shark fin trade and Europeans strong role in this market.

The organisers' demand referred to the trade with loose shark fins. However, as the proposed legislation would require sharks to be traded in whole, this will inevitably impact the shark meat market as well. The impacts of the consumption of shark meat are therefore also discussed and should find consideration in the assessment as well as the likely reduction of overall shark catches in Europe.

Therefore, the ECI's response below will provide a holistic overview on the impact assessment, including all aspects of the trade and shark conservation.

2.1. Economic Assessment

The response of the EU Commission primarily focused on economic aspects of the value of shark exploitation to the fishing industry. This needs to be expanded by other economic factors in the assessment to ensure a complete understanding of the economic importance of conserving sharks and in particular ETP species. Consequently, the following topics of the economic importance of sharks must be included.

2.1.1. Beneficiaries of shark exploitation

It is important to understand who benefits from the loose shark fin trade in Europe, because it is often feared that fishing families (subsistence fishing) would be robbed of their livelihoods in the event of a fin trade ban. However, the big beneficiaries do not affect artisanal fisherfolk but industrial operations. The ownership of European industrial fishing vessels is often convoluted and, where assessed, benefits only a few individuals (Freitas, 2021). Insufficient transparency requirements, privacy protection policies, complex business structures and insufficient monitoring enable actors to obscure identities, engage in activities such as mixing of illegal and legal fins and escape punishment for doing so (Kinnard 2021). Especially wealthy operators of fishing vessels and seafood processing facilities can exploit the absence of clear ownership regulations. They use intricate setups to hide the genuine individuals with ultimate and effective control over the operation (be it a fishing vessel, processing facility, etc.), commonly known as beneficial owners. (FATF, 2014). For example, 15 of the 16 vessels registered under Curaçao, El Salvador, Guatemala, Panama and Belize flag, have Spanish companies as a beneficial owner (Aragó et al., 2018).

Shark exploitation is therefore not likely to result in large benefits for artisanal fisherfolk or their livelihoods. On the contrary, the current regulatory framework undermines small scale fisheries (Song et al., 2020).

As the shark fins are exported, there is also no additional beneficiary for shark fins in Europe. Besides the trade of the fins, the sale of shark meat has other problems in the supply chain, such as the content of toxic metals (e.g. methylmercury) and mislabeling. This will be further discussed in the social assessment (section 2.3). This has economic consequences for consumers and producers. Mislabelling of species and substitution commonly leads to commercial fraud, causing consumers to pay a premium for a highly sought-after item, only to unknowingly consume a different species (Pazartzi et al., 2019 and Hasan et al., 2023).

2.1.2. Beneficiaries of shark conservation

While it has been demonstrated that beneficiaries of shark exploitation is limited to a wealthy minority, the beneficiaries of shark conservation creates sustainable livelihoods in the tourism sector, improves food security and, as will be discussed later, mitigates the impacts of climate change and biodiversity loss.

The value of a shark alive for tourism is a relevant economic factor (Cisneros-Montemayor et al., 2013). Because of the growth potential of shark tourism in Europe (Gallagher et al., 2011, Gonzáles-Mantilla et al., 2022 and Ressurreição et al., 2022), the value of live sharks is currently difficult to assess, likely to be undervalued and is widely understudied. Shark diving tourism has been responsible for a shift in the socio-economic importance of sharks from a fisheries product to a more valuable reusable resource. Not only for direct revenues for local operators, but also through the stimulation of other economic development of local businesses like hotels and restaurants (Gallagher et al., 2015). Tiger shark diving on the east coast of South Africa alone was estimated to generate annual revenues of approximately US$1.8 million to the coastal communities in the area (Dicken and Hosking, 2009), lemon shark tourism in Moorea (French Polynesia) was estimated to generate US$5.4 million annually (Clua et al., 2011) and Palaus shark diving industry generated approximately US$19 million in 2010 (Vianna et al., 2012). While shark tourism is still developing in the EU, relevant operations already exist in Portugal (e.g., Blue Sharks, Mako Sharks - Azores), Spain (e.g., Angel Sharks - Gran Canaria), Ireland (Basking Sharks, Hound Sharks and Spiny Dogfish), Italy (Blue Sharks - Sicily), Croatia (Blue Sharks - Adriatic), as well as, in the wider Mediterranean (Shamir et al., 2019) UK (Blue and Basking Sharks) or Norway (Spiny Dogfish). The only scientifically assessed industry is the still developing shark dive tourism on the Azores which currently yields above 1 million US$ (Gonzáles-Mantilla, 2022).

2.1.3. Illegal, Unreported and Unregulated fishing and trade

There is strong evidence, which suggests that shark fins are often associated with illlegal, unreported and unregulated (IUU) fishing (Liddick, 2014) and trade (Shea and To, 2017, Partin, 2022). IUU fishing and trade also undermine existing management and regulatory systems (Partin et al., 2022 , Sumaila et al., 2016), which can hinder economic as well as ecological sustainability. According to the European Parliament, IUU catches worldwide would range between 11 and 26 million tonnes annually, with a value of US$10- 23.5 billion (EU Parliament briefing, 2022). Sharks are especially vulnerable to IUU fishing (Liddick, 2014), due to their low reproduction rate which makes fisheries management difficult (see further details on the point regarding the environmental assessment (2.2)). This can ultimately lead to the collapse of fish stocks or extinction of ETP species (Agyeman et al., 2021). To mitigate this, more mitigation methods are needed, such as patrol assets,

observers, port inspections and most importantly, customs checks. By keeping the current state of loose shark fin trade, costs for these mitigation measures are much higher compared to when the fins would remain naturally attached to the carcasses through the trade.

As the Commission did not establish a list of existing infringements (page 9 §2), the Citizens Initiative is able and would be happy to provide a list of vessels which have engaged in such practices and evidence of infringements on the RFMO level. The ECI can also create the relevant contacts to customs officers in Europe who have worked on such trade infringements. Due to the inability to demonstrate the existing infringement, the assessment should include an analysis of the discrepancies in the trade data between imports and exports of shark products between the catch data, the EU and the global market. The Commission has already communicated that there are anomalies and uncertainties in these data sets, which would likely be explained through underreporting or falsifying data in order to avoid the detection of illegal behaviour. Due to the nature of this trade being frequently associated with IUU activity, the Stop Finning - Stop the Trade initiative welcomes the suggestion from the Commission to explore the role of the black market in the fin trade.

2.1.4. The unassessed value

Some values of live sharks can not be assessed. This includes spiritual, cultural and social values. For example, people generally hold a higher value for flagship (e.g. Great Panda, Whales, or Turtles) or keystone species (e.g., Bison or Beever) , both of which sharks can be considered part of (Clarke et al., 2021, Barua, 2011). The willingness to pay by citizens to ensure the conservation of sharks should therefore be considered (Martin-Lopez, 2007, Mazzoldi, 2019) in the impact assessment.

