



HUMANE SOCIETY INTERNATIONAL

Shark Conservation

Policy Recommendations for the Australian Government

Shark populations are in trouble in Australia and around the world. IUCN states that of the 1,046 species of sharks and their relatives (class Chondrichthyes) approximately 17% are in threatened categories (critically endangered, endangered and vulnerable), and 13% are considered 'near threatened' and may reach the thresholds for a threatened category in the near future if current threats are not reduced (Polidoro et al. 2008). The IUCN has further found that 11 of the 21 species of oceanic pelagic sharks and rays that have been studied are threatened with extinction (Dulvy et al. 2008), with 32% of the 64 known species of pelagic sharks being threatened globally, a further 24% Near Threatened, 19% of Least Concern and 25% being Data Deficient (Camhi et al. 2009). Myers and Worm (2003) estimated that large predatory fish biomass (including sharks) is only about 10% of pre-industrial levels, and scientists from the Future of Marine Animal Populations (FMAP) project of the Census of Marine Life program concur that up to 90% of all large predatory fish have been depleted (Census of Marine Life 2008).

Data from beach meshing programs have also revealed declining shark populations in Australia. Queensland's Shark Control Program experienced a downward trend in the catch of all sharks in the 14 years to 2006 (Lane 2006). Similarly, catches of sharks in NSW shark nets have dramatically decreased in the last 30 years (FSC 2005). This has been ascribed to falling shark population numbers (Paxton undated, SOCOG 1999).

Against this backdrop, demand for shark products is escalating. Dried shark fin can fetch over \$300/kg on Asian markets (Larcombe and Beggs 2008) and its economic value is driving the decimation of global shark populations. Sharks caught in Australian Commonwealth and State fisheries are directly supplying this market. Australia exports approximately 230 tonnes of shark fin annually, conservatively estimated to be equivalent of 10,000 adult sharks (Margetts 2008). This estimate is based on a low fin to weight ratio, and the largest possible size of shark. On this basis it is more likely that the actual number of sharks killed to supply overseas markets is much higher.

Despite the increasing demand for shark products, legal and policy instruments to stem the decline in their populations are lacking in Australia and internationally.

Humane Society International (HSI) submits the following policy recommendations to the Australian Government to strengthen legislation and policies for shark^a conservation at the national and international level. The proposals would see Australia advance forward as a leader in international shark conservation.

Australian law & policy for sharks

End targeted shark fishing in Australia

Sharks are inherently vulnerable to over-fishing because they grow slowly, are late to mature and produce relatively few young (Lack and Sant 2008). In terms of their reproductive biology, sharks are more akin to marine mammals than fish. It is therefore not surprising that no jurisdiction in Australia has been able to manage targeted shark fishing and achieve ecological sustainability^b. In fact, the Marine Stewardship Council, which recognises and certifies well-managed fisheries, has not accredited fishing for any shark species in Australia as ecologically sustainable^c, nor have they for any fishery targeting sharks world-wide. Moreover, the Australian Sustainable Seafood Guide produced by the Australian Marine Conservation Society recommends against the consumption of shark species on sustainability grounds. In addition, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) has prohibited the targeting of sharks in CCAMLR waters due to concerns over the wasteful practice of shark finning, and increased fishing for exceptionally slow growing shark species (CCAMLR 2006).

Yet exploitation rates of sharks are increasing. On a global scale Lack and Sant (2008) note that catch and trade of sharks have continued to trend upward reflecting strong market demand for some shark meat and fins together with increased take of shark bycatch as a result of expansion, in particular, of longline fisheries for tuna. The same trend is in evidence in Australia. During 2000-2004 shark fishing in Queensland alone increased four-fold with a massive 1240 tonnes of shark being landed in 2004 (Qld DPI&F Strategic Fisheries Report). The actual number of sharks killed is likely to be much bigger as this figure does not include discards of sharks, or cryptic mortality of sharks and rays killed by fishing gear but not seen or recorded by fishers. Ferreti et al (2010) refer in their paper to further work which noted that in South-East Australia, sharks made up almost 50% of the total fish biomass in offshore trawling fisheries, however 20 years later, catch rates were reduced by 80%.

^a Sharks, skates, rays and chimaeras (collectively referred to as sharks).

^b School shark has been repeatedly classified as over-fished in annual Fishery Status Reports from the Bureau of Rural Sciences. While gummy shark is not currently classified as overfished, recent assessments provide some indication of a slow decline in pup abundance since the 1980s (Larcombe & McLoughlin 2007). It is possible that a sustainable and economically viable gummy shark fishery might thwart school shark from rebuilding to target levels recommended by the [then] Draft Commonwealth Harvest Strategy Policy (Larcombe & McLoughlin 2007) thus the fishery overall would not be ecologically sustainable. The blue shark, the world's most abundant and heavily fished pelagic shark, stayed in the threat category Near Threatened. Scientists noted declines of 50-70% in the North Atlantic and concern over the lack of conservation measures, but could not reach consensus that the species is Threatened with extinction *on a global scale*

^c None have applied to date.

