A photograph of a shark swimming in the water, viewed from below. The shark is in the center of the frame, swimming towards the left. Above the shark, a diver's hands are visible, holding a camera that is pointed towards the shark. The water is clear and blue, with some light rays visible. The overall scene is underwater.

How to save a predator

By Natalie Klein

As one of the most feared ocean predators, it is difficult to convince anyone that sharks actually need our protection – rather than us needing protection from them.

There are over 500 different species of sharks,¹ though only a small number would be recognised as household names. In Australia, 'sharks' are commonly eaten, sometimes under the euphemistic name of 'flake', from the local fish and chips shop. In other countries, particularly in China and throughout south east Asia, sharks are prized for their fins, which are used to make shark fin soup. The demand for sharks has led to recent estimates that 100 million individual sharks are killed every year.²

The fate of sharks in Australia has been brought into the spotlight recently following the decision of the Western Australian government to conduct a shark cull following the deaths of beach-goers in that state.

Although feared for their attacks in Australia, sharks are a pressing conservation and fisheries management issue. It is a multifaceted one, requiring consideration from scientific, economic, social, political and legal perspectives. The legal dimensions encompass other factors but international laws must be in place to improve the overall conservation status of shark species.

THE INTERNATIONAL LEGAL FRAMEWORK

The international regulation of sharks falls within the general law of the sea. The first question that has to be asked, irrespective of whether the issue is oil leaking from a vessel, a pirate attack, the rescue of asylum seekers or protest activities, is where is it happening? We need to know where an activity occurs to understand which country has rights and responsibilities over the vessel, the individuals involved and the activity concerned.

For sharks, this situation is complicated because they are not necessarily found in one location. Some are coastal dwellers and never swim far during their lifetime; others are highly migratory and will swim hundreds of kilometres for feeding and breeding. The more boundaries a shark crosses, the more countries have roles to play. In Australia, we also have to address the Offshore Constitutional Settlement³ and sharks swimming between federal and state waters.

For any fishing activity, fundamental rules relating to conservation and management are enshrined in the UN Convention on the Law of the Sea (UNCLOS).⁴ On the high seas, the area furthest from any country, there are general obligations to conserve and manage marine species,⁵ and for states to have responsibility for fishing vessels that are registered to them and fly their flag.⁶ Within a coastal state's Exclusive Economic Zone, which may extend up to 200 nautical miles from the shore, it falls to the coastal state to determine the maximum sustainable yield of any species and set an appropriate total allowable catch.⁷ That coastal state may decide which vessels from other countries may be licensed to fish in its waters and may arrest and prosecute fishing vessels that do not adhere to national laws regulating fishing activities.⁸ In the territorial sea and internal waters, those closest to the state and over which it exercises sovereignty, the UN Convention does not specify any particular conservation requirements: those decisions are for the state to determine. It is nonetheless in a coastal state's

interests to protect and use sustainably those resources most accessible to it.

Ultimately, the UN Convention provides only a general legal framework and more specific rules must be sought from other sources. The main legal instrument addressing all shark species (and extending to rays and chimeras) is an International Plan of Action (IPOA-Sharks) that was drafted under the auspices of the UN Food and Agriculture Organisation.⁹ The IPOA-Sharks is a non-binding instrument and so no state violates international law if it does not adhere to its terms. The relevance of the IPOA-Sharks is that it calls on all states to assess the status of sharks, to determine requirements to ensure the sustainable harvest of sharks and to adopt regional and national plans of action for conservation and management.

Two treaties that do impose binding obligations on its parties and provide a mechanism to conserve sharks are the Convention on the International Trade in Endangered Species (CITES)¹⁰ and the Convention on Migratory Species (CMS).¹¹ Both of these treaties operate on a listing system whereby particular species are identified as in greatest need of protection due to their small numbers and they are listed on an Appendix to the treaty. The inclusion on these lists then requires states to take certain steps *vis-à-vis* those species. In relation to CITES, species listed on Appendix 1 may not be subjected to international trade unless a carefully prescribed permit scheme is followed. A listing on Appendix 1 of CMS prevents states in which the species are found (including their maritime areas) from taking those species. A listing on other appendices imposes lesser restrictions on state action but still aims to improve the conservation status of the relevant species.