2.1.5. Costs of health risks

As highlighted by the fishing industry (represented by Europeche during the parliament heating), shark fins traded by the EU mainly consist of blue sharks (*Prionace glauca*). The recently created meat market has increased the imports of blue shark meat within the EU and decreased the exports outside of it (IFAW, 2022). Nevertheless, it should be noted that the consumption of these products can also pose a risk to health. Combined with the mislabeling of shark products, unaware consumers may be choosing products which commonly exceed the maximum tolerable levels of contaminants, while believing to consume other fish, which does not have these issues. The high concentration of contaminants, including a high mercury content - especially in blue sharks - is widely established (for example: Riesgo et al., 2023 , Alves et al., 2023). As methylmercury is highly

toxic (one of the top 10 compounds the WHO considers as a major health concern), a consequence of the consumption can therefore pressure costs on the health system, severe illnesses or even death. This can be especially severe in shark consumption, due to the misconception that shark flesh can cure diseases (Rose, 1996 and Ostrander, 2004) or statements such as the one from Europeche during the Parliament hearing “From a nutritional point of view the meat of the shark is a healthy and cheap protein, that does not have problems''. Such a narrative may be promoted to the public to increase the demand. Consequently, the current perception of consuming shark meat, the public knowledge on its toxicity and the health risks and costs associated with the consumption should be part of the assessment.

2.1.6. Mitigation of climate change and biodiversity loss

The relevance of some marine organisms on climate mitigation is well established. This includes for example whales (Pearson et al., 2022), burrowing crabs (Araujo et al., 2012) and plankton (Jenkinson, 2021), the role of sharks is widely understudied. However, there is scientific evidence of the important role of sharks in marine ecosystems and how these ecosystems can mitigate climate impacts. This includes important ecosystems for flood and storm mitigation, such as mangrove forests (Mazumder et al., 2007), coral reefs (Sherman, 2020), or large ecosystems relevant for CO2 sequestration such as phytoplankton (Baum and Worm, 2009). By adding complexity to the trophic food web of the ecosystem, large animals contribute to adaptations to climate change. This is achieved through increasing resistance to abrupt ecosystem change, habitat heterogeneity like plant dispersal and microclimate modification (Malhi, 2022).

The state of the oceans plays a central role in climate change and, consequently, in the mitigation of the devastating consequences. Governments around the world are facing costs in the billions to address climate challenges. Therefore, this must be included in this economic impact assessment.

2.1.7. Conclusions economic assessment

In this section, the ECI highlighted the multifaceted nature of the shark fin trade. The consequences of trading shark fins in bulk have far-reaching impacts on enforceability and the conservation efforts of ETP species. When fins are naturally attached during the trade, the proposed law will inevitably also impact the shark meat market and as a consequence of this, the shark fishery as a whole. The organisers demonstrated important features of shark conservation, which have large potential for conservation efforts and the Green Deal of the EU. When all of these aspects are considered, the value of live sharks will far exceed the

value of their exploitation (e.g., Cajiga, 2021). Conversely, as shown by Ferretti et al., 2020, a shark fin trade ban can be undertaken for negligible costs while truly impacting the biggest driver of shark exploitation globally.

2.2. Environmental Assessment

Sharks have been on this planet for more than 450 million years (Brown and Schluessel, 2023), outliving the dinosaurs. Consequently, many marine organisms had to adapt to their presence. This resulted in direct and indirect dependencies on sharks in many marine ecosystems, making them keystone predators (Motivarash Yagnesh et al., 2020). However, sharks are highly vulnerable to overexploitation, resulting in an alarming decline of shark populations, including in the northeast Atlantic and Mediterranean. Because of their critical importance to environmental concerns, the following aspects should receive consideration in the impact assessment as well as the economic and social ones.

2.2.1. The overexploitation of sharks

The late maturity and low reproduction rate of sharks makes them more vulnerable to overfishing and local extinction if there is no adequate fisheries management (Myers and Worm, 2003, Dulvy et al., 2014). Traditional yield models are based around logical growth - hence the population doubles with each generation until the point of maximum growth. The idea is that everything above the point of maximum growth can be sustainably caught (maximum sustainable yield). However, this only works if the reproductive cycle (the time for population doubling) is not exceeded by the fishing pressure. Even sharks, like the blue shark, with higher reproduction rates have a population doubling time of more than 3 years (Silva, 2008). This makes the impact assessment of shark fisheries difficult, especially where the maturity stage of the sharks is not considered (Aires-da-Silva and Vincent, 2007). As the organisers of the initiative will explore, the EU shark fishery is associated with catches of juvenile blue sharks.

The overall abundance of sharks is only 6 % of the numbers which existed 70 years ago. With 3 % this number is even lower for tropical sharks (Porcher and Darvell, 2022). According to the assessment of the IUCN, more than one third of all sharks are threatened with extinction (Dulvy et al., 2021). With 75 % this proportion is even higher for oceanic sharks (Pacoureau et al., 2021). This is especially of concern as these count for more than half of global captures of identified shark species (Oliver et al., 2015 and Dulvy et al., 2017). Due to this overexploitation, various reports have highlighted that most sharks are caught before reaching maturity (Ward et al., 2005, Lam et al., 2010 and Doherty et al., 2014). This makes the management of stocks impossible, especially as it is very difficult to determine the sexual maturity of a shark solely by looking at detached fins. This highlights how the

proposed legislation could support the detection of juveniles, as they will be much easier identified when traded as a whole. As the meat market continues to overexploit shark populations (Pincinato et al., 2022) it is important to assess the impact of a loose fin trade ban on this market from a sustainability perspective.

2.2.2. The impact of the shark fin trade on ETP species

Research on 4.800 randomly sampled shark fins in Hong Kong from Fields et al., 2020, demonstrated that ⅓ of identified species were threatened with extinction, which was masked through the trade. According to Hasan et al., 2023, other studies focusing on the Asian and European markets also revealed a range of threatened species, which are illegal to sell under EU legislation 1379/2013.

Due to no or mislabelling, nearly all loose shark fins in the global market become untraceable (Simpfendorfer and Dulvy, 2017) or unnoticed by relevant authorities. This may also compromise fisheries management strategies (e.g. Merten Cruz et al., 2021). Export controls are commonly confiscated due to the misreporting of species information (for example: Wainwright et al., 2018 , Hobbs et al., 2019 and Choo et al., 2021). The misreported fins are most commonly CITIES-listed and classified as endangered by the IUCN (Hobbs et al., 2019 and Villate-Moreno et al., 2021). This type of laundering of shark fins (IFAW, 2022), threatens ETP species and therefore the EU's commitments to biodiversity targets. As the initiative has pointed out on numerous occasions: It is not possible to ensure that loose shark fins are traded without including the laundering of ETP species. The resulting unsustainable trade of shark products is the most significant threat to shark populations (Hasan et al., 2023). Most of the international trade is uncontrolled or currently uncontrollable, especially due to laundering through criminal networks. Inadequate desire for sustainable and legal trade from governments or consumers in major demand centres are making alternative solutions to a loose shark fin trade ban unviable (Mitchesona et al., 2018).