As well as fishing pressures, sharks are particularly susceptible to changes in environmental parameters. Climate change and the acidification of the oceans present further uncertainties for the future of our fisheries, and increases in water temperature, coupled with changes in oceanic chemistry, stratification and circulation patterns are predicted to result in significant alterations to marine ecosystems (Robinson et al. 2005, Hobday et al. 2006, Harley et al. 2006, Easterling et al. 2007, Hobday et al. 2008). Higher-order predators, such as sharks, will be particularly vulnerable to changes evidenced in lower trophic levels.

Despite these well-documented ecological issues, Commonwealth and state / territory-managed fisheries routinely catch sharks, as both target and bycatch species, that are listed as threatened by the IUCN. These shark species and their IUCN conservation status are listed in Annex 1.

New South Wales

Numerous shark species are targeted in the NSW Ocean Trap and Line, and Ocean Trawl Fisheries, and the status of stocks of all species is classified as “undefined” by the NSW Department of Primary Industries, with the exception of gummy shark which is classified as “fully fished” (NSW DPI&F 2007). Main target species in the Ocean Trap and Line Fishery include gummy, hammerhead, mako, tiger, whaler and wobbegong sharks, while the Ocean Trawl Fishery targets angel sharks, dogfish, ghostsharks, and sawsharks. This is despite the significant species identification issues that exist for angel sharks, dogfish and whaler sharks, and the lack of detailed stock assessments for angel sharks, sawsharks or wobbegong sharks (NSW DPI&F 2007).

Furthermore, there are serious conservation issues for the vast majority of these target species. Several species of dogfish are listed as Vulnerable by the IUCN and Harrison’s dogfish as Critically Endangered; scalloped and great hammerheads are classified as Endangered; short-fin and long-fin mako sharks and smooth hammerheads are listed as Vulnerable; tiger sharks, bull sharks, dusky whalers, ornate and spotted wobbegongs are being classified as either Vulnerable or Endangered; and, bronze whalers, common blacktips, sandbar sharks and spinner sharks are listed as Near Threatened (IUCN 2008, NCC 2008). Whaler sharks comprise the largest commercial catch of sharks in NSW, recently skyrocketing to 440 t in 2006/07 from an average of 165 t landed per year between 1997/98 and 2005/06 (NSW DPI&F 2007).

Queensland

The majority of targeted shark fishing in Queensland’s jurisdictional waters occurs in the East Coast Inshore Fin Fish Fishery. This fishery operates along Queensland’s east coast and extends through the Great Barrier Reef World Heritage Area. Recorded commercial shark catch in this fishery plummeted from 1298t in 2003 to 603t in 2006, however by 2008 catch had crept back up to 1084t (Qld DEEDI, 2010; Qld DPI&F 2007a). The catch is dominated by whaler sharks such as the blacktip and spot-tail whalers, and the endangered scalloped hammerhead shark is also caught, as part of the 22 species of sharks observed caught in the fishery (Qld DEEDI, 2010; Qld DPI&F 2007a). The IUCN conservation status of Chondrichthyan species caught in this fishery is shown in Annex 2.

Following concerns over recent harvesting trends particularly of sharks, the Qld DPI&F introduced a number of new management measures in 2009, including a new shark fishery licensing scheme allowing commercial fishers to target sharks as their main catch, up to a total annual limit of 600t across the fishery. It is estimated that this volume equates to 75,000 sharks within this one fishery alone (AMCS 2008). This is despite the Qld DPI&F acknowledging that the Great Barrier Reef Marine Park Authority have themselves suggested that there should not be a shark fishery on the Great Barrier Reef at all because it can not be clearly demonstrated that it is selective and sustainable (Qld DPI&F 2007b).

Western Australia

The Western Australian shark fisheries are managed as four separate zones in two bioregions. The WA North Coast Shark Fishery (WANCSF) and Joint Authority Northern Shark Fishery (JANSF) operate in the North Coast Bioregion, and the Joint Authority Southern Demersal Gillnet and Demersal Longline Fishery (JASDGDLF) and the West Coast Demersal Gillnet and Demersal Longline Managed Fishery (WCDGDLF) in the South Coast Bioregion. Targeted species include: sandbar (near threatened), blacktip, tiger (vulnerable / endangered) and lemon sharks (near threatened) in the WANCSF and JANSF; gummy sharks, dusky whalers and whiskery sharks in the JASDGDLF; and, dusky, sandbar and whiskery sharks in the WCDGDLF.

Following a peak in commercial landings of shark species in the Northern shark fisheries in the 2004/05 season of 1,294t, new management initiatives significantly restricted fishing effort within the fisheries, reducing it by 89% in the 2005/06 season (Fletcher & Santoro 2007). This reduced landings to 190t. Despite this decrease, it is unlikely that blacktip stocks have recovered from historical levels of exploitation, and the WA Department of Fisheries admits that identification problems with other target shark species, and the lack of necessary biological data, complicate their stock assessment (Fletcher & Santoro 2007). The WA Department of Fisheries (2009) currently classifies the sandbar shark as “depleted” and the blacktip shark as “uncertain”. Furthermore, determining trends is further complicated by the impacts of illegal foreign fishing and unreported catches in domestic fisheries.