Each of these treaties has been brought to bear for the protection of a small number of shark species. In relation to CITES, no shark species has yet qualified for a listing on Appendix 1, but the great white shark, whale shark and basking shark have been listed on Appendix 2 for ten years.¹² In 2010, there was scientific evidence to support the listing of an additional four species but insufficient political will.¹³ States have long been reticent to list commercially exploitable marine species, as there is a preference for determining appropriate management plans rather than banning international trade. It was not until 2013 when additional scientific evidence was made available that a sufficient number of states agreed to list six new species under CITES.¹⁴

A similar situation has occurred under the CMS. In that regime, the great white, whale and basking sharks are afforded protection under Appendix 1, and an additional four species as well as manta rays are protected under Appendix 2. Australia must act under an exception to the listing of great white sharks any time a shark hunt of this species is triggered because of an attack on a swimmer or surfer. Western Australia would need to be relying on this loophole in authorising any cull of great white sharks so that Australia is not put in breach of its international obligations.

In addition to the listing process under the CMS, states have formulated a non-binding Memorandum of Understanding (MoU) specifically for sharks listed under >>

that treaty.¹⁵ This document sets out a number of steps that states can take to improve the regulation of sharks, and includes specific goals under a Conservation Plan, which was adopted as an Annex in 2012. The MoU has provided a specific focus on sharks in the international arena but is limited like the IPOA-Sharks because of its non-binding status and is further limited because of the small number of shark species that fall within its scope.

A further source of international law relevant to the conservation and management of sharks is being developed in Regional Fisheries Management Organisations (RFMOs). No such organisation has been specifically created for sharks, but as sharks have been bycatch in the fisheries covered by these RFMOs (predominantly different species of tuna), they have become a forum for the interested states to take steps to improve management measures for shark species found within the region. These can best be described as nascent,¹⁶ which is worrying, given the rapid decline of shark populations and the length of time needed for their recovery.

THE GAPS

The international legal regime has a number of problems. First, the binding obligations that exist under the UN Convention are general in nature and stipulations beyond broad requirements of co-operation are needed, given the plight of so many shark species. The international regulation of fishing has generally presented significant challenges because of the inability of many coastal states to police their large maritime zones and the opportunity this has presented for illegal fishing by vessels that are not closely monitored by the states in which they are registered.

Second, any more specific requirements imposed on states apply only to a very small number of species. Undoubtedly, these are species in dire need of protection but there are many more considered to be endangered or vulnerable. Unfortunately, the status of nearly half of all shark species is yet to be determined and much more scientific research is needed to provide information to inform conservation and management decisions.

Third, the specific prohibitions that are set forth under the CITES and CMS regimes are binding only upon the states that are parties to those treaties and then contain their own loopholes. While each treaty does have a large number of states party to them (178 for CITES and 119 for CMS), there is an option open to states to object on an individual basis to particular listings of species and that state is then not bound by the restriction in question. With the new listing of shark species in 2013, Japan sought to enter such a reservation but, notably, China did not do so.¹⁷ China's decision is significant because it is one of the greatest consumers of shark products.

Fourth, sharks are not necessarily a target species in fishing operations and regulations are more likely to focus on those species that are targeted. Hence, the mandates of many of the RFMOs do not extend to sharks: it may be that requiring these organisations to adhere to certain management measures will entail amending the organisations' constitutive instrument. Reopening treaty negotiations is generally avoided because it would involve destabilising the original

compromise achieved to conclude the treaty in the first instance. Instead, sharks may be taken as bycatch and so not specifically accounted for in fishing data.¹⁸ Sharks as bycatch present an attractive economic opportunity to fishing vessels, especially because of the value of their fins.

Fifth, the primary threat to sharks is the demand for their fins. It may be a lucrative business for fishing operators where the sharks caught have their fins sliced off and the carcass is then thrown overboard. The fins take up less space to be stored on the vessel than the entire shark. However, the sharks thrown back into the water may still be alive and ultimately drown because their fins enable them to breathe. The barbaric nature of this act has prompted actions by different countries and regional organisations, in some instances banning the harvesting of fins entirely or setting requirements around the finning practice.¹⁹ A global ban has yet to be established.

Finally, and highlighted by the finning problem, the measures being taken are inconsistent. Some states have acted to outlaw any harvesting of sharks from their maritime areas (notably the Pacific Island nations),²⁰ while countries at the other end of the spectrum remain focused on the current economic return and are unwilling to support or take steps that would reduce the existing shark catch by their fishing vessels. While regional organisations are taking steps, they are mixed in relation to what species are covered, whether the measures are binding or not and, if binding, which states are bound.