2.2.3. Why there is limited evidence for sustainable shark fisheries in Europe

While the Commission states that shark stocks can be managed through Total Allowable Catches (TACs) and through the precautionary principle (page 8 §4), it failed to highlight that the current shark stocks are depleted with no clear management structure in place. There is only stock assessment data available for 41 of the 500 species, of which nearly half (42 %) showed evidence of overfishing. While those stocks without evidence of overfishing were primarily located around the USA, Canada and Australia other ocean basins like the

north-east Atlantic and Mediterranean were notably overexploited (Bradei et al., 2018, Dulvy et al., 2017, Walls and Dulvy, 2021). Nine of the 16 shark species still landed in the Mediterranean are more threatened regionally than at the global level and between 53% and 71% are at risk of extinction (Cashion et al., 2019). This is at least partly because the impact level of the European shark fishery and bycatch from other vessels is widely unobserved, unregulated and undocumented (Worm et al., 2013 , Dulvy et al., 2014, Fields et al., 2017). This combined with the secretive nature of the fin trade and difficulties obtaining relevant data, obscure their true status of overexploitation rates, particularly of ETP species (Porcher and Darvell, 2022).

Stock assessments on sharks are often following traditional models used for fast reproducing species. Because of this, there are multiple examples in the EU where shark fisheries have resulted in a collapse of stocks, including the spiny dogfish (endangered in the North Sea) or the blue shark (critically endangered in the Mediterranean). The environmental assessment should therefore make sure that the complexity of shark ecology is considered not only by applying appropriate models but also by following an ecosystem based approach in which the important role of sharks as a keystone predator is considered. It should further ensure that the suggested precautionary approach from the Commission is followed for all shark fisheries in Europe. This should especially consider the low observer coverage on shark fishing vessels (Fauconnet et al., 2023).

2.2.4. Conclusions of the environmental assessment

The section highlighted the reasons why sharks have declined by over 90 % in the last 70 years and why overexploitation of stocks is a common problem, especially in Europe. But even if individual shark stocks could be sustainable through better management, the bulk trading of loose shark fins makes it impossible to ensure that the fins of ETP species are not laundered into the exports unless the fins would be naturally attached to the body, which would make it much easier for customs to determine the traded individuals to the species level.

2.3. Social Assessment

The demand for shark fins puts pressure on shark stocks worldwide. Due to the resulting abundance of shark meat as a by-product of the fin trade (Dent and Clarke 2015), the shark meat market has significantly grown, especially for blue sharks in Europe. However, because of their long life span and high trophic level, their meat accumulates toxic metals such as methylmercury, which can lead to brain damage and increases the risk of cardiovascular disease including heart attack. Shark products are often mislabelled and wrong narratives cover these severe health risks of shark meat consumption. These aspects will be discussed deeply in the following section.

2.3.1. Public opinion on shark fin trade

When discussing the requested legislation from the ECI, the wider public generally responds with disbelief that this trading practice is not already banned. While 1.119.996 EU citizens signed the ECI, the organisers strongly believe that there is a strong majority of the public behind our suggestion.

Due to the requirement to make shark fishing lucrative, the increase in supply and promotion resulted in higher shark meat sales. As previously shown the shark meat market only developed in the late 1990s and is not widely accepted by many EU citizens, consequently, the meat has a low price association and is mislabeled.

2.3.2. The role of a shark meat market and its connection to the shark fin market

In the discussion around a fin trade ban, Europeche and Spanish politicians argued in public hearings that it was traditional to consume shark meat and saw this as threatened. The development and role of the shark meat market is discussed below.

However, this market developed in the last years. Even the FNA regulation currently in force states: '*Shark fins do not constitute a traditional ingredient of the European diet, but sharks do constitute a necessary element of the Union's marine ecosystem*.' (REGULATION (EU) No 605/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 June 2013)

The Commission's response highlights the connection to shark meat consumption at numerous sections (for example page 2 §2, 3 §2,6 and 7 §3), which further demonstrates the strong relationship between those two markets. However, due to the value of their fins, sharks became an exceptionally lucrative target, with the result that numerous fisheries around the world began to hunt them for the first time (Clarke et al., 2007, Hareide et al.,

2007, Da Silva et al., 2021 and Van Houtan et al., 2020). This included Europe, where blue shark landings first occurred in 1993. While the fins were sold to Asian markets, the meat was exported to South America and eventually also marketed in Europe (Dent and Clarke 2015).

By comparing the price of the shark fins to the meat, it becomes evident that the meat market is a by-product to the fin exports and was unlikely to develop on this scale on its own. While a basic market for shark meat has already existed in Spain, the main actor in the European shark fishing industry, the export of shark meat has increased steadily in recent years. This trend especially dates back to 2004, after finning was banned in 2003 by the EU FNA regulation. The obligation to also land the shark's bodies brought more shark meat onto the market that was not directly related to demand, therefore new markets had to be developed. As the sharks with their high-priced fins now took up more storage space on boards of vessels, there was a switch from fishing vessels that had originally also caught tuna or swordfish to shark-only fishing, according to the FAO. This has led to a sharp increase in landings of shark meat and a sharp increase in exports of 80 % to 21.426 tonnes in Spain between 2002 and 2012 (Dent and Clarke 2015).

2.3.3. Mislabeling or EU citizens relationship to shark products

Hasan et al. (2023) highlighted that besides the consumer information regulation (EC No 1169/2011) 33 studies in America and Europe identified shark mislabeling of products that were intended for human consumption. The frequency of mislabeling can vary, a study conducted in Greece found 20 % of tested sharks to be mislabelled, including species which are not allowed to be landed (Pazartzi et al., 2019), while in Spain the level of mislabeling can reach up to 50 % of tested products (Pardo & Jiménez, 2018). While the mislabeling of shark products impacts both the meat market and the fin trade, shark is also disguised in a range of other products, which consumers are widely unaware of. These include cosmetics, health and pet food (Cardeñosa, 2019). The labelling of shark products frequently fails to follow EU legislation for seafood (Marchetti et al., 2020) and the use of broad (so called “umbrella”) labels permitted under the rules (Hobbs et al 2019), means many different species can be sold under the same common/commercial name, jeopardising people's ability to make informed buying decisions for sustainable consumption (Jacquet & Pauly, 2007, Hobbs et al 2019). Especially as the acknowledgement of the inclusion of sharks still may mean that it originates from endangered species (Ardura Gutiérrez et al., 2011).