The situation is far worse in the temperate shark fisheries, which have consistently maintained high levels of catch. The 2005/06 season saw the landing of 1,357t. Stock assessments have classified the breeding stock levels of dusky whalers (vulnerable / endangered) and sandbar sharks targeted in these fisheries as “depleted” (WA Department of Fisheries, 2009). Both species are among the least productive of any species for which demographic studies have been completed and are therefore particularly susceptible to population collapse as a result of over-harvest. As such, the breeding stock biomass of dusky sharks is believed to be in decline, and sandbar sharks have suffered declines in recruitment from the depletion of the breeding stock from historically unsustainable target fisheries (Fletcher & Santoro 2007). Moreover, it is predicted that the full scale of depletion of this stock has not yet become evident, with declining recruitment of the breeding stock likely to continue over the coming decade (Fletcher & Santoro 2007).

South Australia

Sharks are harvested in South Australia's Marine Scalefish Fishery, Lakes and Coorong, and the southern and northern zone Rock Lobster fishery (Jones 2008).

Some of the most commonly landed sharks in these fisheries are bronze whalers (*Carcharhinus brachyurus*) (near threatened) and dusky whalers (*C. obscurus*) (vulnerable / endangered), despite there being no detailed stock assessments for any population of bronze whalers throughout their global distribution due to insufficient biological and fishery data (Jones 2008). Demographic studies of dusky whalers using tagging, biological and fishery data have shown that the cumulative mortality of older sharks resulting from harvest in the 1990s had caused a depletion in the breeding stock of the species, resulting in recruitment failure (Jones 2008).

Victoria

While sharks are not the subject of target fisheries in Victoria, they are routinely caught as bycatch in a number of fisheries. These include the Black Lobster Fishery, Snapper Fishery and Giant Crab Fishery (Vic DPI 2008). The bycatch of sharks is likely to occur in additional fisheries but is unquantified due to the lack of analysis of commercial catch and effort data to quantify by-product catches, and the absence of data on non-retained bycatch in the commercial or recreational whiting, black bream or snapper fisheries (Vic DPI 2008).

Northern Territory

The Offshore Net and Line Fishery (formerly known as the Shark Fishery), jointly managed with the Commonwealth, primarily targets blacktip sharks (*Carcharhinus tilstoni* and *C. sorrah*), but also lands a variety of other shark species. Other shark species landed as by-product include several species from the Family Carcharhinidae (the whaler or requiem sharks), mostly *Carcharhinus* spp. and *Rhizoprionodon* spp., as well as hammerhead sharks (*Eusphyra blocchii* and *Sphyrna* spp.) (NT DPIF&M 2007). This fishery accounts for 95% of the total shark catch in NT's fisheries.

Incidental shark catch is also known to occur in the Barramundi, Coastal Net and Coastal Line Fisheries (NT DPIF&M 2007).

IUU fishing, which targets sharks in the waters off the Northern Territory, is acknowledged as having an uncertain impact on shark species in this region. Furthermore, the impact of IUU fishing on the NT shark fishing activities is as yet unquantified. In addition, the NT DPIF&M (2007) notes that, "*Little is known about the large scale stock structure of most of the shark species harvested, particularly the extent to which Indonesia, Western Australia, Queensland and the NT share fishery resources.*"

With so much uncertainty surrounding the various interacting factors that are all impacting to shark stocks in NT's territorial waters, determining an allowable catch for these species is essentially an arbitrary exercise.

Tasmania

Sharks are caught as part of Tasmania's multi-species Scalefish fishery, however, shark species caught (such as gummy sharks) are managed under Commonwealth jurisdiction within the Southern and Eastern Scalefish and Shark Fishery (see below).

Commonwealth

Sharks are caught as target species within two sectors of the Southern and Eastern Scalefish and Shark Fishery. Within the Commonwealth Trawl and Scalefish-Hook Sectors, upper slope deepwater sharks are classified as overfished (Larcombe & McLoughlin 2007). This includes three species of gulper sharks - Harrison's dogfish (*Centrophorus harrissoni*) (critically endangered), endeavor dogfish (*C. moluccensis*) and southern dogfish (*C. zeehaani*, formerly *C. uyato*) – that are all being assessed for listing as threatened species under the EPBC Act. Trawl surveys undertaken in 1976-77 and 1996-97 revealed considerable declines in the populations of these species over those twenty years. Larcombe & McLoughlin (2007) note that, “*Ongoing bycatch and the low productivity of the species will make recovery difficult*”. Dogfish are also caught infrequently in the Great Australian Bight Trawl Sector.