There are incentives for states to take action and remedy these gaps and deficiencies. Clearly, there is an economic interest in ensuring that any fishery is managed in such a way that stocks will remain available for harvesting well into the future. Beyond the sustainability of shark fisheries themselves, shark species are commonly apex predators. Sitting at the top of the food chain, removing a significant number of these predators allows the predator next down the food chain to increase in numbers and potentially consume excessive numbers of the next species in the food chain. The economic ramifications of this process may create the necessary political support for vital measures to be taken.

LESSONS FROM WHALES?

In deciding which measures may best serve the survival of shark species, the experience of conserving and managing other marine species may be valuable. The protection of whales sets an interesting precedent, even though the public appeal of sharks does not compare with that of whales. It is evident that Save Fluffy the Great White Shark has not had the same traction as the Save the Whales campaign. In Australia, the recent protests in response to Western Australia's proposed cull may indicate a change in sentiment. However, sharks are more commonly demonised when there is a rare attack on a beach-goer. The persistence of these attitudes stand in distinct contrast to those expressed towards whales, which are not generally regarded as threats to humans, and are commonly admired for their intelligence, communication skills and sheer size.

Yet in terms of regulation, two features are worth noting.

First, whales have supported a growing tourism industry, and shark ecotourism has also been developing with tourism sites now in more than 40 different countries. Australia had some of the first shark tourism sites, with cage-diving in South Australia a key example. Swimming with whale sharks at Ningaloo Reef in Western Australia has also gained popularity in recent years.²¹ Researchers have been able to show that sharks, like whales, now hold greater value to local communities alive than dead because of the tourism industry that builds up around swimming and diving with marine species.²² Indeed, one recent study has shown that the value of the industry is likely to double in the next two decades.²³

Supporting these industries from a regulatory perspective has involved the institution of licensing schemes for the operators, resolution of insurance issues, and the establishment of codes of conduct for operators as well as the tourists interacting with the animals.²⁴ Governments have also supported the industries by establishing marine-protected areas (MPAs) (or known as marine parks) to ensure the protection of the relevant habitats. In Australia, the Western Australian and federal governments have acted in concert to establish marine parks in Ningaloo Reef. The site also has international protection through its listing by UNESCO with World Heritage status.²⁵ The species themselves may also be protected through bans on commercial and recreational catches, or at least reducing the number of species that may be harvested. These regulations have been developed both in relation to the whale-watching industry as well as in relation to shark ecotourism.

A second regulatory feature with respect to whales is that all species are governed by a specific international treaty, which is overseen by its own international commission, namely the International Whaling Commission (IWC), created under the International Convention for the Regulation of Whaling.²⁶ There is no equivalent treaty or organisation for sharks. Such a development may seem like an obvious step in bringing greater attention to the conservation status of shark species as well as providing a mechanism for adopting global measures.²⁷ Yet it is clear that the treaty regime for whales has not been very successful. Subsequent to the creation of the IWC, the number of whales dropped so dramatically that a moratorium on commercial whaling had to be adopted.²⁸ Since the introduction of the moratorium, Japan has steadily increased its take of whales for the purposes of scientific research, prompting the allegation that Japan is in fact engaged in unlawful commercial whaling.²⁹ It may be that states will learn from these difficulties so as not to repeat the experience *vis-à-vis* sharks.

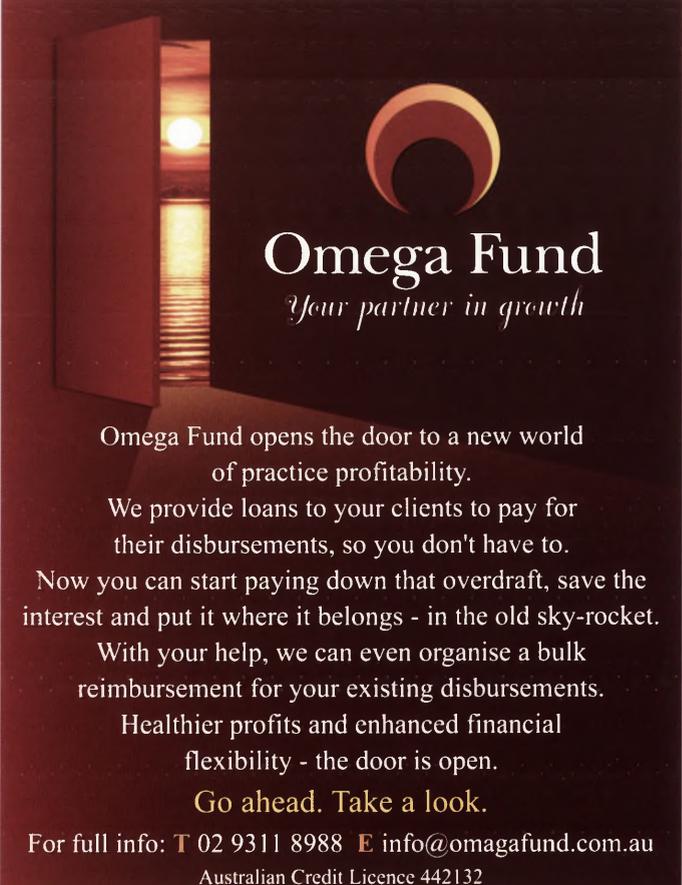
WHAT IS NEEDED?