As demonstrated, the traceability of seafood is jeopardised through mislabeling of shark products, this creates not only social but also ecological and economic threats to the supply chain (Jacquet & Pauly, 2008; Reilly, 2018). This is because shark meat can not be sold at the premium price of some other species. For example, an Italian study showed that advertised

‘swordfish’ were genetically identified as the less economically-valuable blue and smooth-hound sharks, and angular roughshark (Ferrito, 2019). The current level of mislabeling will be much more difficult with implementation of the loose trade ban. However, it also needs to find consideration in any other recommendation that the assessment will consider.

2.3.4. The health consequences of shark consumption

As previously highlighted, the shark meat trade and fin trade are inevitably connected. Both can have severe consequences for the health of Europeans (Riesgo et al., 2023, Storelli et al., 2022) and people consuming shark products in general, including shark fin soup (Barcia et al., 2020, Choy and Wainwright, 2022). The consumption of 100 g blue shark meat exceeds the European Food Safety Authorities tolerable weekly intake (TWI) value for mercury of 1.3 µg/kg body weight (EFSA,2012, Kibria and Harron, 2015). As previously mentioned, this is not the narrative under which shark meat is currently promoted: The promotion as a cheap and healthy protein source provides a false security for consumers. Instead, it leaves Europeans not only exposed to this false information but sacrifices the health of all people consuming shark products. Any assessment should consider this aspect for the fin trade market and the meat market. It should be made sure that the health of people in and outside of Europe is not sacrificed for short term financial gains of an industry.

2.3.5. Conclusions of the social assessment

The consequences of shark consumption have far-reaching impacts, beyond economic and environmental interest. Harmful substances which bioaccumulate in sharks are consumed globally as a consequence of false or insufficient information about shark products. Especially the industry drives this narrative or avoids it by mislabeling the products in misleading ways, so that consumers may not be aware of what they are consuming. Furthermore, the ECI demonstrates with over 1.1 Million signatures, that EU citizens are not interested in participating in the barbaric market of loose shark fins.

3. Further remarks on the response

While the previous section focuses on the aspects which need to find consideration in the assessment, further remarks will focus on two aspects of the response from the commission, trade and the role of the Regional Fisheries Management Organisation (RFMO). In this response the organisers will highlight once again why the ECI proposed a legislation for fins to be naturally attached to their bodies when traded and why alternative solutions, such as shifting the responsibility to the RFMO is insufficient to improve the conservation of ETP sharks.

3.1. Trade

As highlighted, the complexity of the supply chains of shark fins (and meat) enables smuggling, laundering and organised crime, such as trading ETP species (Fields et al., 2017, Sadovy de Mitcheson et al., 2018 and Niedermüller et al., 2021). Because trade statistics do not provide accurate information to the species level (Dent & Clarke, 2015), the occurrence of illegally traded CITIES listed species in the shark fin trade is well documented (for example: Villate-Moreno et al., 2021, But et al., 2020 , Ferretti et al., 2020, Fields et al., 2015, 2017, 2020 Cardeñosa et al., 2018, 2020, Wainwright et al., 2018, Boon, 2017,Asis et al., 2016 and Liu et al., 2013). This is not clearly stated in the Commission's response. The provided information on sharks traded is also insufficient on where catches occurred. This combined with the regular mislabeling of shark products is a major problem where international trade is allowed under non-detrimental findings for CITES Appendix II listed species (Hasan et al., 2023). For example, a Study by Hellberg et al., found that mislabelled shark products contained the CITES-listed thresher and silky sharks (Hellberg et al., 2019). These findings demonstrate that the used narrative of reporting illegally traded and globally threatened shark species as continued consumption and trade of shark products (CITES, 2021; Roberson et al., 2020) undermines the threat ETP sharks face through the loose shark fin trade (Hasan et al., 2023).

3.2. Regional Fisheries Management Organisations

It should be clearly stated that moving responsibilities to the RFMO level will not address the challenges highlighted in the sections above. The RFMO will not be able to change fin laundering, mislabeling and health concerns regarding shark consumption. Furthermore, the recent efforts to create a ban of fishing aggregation devices demonstrates the difficulties any new conservation measures will face when discussed on this level. An improvement in shark conservation in this way can not be guaranteed and will likely be an easy way for the EU to shift responsibility rather than lead by example.

To date, EU shark fisheries have no comprehensive management framework either at European or Regional Fisheries Management Organization (RFMO) level, and the European Action Plan for Sharks is outdated and lacks SMART targets (Niedermüller et al., 2021). While RFMOs can play an important role in promoting sustainable management of shark species, it is unlikely that they can guarantee it on their own. A more comprehensive and coordinated approach to shark conservation is needed that includes a range of measures, such as improved data collection and monitoring, stronger regulations and enforcement, and efforts to reduce demand for shark products (Walker and Pinto, 2019).

Furthermore, the RFMOs are not in the position to ensure sustainable management of shark species, as they do not hold enforcement capabilities on such topics, especially in the high seas. RFMOs have a purely advisory role, most have management powers to set catch and fishing effort limits, technical measures, and control obligations. These are mainly covering specific species, such as tuna, but do not sufficiently extend to sharks on any of the management powers mentioned (EU, Oceans and Fisheries, 2023). While finning is prohibited in most RFMOs, the regulations rarely go beyond the FNA regulation. There are a few exceptions, such as prohibition of direct fishing or live release policies for specific species (e.g., the porbeagle shark).

ICCAT in particular has also been associated with illegal fishing and trafficking of bluefin tuna through falsified catch certificates (Operation Tarantelo). The establishment of a FAD restriction in IOTC to conserve the overfished yellowfin tuna stock resulted in failure, due to industry pressure. This demonstrates that RFMOs mainly cover specific species, such as tuna, but do not sufficiently extend to sharks on any of the management powers mentioned in the response. Even though blue shark landings exceed the catch value of each of the three iconic bluefin tuna species, there is no RFMO dedicated to the conservation and management of any oceanic shark.

The Commission also raises concerns about the fin trade ban leading to less sustainable practices of non-EU fisheries. This does not justify the EU not exerting proper control over its own vessels and nationals.

4. Call for transparency

Stop Finning - Stop the Trade has received support from over 1.1 million European citizens who are deeply concerned about the impact of the shark fin trade on marine ecosystems. The organisers appreciate the positive interactions they have had with the European Commission in recent months, demonstrating a shared commitment to addressing this critical issue.

The success of Stop Finning - Stop the Trade is indicative of the collective responsibility the ECI has for the health and sustainability of our oceans. It represents the voices of a significant number of European citizens who want to see decisive action taken against the shark fin trade and its negative impact on marine biodiversity.

- **Transparency**: As representatives of more than 1.1 million European citizens, transparency is an important cornerstone of democratic decision-making. Including the ECI in the subsequent stages of the policy process would not only respect the voices of concerned citizens, but also uphold the principles of openness and accountability.
- **Informed decision-making**: The organisers offer a wealth of insight from citizens who deeply care about the issue of the shark fin trade. By involving the Stop Finning - Stop the Trade initiative in the policy process, the European Commission can tap into this valuable resource and ensure that policy decisions are based on the real concerns and needs of European citizens.
- **Timely communication**: It is understood that policy making is complex, but the organisers stress the importance of timely communication on the progress of the impact assessment and subsequent steps. Transparent communication fosters trust and confidence among citizens who have expressed their concerns through the ECI.