School shark (vulnerable), gummy shark and sawshark are caught in the Shark Gillnet and Hook Sectors. While gummy sharks are currently considered not to be overfished, this is not the case for school shark, whose populations have suffered severe declines to the point that they are now considered overfished (Larcombe & McLoughlin 2007). The decline in school shark to only 9-14% of pre-exploitation levels means that the species qualifies for listing as Endangered under the EPBC Act (TSSC 2009), yet the decision was made to classify school shark instead as Conservation Dependent, allowing it to remain a by-product of the fishery for gummy sharks. School shark will therefore continue to be overfished.

Sawshark are also caught in this sector and their status is uncertain. Two species are caught but are not distinguished in catch reporting making species assessment difficult (Larcombe & McLoughlin 2007). Pup production of this species was estimated in 2004 to be around 30% of the 1950 level (Larcombe & McLoughlin 2007).

Dusky sharks (vulnerable / endangered), whiskery sharks and school sharks (vulnerable) are caught as part of the jointly managed Western Australian Southern Demersal Gillnet and Longline Fishery (see the section on Western Australian fisheries above). Declining catch rates of dusky sharks throughout south-western Australia suggest that the breeding population has been depleted and there has been a subsequent decline in recruitment (Larcombe & McLoughlin 2007). All of these shark species are classified as overfished within this fishery (Larcombe & McLoughlin 2007).

Shark species are also caught in the Northern Shark Fishery, jointly managed under Queensland, Northern Territory and Western Australian jurisdiction by three separate Australian Government – State /Territory Government Joint Authorities (see the sections on Qld, NT and WA fisheries above). Concern over the sustainability of the fishery prompted Minister Garrett to revoke its Wildlife Trade Operation approval in April 2008.

Sharks are also routinely caught as bycatch in substantial numbers in a number of other Commonwealth fisheries, notably the Eastern Tuna and Billfish Fishery, the Western Tuna and Billfish Fishery, and the Northern Prawn Fishery.

Australian governments should acknowledge that there is an extremely poor knowledge on which to base management, the inherent vulnerability of sharks to overfishing and

that the prospects for achieving ecologically sustainable shark fisheries in the future are very low. HSI recommends an end to targeted shark fishing in Australia.

Recreational fishing

In addition to commercial exploitation of shark stocks, there are a large number of recreational fishers who also exploit shark stocks.

In NSW, commercial catches of mako sharks increased in the early 1990s, peaking at over 30t in 1996/97. Subsequent seasons have produced annual commercial catches of around 4t. The annual recreational harvest of mako sharks in NSW is likely to lie between 30 and 140t. (NSW DPI&F 2007).

NSW commercial fisheries land small numbers of tiger sharks, with annual catches ranging between 1 and 6t. The annual recreational harvest of tiger shark in NSW is approximately 10t. (NSW DPI&F 2007).

Both of the above examples show that the recreational fishing harvest is in many cases far in excess of the commercial harvest. HSI is concerned at the implications of this unmonitored harvest on shark species which we believe is occurring nationally, however in many cases the statistics are not available.

HSI recommends an end to the targeting of shark species by recreational fishers in light of the inherent vulnerability of sharks and the extremely poor knowledge on which to base any management.

End export of shark products

Under the EPBC Act the Federal Environment Minister is responsible for approving the export of products from Australian fisheries. The Minister can only approve an export fishery as an ecologically sustainable Wildlife Trade Operation if the fishery is not having a detrimental impact on the survival or conservation status of a species.

HSI recommends the Federal Environment Minister adopt a policy position that the export of shark products (fins, meat, cartilage, liver oil) not be approved because the exploitation of sharks is not ecologically sustainable and is risking detrimental impacts on the survival and conservation status of many species.

Import controls

Currently there are no regulations on imported sharks, and as such, shark catches from fisheries that go unregulated in other countries, and could be illegal or unsustainable, may be exported to Australia. Australia is therefore contributing directly to the demise of shark species around the globe.

This has been evidenced in the trade of shark products from South Africa, of which Australia is the main importer. A case study found that sharks obtained from South African fisheries, where there is poor management of shark populations, have limited monitoring and regulation of catch, and no knowledge of the impact of their harvest on

the conservation status of the species caught (Da Silva & Bürgener 2007). Furthermore, large discrepancies were noted in the import and export statistics of shark products.

As shark populations are largely unregulated around the world, this situation is likely to also be similar for shark products imported from other countries. As there is no measure of the sustainability of shark harvest anywhere in the world, it would be pertinent to immediately ban the import of shark products into Australia. HSI recommends that Australia implement a prohibition on the import of shark products, and an ecological sustainability test on all fish imports. Further, HSI recommends that stricter codes for the quantification and reporting of export and import data be implemented.

Combat IUU shark fishing

HSI commends the Australian Government for efforts to date to understand, quantify and stop IUU shark fishing which is a problem particularly in northern Australia.