In the absence of a global treaty and organisation, there are instead a range of legal tools that could be utilised to improve the conservation and management of many shark species. The experiences from shark ecotourism provide some useful ideas. Clearly, the successful implementation of MPAs, or sanctuaries, is one mechanism that may provide some respite for shark populations. Spatial management is more

challenging for highly migratory species, and one response is a network of MPAs. Another response is to list more species under the CMS and its complementary MoU, as well as under CITES.

A vital avenue concerns fishing regulations. The bluntest response is to ban the harvest of shark species. While this approach is easier to implement than determining what quantity may be sustainably fished, it does not solve the problem of bycatch. Sharks caught as incidental catch in fishing operations that are otherwise targeted on another species are a significant threat to shark mortality. To reduce shark bycatch, regulations on the type of fishing equipment may be necessary, as some nets and lines are better able to exclude sharks than others.

Any of these decisions about the better laws, regulations and policy must be informed by scientific research. There is a tremendous amount of research still to be done. There is insufficient data about the numbers of many shark species, and more information is required about the role of sharks in ecosystems as well as their life history data; population structure and dynamics; geographic extent of stocks; patterns of habitat use; migrations; and diets. As research is ongoing and some projects span a number of years, the regulatory tools must allow for adaptive management. That is, a mechanism is required that allows the regulations to change in response to improved knowledge about sharks, including their habits and habitats. >>



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While such adaptive management is important, it should not come at the expense of consistency and coherency of the laws and regulations. A 'tragedy of the commons' scenario might result if one country vigorously pursues conservation strategies only for another country to continue harvesting apace and thwart those efforts. There should be a focused effort to close the gaps that remain in the existing legal regimes, and to ensure that the laws not only work at the international level but are also integrated across other levels of governance. It may be the case that laws in place at a local or national level reflect best practice and these should be endorsed by other countries and in regional organisations, and ultimately reflected in international agreements. Vertical integration, with laws in place at different levels of government, is therefore as important as horizontal integration, which necessitates consistency across actors in relation to a particular issue.³⁰

From a more practical perspective, a critical requirement is that the laws in place be implemented and enforced. There may be no point in establishing a new international treaty and creating a new organisation if it does not result in states adhering to the terms of the agreement or the decisions of the organisation. International laws need to be implemented into national or state laws so that they can be actioned by the relevant officials and other stakeholders. Once operationalised in this way, the laws must be enforced. Enforcement has long posed a problem for international fisheries, with some in the fishing industry focused on short-term financial gain and able to operate in areas of the ocean that are not frequently or easily policed. This level of monitoring may be particularly difficult for some developing countries that lack the resources to oversee all activities that may be undertaken in their maritime areas.

Ultimately, these changes will be made only if the political will exists to do so. Governments will need to recognise that there is a critical conservation issue at stake and that they have an interest in taking steps to remedy the problem. There is of course an economic incentive where fisheries collapse and fishing industries are no longer viable. In democratic countries, governments may respond to constituents' concerns, which we have seen in Australia in the whaling context. For sharks to gain this popular support, consumers must recognise the problem. Perhaps a positive outcome of the shark cull in Western Australia has been a greater focus on shark conservation. Shark advocates have also made progress in shaping public opinion in their opposition to finning practices and the consumption of shark fin soup.³¹ Stopping finning does not prevent sharks being killed in large numbers; it simply changes the way a shark is killed. However, it may have the added effect of lessening demand. In the longer term, there must be support for the idea of saving sharks rather than fearing them or demonising them as predators of the oceans. ■