The organisers respectfully request that the European Commission consider their call for transparency and meaningful engagement as a continuation of the positive dialogue that has been established. The intention is to contribute constructively and collaboratively to the decision-making process to ensure that the policies developed are holistic, effective and widely accepted.

5. Conclusion and outlook

The European Commission's response to the European Citizens' Initiative's demand to end the trade in loose shark fins in Europe through additional trade legislation recognises that the Stop Finning - Stop the Trade initiative raises important issues that are relevant to EU policy on the protection of the marine environment. The organisers of the ECI share Commissioner Sinkevičius' view that this is a global issue. However, Europe now has the opportunity to become part of the solution rather than remain part of the problem. As this document points out, this can only happen if the impact assessment is carried out in a neutral way that does not prioritise the interests of the commercial fishing industry. The ECI shows that there are many aspects to be assessed when it comes to economic, environmental and social impacts.

The organisers of the ECI Stop Finning - Stop the Trade take their responsibility to represent the voice of more than 1.1 million European citizens seriously and therefore reiterate the importance of involving the ECI in the next steps as a strong statement for direct democracy.

Dr. Nils Kluger
Spokesperson

Alex Cornelissen
Substitute Spokesperson

6. Bibliography

Agyeman, N. A. & Blanco-Fernandez, C. & Steinhaussen, S. L. & Garcia-Vazquez, E. & Machado-Schiaffino, G. (2021): Illegal, Unreported, and Unregulated Fisheries Threatening Shark Conservation in African Waters Revealed from High Levels of Shark Mislabelling in Ghana. Genes. https://doi.org/10.3390/genes12071002.

Alves, M.F. L. & Lemos, F.L. M. & Moutinho, B. A. & Ceia, R. F. & Muñoz-Arnanz, J. & Jiménez, B. & Cabral, H. & Novais, C.S. (2023): Assessment of contaminants in blue sharks from the Northeast Atlantic: Profiles, accumulation dynamics, and risks for human consumers. https://doi.org/10.1016/j.envpol.2022.120467.

Arago, L. & Lepiz, Q. D. (2018): How the Spanish tuna companies are caitalising on loopholes in the gulf of Guinea. How the Spanish tuna companies are caitalising on loopholes in the gulf of Guinea - CENOZO. [Download on 14.08.2023]

Araújo, J.M.C. & Otero, X.L. & Marques, A.G.B. et al. (2012): Selective geochemistry of iron in mangrove soils in a semiarid tropical climate: effects of the burrowing activity of the crabs Ucides cordatus and Uca maracoani. https://doi.org/10.1007/s00367-011-0268-5.

Ardura, A. & Planes, S. & Garcia- Vazquez, E. (2011): Beyond Biodiversity: Fish Metagenomes. doi:10.1371/journal.pone.0022592.

Asis, J. M. A. & Lacsamana, M. K. J. & Santos, D. M. (2016): Illegal trade of regulated and protected aquatic species in the Philippines detected by DNA barcoding. DOI: 10.3109/19401736.2014.913138.

Barcia, G. J. & Argiro, J. & Babcock, A. E. & Cai, Y. & Shea, H. K. S. & Chapman, D. D. (2020): Mercury and arsenic in processed fins from nine of the most traded shark species in the Hong Kong and China dried seafood markets: The potential health risks of shark fin soup. https://doi.org/10.1016/j.marpolbul.2020.111281.

Barua, M. (2011): Mobilizing metaphors: the popular use of keystone, flagship and umbrella species concepts. Biodivers Conserv 20, 1427–1440. https://doi.org/10.1007/s10531-011-0035-y.

Baum, J. K. & Worm, B. (2009): Cascading top-down effects of changing oceanic predator abundances. p. 699-714. https://doi.org/10.1111/j.1365-2656.2009.01531.x.

Biffi, D. & Lopez-Mobilia, A. & Kelez, S. & Williams, D. & Chumchal, M. M. & Weinburgh, M. (2020): Mislabelling and high mercury content hampers the efforts of market-based seafood initiatives in Peru. https://doi.org/10.1038/s41598-020-77338-x.

Boon, P. Y. (2017): The shark and ray trade in Singapore. The shark and ray trade in Singapore | Policy Commons. [Download on 20.08.2023]

Bradai, M. N. & Saidi, B. & Enajjar, S. (2018): Overview on Mediterranean Shark's Fisheries: Impact on the Biodiversity. Marine Ecology - Biotic and Abiotic Interactions. InTech. DOI:10.5772/intechopen.74923.

But, G.WC. & Wu, HY. & Shao, KT. & Shaw, PC.(2020): Rapid detection of CITES-listed shark fin species by loop-mediated isothermal amplification assay with potential for field use. Sci Rep 10, 4455. https://doi.org/10.1038/s41598-020-61150-8.

Cajiga, R. M. (2021): Shark finning legislation and shark welfare. An analysis of the Kristin Jacobs Ocean Conservation Act. DOI https://doi.org/10.5565/rev/da.566.

Cardeñosa, D. & Fields, A. & Fischer, G. & Babcock, A. E. & Shea, S. & Zhang, H. & Feldheim A. K. & Chapman, D. D. (2018): CITES-listed sharks remain among the top species in the contemporary fin trade. https://doi.org/10.1111/conl.12457.

Cardeñosa, D. & Fields, A. & Babcock, A. E. & Shea, S. & Feldheim A. K. & Chapman, D. D. (2020): Species composition of the largest shark fin retail-market in mainland China. https://doi.org/10.1038/s41598-020-69555-1.

Cardeñosa, D. (2019): Genetic identification of threatened shark species in pet food and beauty care products. 1383–1387. https://doi.org/10.1007/s10592-019-01221-0.

Cashion, M. & Bailly, N. & Pauly, D. (2019): Official catch data underrepresent shark and ray taxa caught in Mediterranean and Black Sea fisheries. https://doi.org/10.1016/j.marpol.2019.02.041.

Choo, Y. M. & Choy, P. P. C. & Ip, A. C. Y. & Rao, M. & Huang, D. (2021): Diversity and origins of giant guitarfish and wedgefish products in Singapore. p. 1636-1649. https://doi.org/10.1002/aqc.3553.

Choy, C.P.P. & Wainwright, B.J. (2022): What Is in Your Shark Fin Soup? Probably an Endangered Shark Species and a Bit of Mercury. https://doi.org/10.3390/ani12070802.

Cisneros-Montemayor, M. A. & Barnes-Mauthe, M. & Al-Abdulrazzak, D. & Navarro-Holm, Estrella & Sumaila, R. U. (2013): Global economic value of shark ecotourism: implications for conservation. doi:10.1017/S0030605312001718.