While the very nature of IUU fishing makes it difficult to precisely determine the shark species that may be at risk, the species composition of confiscated fins has enabled some identification of targeted species (Lack & Sant 2008). It is also likely that listed threatened species whose distribution overlaps with IUU fishing activities may be susceptible to further population declines as a result.

HSI recommends that the threat of illegal foreign fishing should therefore be reflected in the recovery plans and the information provided to support the listings of threatened shark species under the EPBC Act.

Address shark bycatch

Interactions between non-target shark species and fishing activities are common in Commonwealth and State-managed fisheries, and bycatch reduction techniques and equipment are specific to the type of fishing gear used.

The prohibition of wire traces (otherwise known as wire leaders) used to attach hooks to the snoods, and regulating for reduced breaking strains of the snoods, are thought to reduce the incidences of incidental shark capture in longlining operations, as both facilitate the ability of sharks to bite through synthetic fibre leaders and escape if they become hooked. The use of wire traces has been banned in both the Eastern Tuna and Billfish Fishery and the Western Tuna and Billfish Fishery.

A recent study showed that the use of nylon leaders not only reduced the incidental capture of sharks, but also resulted in higher catch rates of the target species bigeye tuna (Ward et al. 2008). Therefore, it would seem that there are both ecological and financial benefits to the widespread adoption of this equipment in longlining operations in all Australian longline fisheries in which sharks are caught.

In addition, de-hookers facilitate the quick and efficient release of hooked animals from line fishing operations. Trialing of de-hookers in the Eastern Tuna and Billfish Fishery and the Western Tuna and Billfish Fishery have been found to be successful in releasing bycatch of not only sharks, but also of marlin, juvenile swordfish and tuna, sunfish and turtles (Robinson 2005).

For trawl nets, there is evidence that catches of sharks have been reduced when fitted with 'turtle exclusion devices', suggesting there could be advantages to investigating alternative devices designed specifically to exclude sharks (FAO 2000). In gillnets, regulating mesh-size and potentially the breaking strain of the webbing filaments may be effective in reducing shark bycatch (FAO 2000).

HSI recommends an end to the treatment of bycaught species as 'by-product'. If a species is not appropriate for targeted fishing because it has a poor or unknown conservation status then every effort should be made to avoid its capture. Allowing bycaught species to be sold commercially as by-product encourages their continued capture.

HSI recommends that wire traces are banned in all longlining fishing operations throughout Australia, and that the application of the technologies above for each type of fishing modality be investigated and implemented without delay. Further research and development into new mitigation measures for shark bycatch are urgently required. Bycaught species should not be sold commercially as "by-product".

Threatened species protection

Eight species of shark are listed on the EPBC Act^d. The Federal Minister for the Environment is due to make a decision on the listing of three species of dogfish (Harrison's - *Centrophorus harrissoni*, endeavour - *C. moluccensis*, and southern – *C. zeehaani*) by December 2010.

Many more shark species in Australia are threatened and qualify for listing under the EPBC Act.

HSI recommends the TSSC and state counterparts be tasked with the urgent assessment of all shark species found in Australia to determine their conservation status and eligibility for listing as threatened species under the EPBC Act and state threatened species laws.

In addition, a new clause (s179(6)) introduced to the EPBC Act in 2006 specifically enables marine fish to be listed as conservation dependent even though they qualify for listing in a higher threat category. This provision applies only to the listing of marine fish, and allows their continued commercial exploitation even after listing on the EPBC Act. This clause has recently enabled the listing of school shark as conservation dependent, despite suffering severe population declines of between 86 and 91% of pre-exploitation levels (TSSC 2009) which warrants an endangered listing.

Prior to the 2006 amendments, a species could only be listed in the conservation dependent category if it did not qualify for listing in a higher category. This is still the case for all other species and there is no justification for why the rules should be different for marine fish.

^d Grey nurse shark (east coast – critically endangered), grey nurse shark (west coast – vulnerable), spartooth shark (critically endangered), northern river shark (endangered), great white shark (vulnerable), freshwater sawfish (vulnerable), green sawfish (vulnerable), whale shark (vulnerable), school shark (conservation dependent).

HSI recommends that the EPBC Act clause enabling the down-grading of protection for marine fish be removed so that commercially exploited marine fish are listed in the threat categories for which they qualify according to their biological criteria.

Identify and Protect critical habitats

The identification and protection of key sites for grey nurse sharks was an important component of the grey nurse shark Recovery Plan, and the Commonwealth and New South Wales governments have moved to protect critical habitats for this species on the east coast of Australia. Currently, a number of critical habitats in NSW waters (Julian Rocks, North & South Solitary Islands, Green Island & Fish Rock, The Pinnacle, Sawtooth Rocks, Big & Little Seal Rocks, Edith Breaker, Little Broughton Island, Magic Point, Bass Point, Tollgate Islands and Montague Island) and 2 in Commonwealth waters (Pimpnel Rock and the Cod Grounds) receive some form of protection.