Notes: **1** The IUCN Red List estimates over 1,000 species of chondrichthyans, which includes sharks, skates, rays and chimaeras. 'The IUCN Red List of Threatened Species', available at: www.iucnredlist.org. Scientists commonly put the number of shark

species at 500, but there is further taxonomic research needed. **2** Boris Worm et al, 'Global Catches, Exploitation Rates and Rebuilding Options for Sharks (2013) 40 *Marine Policy* 194. **3** This is an arrangement between the Commonwealth and state governments, which divides responsibility for particular maritime matters in Australia's territorial sea. Generally, the states have responsibility for all activities up to three nautical miles from the coast. This settlement was reached following the Seas and Submerged Lands Case. *New South Wales v Commonwealth* (1975) 135 CLR 337. **4** United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994) **5** *Ibid*, articles 116-120. **6** *Ibid*, articles 92 and 94. **7** *Ibid*, articles 56, 61 and 62. **8** *Ibid*, article 73. **9** FAO (1999). *International Plan of Action for the Conservation and Management of Sharks*. Retrieved from <http://www.fao.org/fishery/ipoa-sharks/npoa/en>. **10** Convention on International Trade in Endangered Species of Wild Fauna and Flora opened for signature 3 March 1973, 993 UNTS 243 (entered into force 1 July 1975). **11** Convention on the Conservation of Migratory Species of Wild Animals, opened for signature 23 June 1979, 1651 UNTS 333; 19 ILM 15 (entered into force 1 November 1983). **12** The great white shark was listed in 2005, the basking shark and the whale shark in 2003. **13** 'CITES conference ends without new sharks in its net', available at: <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=617&ArticleID=6515&l=en>. **14** 'CITES conference takes decisive action to halt decline of tropical timber, sharks, manta rays and a wide range of other plants and animals', Press Release, 14 March 2013, available at: http://www.cites.org/eng/news/pr/2013/20130314_cop16.php. **15** Memorandum of Understanding on the Conservation of Migratory Sharks. Retrieved from http://www.cms.int/species/sharks/MoU/Migratory_Shark_MoU_Eng.pdf. **16** See EJ Techera, N Klein, 'Regulatory Tools for Shark Conservation and Management: Improving Legal Governance and Harnessing Eco-tourism' in Owen P Jenkins (ed), *Advances in Zoology Research*, Volume 3 (Nova Science Publishers, 2012), pp1-26. **17** 'CITES Getting Ready for Sharks and Rays', Press Release, 14 September 2013, available at: http://www.cites.org/eng/news/pr/2013/20130914_shark_ray.php. **18** See Worm, above note 2. **19** See EJ Techera, 'Fishing, Finning and Tourism: Trends in Pacific shark conservation and management' (2012) 27(3) *International Journal of Marine and Coastal Law* 1-25. **20** *Ibid*. **21** See EJ Techera, N Klein, 'The Role of Law in Shark-Based Eco-Tourism: Lessons from Australia' (2013) 39 *Marine Policy* 21-28. **22** See, for example, G Vianna et al, 'Wanted Dead or Alive? The Relative Value of Reef Sharks as a Fishery and an Ecotourism Asset in Palau', available at: http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/Palau_Shark_Tourism.pdf. **23** Andres Cisneros-Monetmayor, et al, 'Global economic value of shark ecotourism: implications for conservation' (2013) 47 *Oryx* 381. **24** Techera and Klein, see note 21 above. **25** Jessica Campion, 'Ningaloo given World Heritage status', 28 June 2011, available at: <http://www.australiangeographic.com.au/journal/ningaloo-given-world-heritage-status.htm>. **26** International Convention for the Regulation of Whaling (ICRW), 2 December 1946, 161 UNTS 72. **27** See A Herndon, VF Gallucci, D DeMaster, W Burke, 'The case for an international commission for the conservation and management of sharks (ICCMS)' (2010) 34 *Marine Policy* 1239-48. **28** A zero-catch quota was instituted in the mid-1980s. ICRW, Schedule, para 10(e). **29** *Whaling in the Antarctic (Australia v Japan)*, International Court of Justice, application instituting proceedings filed 31 May 2010. **30** See EJ Techera, N Klein, 'Fragmented Governance: Reconciling Legal Strategies for Shark Conservation and Management' (2011) 35 *Marine Policy* 73-78. **31** Bettina Wassener, 'China Says No More Shark Fin Soup at State Banquets', *New York Times*, July 3, 2012: http://www.nytimes.com/2012/07/04/world/asia/china-says-no-more-shark-fin-soup-at-state-banquets.html?_r=0.

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