CITES (2021): How CITES works. How CITES works | CITES. [Download on 20.08.2023]

Clark, D. & Artelle, K. & Darimont, C. & Housty, W. & Tallio, C. & Neasloss, D. & Schmidt, A. & Wiget, A. & Turner, N. (2021): Grizzly and polar bears as nonconsumptive cultural keystone species. FACETS 6: 379–393. doi:10.1139/facets-2020-0089.

Clarke, S. & Milner-Gulland, E.J. & Bjorndal (2007): Social, Economic, and Regulatory Drivers of the Shark Fin Trade. In. Marine Resource Economics Volume 22 Number 3. https://doi.org/10.1086/mre.22.3.42629561.

Clua, E. & Buray, N. & Legendre, P. & Mourier, J. & Planes, S. (2011): Business partner or simple catch? The economic value of the sicklefin lemon shark in French Polynesia. https://doi.org/10.1071/MF10163.

Cruz, M. M. & Szynwelski, E. B. & de Freitas, O. R. T. (2021): Biodiversity on sale: The shark meat market threatens elasmobranchs in Brazil. p. 3437-3450. https://doi.org/10.1002/aqc.3710.

Da Silva, TEF. & Lessa, R. & Santana, FM. (2021): Current knowledge on biology, fishing and conservation of the blue shark (Prionace glauca). Neotropical Biology and Conservation 16(1): 71-88. https://doi.org/10.3897/neotropical.16.e58691.

Dent, F. & Clarke, S. (2015): State of the global market for shark products. Ausg. 590. Rome. FAO. 187 pp.https://search.proquest.com/openview/3b5c990099f5140bc44e63e7e691e271/1?pq-origsite=gscholar&cbl=237320. [Download on 14.08.2023]

De Mitcheson, S. Y. & Andersso,A. A. & Hofford, A. Law, S.W. C. & Hau, C.Y. L. & Pauly, L. (2018): Out of control means off the menu: The case for ceasing consumption of luxury products from highly vulnerable species when international trade cannot be adequately controlled; shark fin as a case study. Pages 115-120. https://doi.org/10.1016/j.marpol.2018.08.012.

Dicken, M. L. & Hosking, S. G. (2009): Socio-economic aspects of the tiger shark diving industry within the Aliwal Shoal Marine Protected Area, South Africa. Pages 227-232. https://doi.org/10.2989/AJMS.2009.31.2.10.882.

Doherty, P. & Alfaro-Shigueto, J. & Hodgson, D. & Mangel, J. & Witt, M. & Godley, B. (2014): Big catch, little sharks: Insight into Peruvian small-scale longline fisheries. https://doi.org/10.1002/ece3.1104.

Dulvy, N. & Fowler, S. & White, T. W. et al. (2014): Extinction risk and conservation of the world's sharks and rays. DOI: 10.7554/eLife.00590.

Dulvy, N. & Pacoureau, N. et. al. (2021): Overfishing drives over one-third of all sharks and rays toward a global extinction crisis. Pages 4773-4787.e8. https://doi.org/10.1016/j.cub.2021.08.062.

Dulvy, N. & Simpfendorfer, C. & Davidson, K. N. L. & Fordham, V. S. & Bräutigam, A. & Sant, G. & Welch, J. D. (2017): Challenges and Priorities in Shark and Ray Conservation. Pages R565-R572. https://doi.org/10.1016/j.cub.2017.04.038.

EFSA (2012): Quecksilber in Lebensmitteln – EFSA aktualisiert Bewertung des Risikos für öffentliche Gesundheit. Quecksilber in Lebensmitteln – EFSA aktualisiert Bewertung des Risikos für öffentliche Gesundheit | EFSA (europa.eu). [Download on 16.08.2023]

EU, Oceans and fisheries (2023): Regional fisheries management organisations (RFMOs). Regional fisheries management organisations (RFMOs) (europa.eu). [Download on 21.08.2023]

EU Parliament briefing, 2022 (2022): Illegal, unreported and unregulated (IUU) fishing. Illegal, unreported and unregulated (IUU) fishing (europa.eu). [Download on 15.08.23]

Fauconnet, L. & Catarino, D. & Das, D. & Giacomello, E. & Gonzalez-Irusta, M. J. & Afonso, P. & Morato, T. (2023): Challenges in avoiding deep-water shark bycatch in Azorean hook-and-line fisheries. https://doi.org/10.1093/icesjms/fsac178.

Ferretti, F. & Jacoby, P. M. D. & Pfleger, O. M. & White, D. T. & Dent, F. & Micheli, F. & Rosenberg, A. A. Crowder, B. L. & Block, A. B. (2020): Shark fin trade bans and sustainable shark fisheries. DOI: 10.1111/conl.12708.

Ferrito, V. & Raffa, A. & Rossitto, L. & Federico, C. & Saccone, S. & Pappalardo, A.M. (2019): Swordfish or Shark Slice? A Rapid Response by COIBar–RFLP. https://doi.org/10.3390/foods8110537.

Fields, A. & Fischer, G. & Shea, S. & Zhang, H. & Abercrombie, L. D. & Feldheim A. K. & Babcock, A. E. & Chapman, D. D. (2017): Species composition of the international shark fin trade assessed through a retail-market survey in Hong Kong. p. 376-389. https://doi.org/10.1111/cobi.13043.

Fields, A. & Fischer, G. & Shea, S. & Zhang, H. & Feldheim A. K. & Chapman, D. D. (2020): DNA Zip-coding: identifying the source populations supplying the international trade of a critically endangered coastal shark. p. 670-678. https://doi.org/10.1111/acv.12585.

Fields, T. A. & Abercrombie, L. D. & Eng, R. & Feldheim, K. & Chapman, D. D. (2015): A Novel Mini-DNA Barcoding Assay to Identify Processed Fins from Internationally Protected Shark Species. https://doi.org/10.1371/journal.pone.0114844.

Financial Action Task Force (2014): Guidance on transparency and beneficial ownership. France. Perma | www.fatf-gafi.org. [Download on 14.08.2023]

Freitas, B. (2021): Beneficial Ownership in the Fishing Sector and Links to Corruption. 18ar730zse_BO_fishing_FINAL2.pdf (worldwildlife.org). [Download on 14.08.2023]

Gallagher, J. A. & Hammerschlag, N. (2011): Global shark currency: the distribution, frequency, and economic value of shark ecotourism, Current Issues in Tourism, 14:8, 797-812, DOI: 10.1080/13683500.2011.585227.

Gallagher, J. H. & Vianna, S. M. G & Papastamatiou, P. Y. & Macdonald, C. & Guttridge, L. T. & Hammerschlag, N. (2015): Biological effects, conservation potential, and research priorities of shark diving tourism. Pages 365-379. https://doi.org/10.1016/j.biocon.2015.02.007.