However, three of these sites - Fish Rock, Green Island and Magic Point – still allow some forms of fishing, which does not fulfil the action specified in the grey nurse shark recovery plan to implement no-take sanctuary zones and/or seasonal or permanent closures of sites to commercial and recreational fishing.

HSI recommends the level of protection for grey nurse sharks be strengthened so that all identified critical habitat sites are protected by 1500m radius no take marine reserves.

In addition, HSI recommends critical habitats be identified and protected for all other shark species listed as threatened under the EPBC Act (see above). This protection should include listing of critical habitats for all listed shark species on the EPBC Register of Critical Habitat (or state equivalent) and the establishment of marine reserves to remove threats where they exist. For further information please see HSI's [Protecting Critical Marine Habitats report](#).

International law and policy for sharks

CMS

The recent 9th Conference of the Parties to the Convention on Migratory Species (CMS), held in December 2008, saw the addition of porbeagle, long- and short-fin mako sharks, and the northern hemisphere populations of spiny dogfish to Appendix II of the CMS. These are among the most highly sought after shark species for their meat and fins.

On 1st March 2010 a landmark agreement for the conservation of migratory sharks under the auspices of CMS came into force, the Memorandum of Understanding (MoU) for Migratory Sharks. This agreement included all seven shark species listed in the CMS Appendices, including the previously listed great white, basking and whale sharks.

The most recently listed sharks are not subject to international catch limits, and are all heavily targeted and globally threatened commercial species that are subject to intense fishing pressure as they migrate across national boundaries. The agreed CMS MoU must therefore be implemented urgently. This must build international cooperation and

identify measures to build capacity, coordinate stock assessments and research, foster active cooperation with the fishing industry, identify and protect critical habitat and migration corridors, implement processes to encourage the prohibition or strict control of shark finning, promote and regulate the non-consumptive use of sharks including ecotourism, and develop enforcement and compliance measures, for all seven species,.

However since the MoU was agreed in early 2010, progress to implement the agreement has been slow, with no further states signing the agreement.

The next phase for the MoU is for signatory States to develop a Conservation Plan to implement the agreement.

HSI recommends that Australia urgently sign the MoU for Migratory Sharks, so that it can be implemented nationally and Australia can play an active role in the development of the Conservation Plan. Furthermore, the Australian Government should consider additional shark species for nomination to the CMS Appendices, and subsequent inclusion in the MoU.

CITES

The demise of global shark populations resulting from high value international trade in their meat and fins has led the CITES Animals Committee identifying a number of species as “of concern”. These include: tope, school or soupfin shark (*Galeorhinus galeus*); gulper sharks (Family Centrophoridae); requiem sharks (Family Carcharinidae); freshwater stingrays (Family Potamotrygonidae); and, guitarfishes / shovelnose rays (Family Rhinobatidae) (CITES Shark Working Group 2004). In addition, hammerhead sharks (*Sphyrna* spp.) and long- and short-fin mako sharks (*Isurus* spp.) are among the most widely traded sharks in international market and have experienced severe stock depletion throughout their global ranges.

The continuing upward trend in the catch and trade of sharks and rays reflects a strong market demand for their meat and fins and CITES is the only existing international mechanism available to regulate international trade in shark products. Listing under CITES Appendices would promote regional cooperation for species conservation, and ensure that international trade fisheries are sustainably managed and accurately reported.

The 15th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) took place in Doha, Qatar, in March 2010, and considered four proposals to amend the Appendices to list eight shark species. The species under consideration were oceanic whitetip shark (*Carcharhinus longimanus*), porbeagle (*Lamna nasus*), spiny dogfish (*Squalus acanthias*) and scalloped hammerhead shark (*Sphyrna lewini*), all of which were proposed for inclusion in Appendix II. In addition, the proposal to consider scalloped hammerhead shark also included four other species as ‘look-alike’ species – the great hammerhead (*Sphyrna mokarran*), smooth hammerhead (*Sphyrna zygaena*), Sandbar shark (*Carcharhinus plumbeus*) and the dusky shark (*Carcharhinus obscurus*). Sadly, none of these proposals were successful, due to strong opposition led by China.

CoP15 was the beginning of a process to build international momentum and recognition of the need for greater protection for sharks. HSI urges the Australian Government to

give serious consideration to assessing and proposing a number of shark species threatened by trade in international markets for inclusion on CITES Appendices at the next CoP, CoP16 which will be held in Thailand in 2013. Further, given the demise of shark populations worldwide, and the strong support shown by Australia at CoP15 for the shark proposals, HSI recommends that the Australian Government support the listing of any Chondrichthyan species nominated for inclusion on CITES Appendices by other Parties at CoP16.

Moreover, HSI strongly encourages the Australian Government to propose the uplisting of Freshwater sawfish, *Pristis microdon*, from Appendix II to Appendix I of the Convention, to afford it the same protection as all other members of the Family Pristidae. The need for this protection has been highlighted by the recent Government consultation (DEWHA, 2010) which notes the decline in abundance of the species. The current annotation accompanying the Appendix II listing of freshwater sawfish “*for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable aquaria for primarily conservation purposes*”, that was proposed by Australia at CoP14, has not previously been incorporated in or defined by either CITES or Australian legislation, and creates a damaging precedent for future proposals. This species is categorised as Critically Endangered globally by the IUCN, and abundances in many populations are still largely unknown.

UNGA

Widespread recognition of the impact of shark finning on global shark populations led to the adoption of a landmark Resolution on sustainable fisheries at the United Nations General Assembly (UNGA) in December 2007. Clause 12 of Resolution 62/177^o states that the General Assembly,

*“Calls upon States to take immediate and concerted action to improve the implementation of and compliance with existing regional fisheries management organisations or arrangement and national measures that regulate shark fisheries, in particular those measures which prohibit or restrict fisheries conducted solely for the purpose of harvesting shark fins, and, where necessary, to consider taking other measures, as appropriate, **such as requiring that all sharks be landed with each fin naturally attached.**”*

This Resolution passed without a vote, which is indicative of the urgency being felt on a global scale to curb growing shark fisheries.

Aside from the ecological benefits of legislating a fins-attached policy to ensure against shark finning, the resolution also has the additional advantages of enhancing reporting accuracy, data acquisition and species identification, elements that are crucial for the sustainable management of shark resources in all State and Federal fisheries. Furthermore, it maximises the quality and therefore value of the fins and carcass, promotes the standardisation of data collection and the reporting of official catch statistics, and eliminates any potential enforcement loopholes (IUCN 2003).

^o United Nations General Assembly. Resolution 62/177.
<http://daccessdds.un.org/doc/UNDOC/LTD/N07/618/21/PDF/N0761821.pdf?OpenElement>

HSI recommends that the Commonwealth, states and territories align all of their fisheries with the UNGA recommendation and establish a comprehensive fins-attached policy for the landing of all sharks.

RFMOs

A number of Regional Fisheries Management Organisations (RFMOs) have passed Resolutions or Conservation Management Measures directing their members to prohibit the finning of sharks. These include the International Commission for the Conservation of Atlantic Tunas (ICCAT), Inter-American Tropical Tuna Commission (IATTC), Indian Ocean Tuna Commission (IOTC), Western and Central Pacific Fisheries Commission (WCPFC) and South-East Atlantic Fisheries Organisation (SEAFO).

At the recent CITES meeting, CoP15, in Qatar, many parties suggested that RFMOs were the most appropriate fora in which to deal with sharks, however the performance of RFMOs on these issues to date has been poor. HSI strongly believes that RFMOs should deal with the bycatch of sharks, however this should not be an exclusive arrangement to the exclusion of action under CITES. Recent joint meetings of tuna RFMOs have closely examined the issue of bycatch in tuna fisheries. This included a specific workshop on bycatch in tuna fisheries held in Brisbane as part of the broader 'Kobe process' that begun in 2007, bringing together members and other stakeholders of the five tuna RFMOs, to support the sustainable management of the world's tuna stocks and non-target, associated and dependent species.

HSI recommends Australia continue to encourage the adoption of binding resolutions prohibiting shark finning and minimise shark bycatch in all RFMO fora in which Australia partakes.

HSI also recommends Australia encourage at RFMO fora the adoption of a comprehensive package of best practice conservation and management measures in each RFMO as soon as procedurally possible. These should cover the whole range of identified bycatch problems and associated solutions, including for sharks.

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Annex 1: IUCN conservation status of shark species captured in Australian Commonwealth and State managed fisheries.