Gonzáles-Mantilla, G. P. & Gallagher, J. A. & León, J. C. & Vianna, M. S. G. (2022): Economic impact and conservation potential of shark-diving tourism in the Azores Islands. https://doi.org/10.1016/j.marpol.2021.104869.

Hareide, N.R. & Carlson, J. & Clarke, M. & Clarke, S. & Ellis, J. & Fordham, S. & Fowler, S. & Pinho, M. & Raymakers, C. & Serena, F. & Seret, B. & Polti, S. (2007): European shark fisheries: a preliminary

investigation into fisheries, conversion factors, trade products, markets and management measures. European Elasmobranch Association.

Hasan, M R. & Chaplin, A. J. & Spencer, P. B. & Braccini, M. (2023): Consumption of shark products: The interface of sustainability, trade (mis)labelling, human health and human rights. p. 777-795. https://doi.org/10.1111/faf.12768.

Hasan, M. R. & Chaplin, A. J. & Spencer, B. P. & Braccini, M. (2023): Consumption of shark products: The interface of sustainability, trade (mis)labelling, human health and human rights. p. 777-795. https://doi.org/10.1111/faf.12768.

Hellberg, S. R. & Isaacs, B. R. & Hernandez, L. E. (2019): Identification of shark species in commercial products using DNA barcoding. Pages 81-88. https://doi.org/10.1016/j.fishres.2018.10.010.

Hobbs, C.A.D. & Potts, R.W.A. & Bjerregaard Walsh, M. & Usher, J. & Griffiths, M. J. (2019): Using DNA Barcoding to Investigate Patterns of Species Utilisation in UK Shark Products Reveals Threatened Species on Sale. https://doi.org/10.1038/s41598-018-38270-3.

IFAW (2022): Supply and demand: the EU's role in the global shark trade. IFAW_Report_EU_role_in_global_shark_trade_FINAL_Feb_2022_HRes.pdf (d1jyxxz9imt9yb.cloudfront.net). [Download on 15.08.23]

Jacquet, L. J. & Pauly, D. (2007): The rise of seafood awareness campaigns in an era of collapsing fisheries. Pages 308-313. https://doi.org/10.1016/j.marpol.2006.09.003.

Jacquet, L. J. & Pauly, D. (2008): Trade secrets: Renaming and mislabeling of seafood. Pages 309-318. https://doi.org/10.1016/j.marpol.2007.06.007.

Jenkinson, I. & et.al. (2021): The rôles of plankton and neuston microbial organic matter in climate regulation. Journal of Plankton Research, Volume 43, Issue 6. Pages 801–821. https://doi.org/10.1093/plankt/fbab067.

Kibria, G. & Harron, Y. (2015): Pollutants Bioaccumulation in Sharks and Shark Seafood Security. (PDF) Pollutants Bioaccumulation in Sharks and Shark Seafood Security (researchgate.net). [Download on 17.08.2023]

Kinnard., K. (2021): Beneficial ownership transparency and natural resource corruption. 937a70so14_TNRC_R4_BOT.pdf (worldwildlife.org).[Download on 14.08.2023]

Lam, V. & Mitcheson, Y. (2010): The sharks of South East Asia – unknown, unmonitored and unmanaged. p. 51-74. https://doi.org/10.1111/j.1467-2979.2010.00383.x.

Liddick, D. (2014): The dimensions of a transnational crime problem: the case of iuu fishing. pages 290–312. https://doi.org/10.1007/s12117-014-9228-6.

Liu, V. Y.S.& Chan, C. L. C. & Lin, O. & Hu, C. S. & Chen, A. C. (2013): DNA Barcoding of Shark Meats Identify Species Composition and CITES-Listed Species from the Markets in Taiwan. https://doi.org/10.1371/journal.pone.0079373.

Malhi, Y. & Lander, T. et. al (2022): The role of large wild animals in climate change mitigation and adaptation. https://doi.org/10.1016/j.cub.2022.01.041.

Marchetti, P. & Mottola, A. & Piredda, R & Ciccarese, G. & Di Pinto, A. (2020): Determining the Authenticity of Shark Meat Products by DNA Sequencing. https://doi.org/10.3390/foods9091194

Martín-López, B. & Montes, C. & Benayas, J. (2007): The non-economic motives behind the willingness to pay for biodiversity conservation. Pages 67-82. https://doi.org/10.1016/j.biocon.2007.06.005.

Mazumder et. al. (2007): Bulletin of Marine Science. Abstracts (ansto.gov.au). [Download on 15.08.23]

Mazzoldi, C. & Bearzi, G. & Brito, C.& Carvalho, I. & Desiderà, E. & Endrizzi, L. et al. (2019): From sea monsters to charismatic megafauna: Changes in perception and use of large marine animals. PLoS ONE 14(12): e0226810. https://doi.org/10.1371/journal.pone.0226810.

Mitchesona, Y. & Andersson, A. & Hoffordd, A. et. al. (2018): Out of control means off the menu: The case for ceasing consumption of luxury products from highly vulnerable species when international trade cannot be adequately controlled; shark fin as a case study. https://doi.org/10.1016/j.marpol.2018.08.012.

Myers, R. & Worm, B. (2003): Rapid worldwide depletion of predatory fish communities. https://doi.org/10.1038/nature01610.

Niedermüller, S. & Ainsworth, G. & de Juan, S. & Garcia, R. & Ospina-Alvarez, A. & Pita, P. & Villasante, S. (2021): The shark and ray meat network. WWF_MMI_Global_shark__ray_meat_trade_report_2021_lowres.pdf (panda.org). [Download on 20.08.2023]

Oceana (2022): 'Bycatch' no more, blue shark is a $411 million fishery that deserves proper management. oceana_blueshark_summary_dec2022.pdf. [Download on 21.08.2023]

Oliver, S. & Braccini, M. & Newman, J. S. & Harvey, S. J. (2015): Global patterns in the bycatch of sharks and rays. Pages 86-97. https://doi.org/10.1016/j.marpol.2014.12.017.

Ostrander, G. & Cheng, K. & Wolf; J. & Wolfe, M. (2004): Shark Cartilage, Cancer and the Growing Threat of Pseudoscience. https://doi.org/10.1158/0008-5472.CAN-04-2260.

Pacoureau, N. & Rigby, C.L. & Kyne, P.M. et al. (2021): Half a century of global decline in oceanic sharks and rays. https://doi.org/10.1038/s41586-020-03173-9.

Pardo, A. M. & Jimenez, E. & Viðarsson, R. J. & Ólafsson, K. & Ólafsdóttir, G. & Daníelsdóttir, K. A. & Pérez-Villareal, B. (2018): DNA barcoding revealing mislabeling of seafood in European mass caterings. Pages 7-16. https://doi.org/10.1016/j.foodcont.2018.04.044.

Partin, T. G. & Gonzalez, A. G. & Burnham-Curtis, K. M. (2022): Sharks on a plane: Large shark fin seizure shines light on shark exploitation. https://doi.org/10.1016/j.fsiae.2022.100055.

Pazartzi, T. & Siaperopoulou, S. & Gubili, C. & Maradidou, S. & Loukovitis, D. & Chatzispyrou, A. & Griffiths, A.M. & Minos, G. & Imsiridou, A. (2019): High levels of mislabeling in shark meat – Investigating patterns of species utilization with DNA barcoding in Greek retailers. Pages 179-186. https://doi.org/10.1016/j.foodcont.2018.11.019.

Pearson, H. & Savoca, M. & Costa, D. & Villaseñor-Derbez, J. & Wing, S. & Joe Roman et. al. (2022): Whales in the carbon cycle: can recovery remove carbon dioxide?. https://doi.org/10.1016/j.tree.2022.10.012.

Pincinato, M. B. R. & Gasalla, A. M. & Garlock, T. & Anderson, L. J. (2022): Market incentives for shark fisheries. https://doi.org/10.1016/j.marpol.2022.105031.

Porcher, I.F. & Darvell, B.W. (2022): Shark Fishing vs. Conservation: Analysis and Synthesis. Sustainability. https://doi.org/10.3390/su14159548.

Reilly, A. (2018): OVERVIEW OF FOOD FRAUD IN THE FISHERIES SECTOR. No. 1165. OVERVIEW OF FOOD FRAUD IN THE FISHERIES SECTOR - ProQuest. [Download on 20.08.2023]

Ressurreição, A. & Cardigos, F. & Giacomello, E. & Leite, N. & Oliveira, F. & Kaiser, J. M. & Gonçalves, J. & Santos, S. R. (2022): The value of marine ecotourism for an European outermost region. https://doi.org/10.1016/j.ocecoaman.2022.106129.

Riesgo, L. & Sanpera, C. & García-Barcelona, S. & Sánchez-Fortún, M. & Coll, M. & Navarro, J. (2023): Understanding the role of ecological factors affecting mercury concentrations in the blue shark (Prionace glauca). https://doi.org/10.1016/j.chemosphere.2022.137642.

Roberson, L.A. & Watson, R.A. & Klein, C.J. (2020): Over 90 endangered fish and invertebrates are caught in industrial fisheries. https://doi.org/10.1038/s41467-020-18505-6.

Rose, D. (1996): An overview of world trade in sharks and other cartilaginous fishes. https://policycommons.net/artifacts/1373118/an-overview-of-world-trade-in-sharks-and-other-cartilaginous-fishes/1987339/. CID: 20.500.12592/3850z0. [Download on 15.08.23]

Shamir, Z. Z. & Shamir, Z. S. & Becker, N. & Scheinin, A. & Tchernov, D. (2019): Evidence of the impacts of emerging shark tourism in the Mediterranean. https://doi.org/10.1016/j.ocecoaman.2019.104847.

Shea, K. H. & Wai Lun To, A. (2017): From boat to bowl: Patterns and dynamics of shark fin trade in Hong Kong — implications for monitoring and management. Pages 330-339. https://doi.org/10.1016/j.marpol.2017.04.016.

Sherman, C.S. & Heupel, M.R. & Moore, S.K. & Chin, A. & Simpfendorfer, C.A. (2020): When sharks are away, rays will play: effects of top predator removal in coral reef ecosystems. Mar Ecol Prog Ser 641:145-157. https://doi.org/10.3354/meps13307.

Simpfendorfer, C. A. & Dulvy, K. N. (2017): Bright spots of sustainable shark fishing. DOI:https://doi.org/10.1016/j.cub.2016.12.017.

Song, A. M. & Scholtens, J. & Barclay, K. & Bush, R. S. & Fabinyi, M. & Adhuri, S. D. & Haughton, M. (2020): Collateral damage? Small-scale fisheries in the global fight against IUU fishing. DOI: 10.1111/faf.12462.

Storelli, A. & Barone, G. & Garofalo, R. & Busco, A. & Storelli, M.M. (2022): Determination of Mercury, Methylmercury and Selenium Concentrations in Elasmobranch Meat: Fish Consumption Safety. https://doi.org/10.3390/ijerph19020788.

Sumaila, U. R. & Bellmann, C. & Tipping, A. (2016): Fishing for the future: An overview of challenges and opportunities. Pages 173-180. https://doi.org/10.1016/j.marpol.2016.01.003.

Van Houtan, K. & Gagné, T. & Reygondeau, G. & Tanaka, K. & Palumbi, S. and Jorgensen, S. (2020): Coastal sharks supply the globalshark fin trade. Biol. Lett.16: 20200609. http://dx.doi.org/10.1098/rsbl.2020.0609.

Vianna, G.M.S. & Meekan, M.G. & Pannell, D.J. & Marsh, S.P. & Meeuwig, J.J. (2012): Socio-economic value and community benefits from shark-diving tourism in Palau: A sustainable use of reef shark populations. Pages 267-277. https://doi.org/10.1016/j.biocon.2011.11.022.

Villate-Moreno, M. & Pollerspöck, J. & Kremer-Obrock, F. & Straube, N. (2021): Molecular analyses of confiscated shark fins reveal shortcomings of CITES implementations in Germany. Volume 3, Issue 6. https://doi.org/10.1111/csp2.398.

Wainwright, B. J. & Ip, Y. C. A. & Neo, M. L. & Chang, M. J. J. & Gan, Z. C. & Clark-Shen, N. & Huang, D. & Roa, M. (2018): DNA barcoding of traded shark fins, meat and mobulid gill plates in Singapore uncovers numerous threatened species. https://doi.org/10.1007/s10592-018-1108-1.

Walker, P. & Pinto, C. (2019): Review of the implementation of the shark finning regulation and assessment of the impact of the 2009 European Community Action Plan for the Conservation and Management of Sharks (STECF-19-17). doi:10.2760/487997

Walls, R.H.L. & Dulvy, N.K. (2021): Tracking the rising extinction risk of sharks and rays in the Northeast Atlantic Ocean and Mediterranean Sea. https://doi.org/10.1038/s41598-021-94632-4.

Ward, P. & Myers, R. (2005): SHIFTS IN OPEN-OCEAN FISH COMMUNITIES COINCIDING WITH THE COMMENCEMENT OF COMMERCIAL FISHING. p. 835-847. https://doi.org/10.1890/03-0746.

WHO (2017): Mercury and health. Mercury and health (who.int). [Download on 15.08.2023]

Worm, B. & Davis, B. & Kettemer, L. & Ward-Paige, C. A. & Chapman, D. & Heithaus, R. M. & Kessel, S. T. & Gruber S. H. (2013): Global catches, exploitation rates, and rebuilding options for sharks. Pages 194-204. https://doi.org/10.1016/j.marpol.2012.12.034.