Species Name	Common Name	IUCN Status
<i>Aetobatus narinari</i>	Whitespotted Eagle Ray	Near Threatened
<i>Aetomylaeus nichofii</i>	Banded Eagle Ray	Vulnerable
<i>Anoxypristis cuspidata</i>	Narrow Sawfish	Critically Endangered
<i>Carcharhinus amboinensis</i>	Pigeye Shark	Data Deficient
<i>Carcharhinus brachyurus</i>	Bronze Whaler	Near Threatened
<i>Carcharhinus brevipinna</i>	Spinner Shark	Lower Risk / Near Threatened
<i>Carcharhinus cautus</i>	Nervous Shark	Data Deficient
<i>Carcharhinus dussumieri</i>	Whitecheek Shark	Near Threatened
<i>Carcharhinus fitzroyensis</i>	Creek Whaler	Least Concern
<i>Carcharhinus leucas</i>	Bull Shark	Vulnerable or Endangered**
<i>Carcharhinus limbatus</i>	Common Blacktip Shark	Lower Risk / Near Threatened
<i>Carcharhinus macloti</i>	Hardnose Shark	Near Threatened
<i>Carcharhinus plumbeus</i>	Sandbar Shark	Lower Risk / Near Threatened
<i>Carcharhinus sorrah</i>	Spot-tail Shark	
<i>Carcharhinus tilstoni</i>	Blacktip Shark	Least Concern
<i>Centrophorus harrissoni</i>	Harrison's dogfish	Critically Endangered
<i>Centrophorus moluccensis</i>	Endeavour Dogfish	Data Deficient
<i>Centrophorus uyato</i>	Southern Dogfish	
<i>Charcharhinus obscurus</i>	Dusky Whaler	Vulnerable or Endangered**
<i>Eusphyra blochii</i>	Winghead Shark	Near Threatened
<i>Furgaleus mackii</i>	Whiskerey Shark	Least Concern
<i>Galeocerdo cuvier</i>	Tiger Shark	Vulnerable or Endangered**
<i>Galeorhinus galeus</i>	School Shark	Vulnerable: Population trend decreasing
<i>Hemipristis elongata</i>	Fossil Shark	
<i>Himantura toshi</i>	Blackspotted Whipray	
<i>Hydrolagus mccoskeri</i>	Ghostshark	Near Threatened / Data deficient / Least Concern
<i>Isurus oxyrinchus</i>	Short-fin Mako	Vulnerable*
<i>Isurus paucus</i>	Long-fin Mako	Vulnerable
<i>Mustelus antarcticus</i>	Gummy Shark	Least Concern
<i>Nebrius ferrugineus</i>	Tawny Shark	Vulnerable
<i>Negaprion brevirostris</i>	Lemon shark	Lower Risk / Near Threatened
<i>Orectolobus spp.</i>	Wobbegong Shark	Vulnerable**
<i>Pristiophorus spp.</i>	Sawshark	Least Concern / Data deficient
<i>Rhinobatos typus</i>	Giant Shovelnose Ray	Vulnerable
<i>Rhinoptera neglecta</i>	Australian Cownose Ray	
<i>Rhizoprionodon acutus</i>	Milk Shark	Least Concern
<i>Rhizoprionodon taylori</i>	Australian Sharpnose Shark	Least Concern
<i>Rhynchobatus australiae</i>	Whitespotted Guitarfish	Vulnerable
<i>Sphyrna lewini</i>	Scalloped Hammerhead	Endangered*
<i>Sphyrna mokarran</i>	Great Hammerhead	Endangered
<i>Sphyrna zygaena</i>	Smooth Hammerheads	Vulnerable**
<i>Stegostoma fasciatum</i>	Zebra Shark	Vulnerable

Source: IUCN 2008, MTSRF 2008. *IUCN 2007 **NCC NSW 2008.

Annex 2: Species of shark and ray caught in the commercial net catch of the ECIFFF during observer trips in five regions of the GBRWHA from April 2007 – May 2008, and their IUCN status.

Species Name	Common Name	IUCN Status
<i>Aetobatus narinari</i>	Whitespotted Eagle Ray	Near Threatened
<i>Aetomylaeus nichofii</i>	Banded Eagle Ray	Vulnerable
<i>Anoxypristis cuspidata</i>	Narrow Sawfish	Critically Endangered
<i>Carcharhinus amboinensis</i>	Pigeye Shark	Data Deficient
<i>Carcharhinus brevipinna</i>	Spinner Shark	Lower Risk / Near Threatened
<i>Carcharhinus cautus</i>	Nervous Shark	Data Deficient
<i>Carcharhinus dussumieri</i>	Whitecheek Shark	Near Threatened
<i>Carcharhinus fitzroyensis</i>	Creek Whaler	Least Concern
<i>Carcharhinus leucas</i>	Bull Shark	Vulnerable or Endangered**
<i>Carcharhinus limbatus</i>	Common Blacktip Shark	Lower Risk / Near Threatened
<i>Carcharhinus macloti</i>	Hardnose Shark	Near Threatened
<i>Carcharhinus sorrah</i>	Spot-tail Shark	
<i>Carcharhinus tilstoni</i>	Blacktip Shark	Least Concern
<i>Eusphyra blochii</i>	Winghead Shark	Near Threatened
<i>Galeocerdo cuvier</i>	Tiger Shark	Vulnerable or Endangered**
<i>Hemipristis elongata</i>	Fossil Shark	
<i>Himantura toshi</i>	Blackspotted Whipray	
<i>Nebrius ferrugineus</i>	Tawny Shark	Vulnerable
<i>Rhinobatos typus</i>	Giant Shovelnose Ray	Vulnerable
<i>Rhinoptera neglecta</i>	Australian Cownose Ray	
<i>Rhizoprionodon acutus</i>	Milk Shark	Least Concern
<i>Rhizoprionodon taylori</i>	Australian Sharpnose Shark	Least Concern
<i>Rhynchobatus australiae</i>	Whitespotted Guitarfish	Vulnerable
<i>Sphyrna lewini</i>	Scalloped Hammerhead	Endangered*
<i>Sphyrna mokarran</i>	Great Hammerhead	Endangered
<i>Stegostoma fasciatum</i>	Zebra Shark	Vulnerable

Source: IUCN 2008, MTSRF 2008. *IUCN 2007 **NCC NSW 2008.