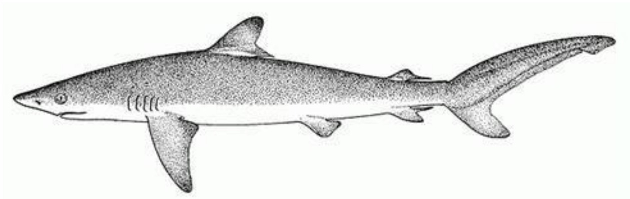
CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Seventeenth meeting of the Conference of the Parties
Johannesburg (South Africa), 24 September – 5 October 2016

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of *Carcharhinus falciformis* (Müller & Henle, 1839) in Appendix II in accordance with Article II paragraph 2(a) of the Convention.



Qualifying Criterion (Conf. 9.24 (Rev. CoP16))

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

The species qualifies for inclusion in Appendix II under this criterion because marked population declines meet CITES' guidelines for the application of decline to commercially exploited aquatic species. This proposal describes declines in *C. falciformis* populations of between 70% and 90% in all regions. These declines arise from over-exploitation in fisheries that are driven by international trade demand.

Based upon current rates of exploitation, this species is likely to become threatened with extinction and soon qualify for Appendix I under Criterion Cii unless international trade regulation provides an incentive to introduce or improve monitoring and management measures to provide a basis for non-detriment and legal acquisition findings.

B. Proponent

Bahamas, Bangladesh, Benin, Brazil, Burkina Faso, the Comoros, the Dominican Republic, Egypt, the European Union, Fiji, Gabon, Ghana, Guinea, Guinea-Bissau, Maldives, Mauritania, Palau, Panama, Samoa, Senegal, Sri Lanka and Ukraine*:

C. Supporting statement

1. Taxonomy

1.1 Class: Chondrichthyes

* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

1.2 Order: Carcharhiniformes

1.3 Family: Carcharhinidae

1.4 Species: *Carcharhinus falciformis* (Müller & Henle, 1839)

1.5 Scientific synonyms: *Carcharias falcipinnis* (Lowe, 1839), *Aprionodon sitankaiensis* (Herre, 1931), *Carcharinus floridanus* (Bigelow, Schroeder & Springer, 1943), *Eulamania malpeloensis* (Fowler, 1944), *Carcharhinus atrodorsus* (Deng, Xiong & Zhan, 1981)

1.6 Common names:

Afrikaans:	Syhaai
English:	Silky shark, blackspot shark, grey whaler shark, olive shark, reef shark, ridgeback shark
French:	Requin, soyeux
Spanish:	Tiburon jaqueton, tollo mantequero

1.7 Code numbers: Not applicable

2. Overview

The Republic of Maldives proposes the silky shark *Carcharhinus falciformis* for listing in Appendix II of CITES in accordance with Article II.2 (a) of the Convention and Resolution Conf. 9.24 (Rev. CoP16), in recognition of the serious declines in this species population observed in Maldivian waters, elsewhere in the Indian Ocean, and in other parts of the silky shark's range. The Republic of Maldives fully recognises the very high non-consumptive value of sharks and in 2010 declared a shark sanctuary by prohibiting the capture, killing, or harming of any shark species within the Maldivian EEZ, and implementing a complete ban on all shark trade. These measures provide total domestic protection for silky sharks, but are insufficient to allow the population to recover from its depleted state, because it is part of an unmanaged straddling and migratory high seas stock.

Carcharhinus falciformis meets the guidelines suggested by FAO for the listing of commercially exploited aquatic species. It falls into FAO's lowest productivity category of the most vulnerable species: those with an intrinsic rate of population increase of <0.14 and a generation time of >10. Ecological Risk and Productivity Assessments determined that silky sharks ranked first in their susceptibility to pelagic fisheries among 12 other Atlantic Ocean species. This species is therefore highly vulnerable to over-exploitation in fisheries and very slow to recover from depletion (section 3).

The extent and rate of decline of silky shark populations for which trend data are available indicate stock depletion to some 10-30% of baseline levels (section 4). These declines meet or significantly exceed the qualifying levels for listing in Appendix II. Some stocks may even qualify for consideration for Appendix I. These declines are primarily due to overexploitation by fisheries supplying fin products for international trade. Trade regulation through an Appendix II listing is required to prevent the species from qualifying for consideration for listing in Appendix I in future and to allow populations to recover.

The silky shark is taken in very large numbers in target and bycatch fisheries and is an economically-important retained and utilised catch of large tropical oceanic pelagic fisheries. Products from these fisheries supply international market demand for shark fins. Silky shark fins are very distinctive, identified at species level by the dried marine products industry, and of high quality and value. In the early 2000s, the species comprised around 3.5% of the international shark fin trade – By 2013, the proportion of silky shark fins in the market had increased to levels as high as 7.47% (median 4.67). This shows that current global management of this species is insufficient, and that despite global declines the demand for this species fins continues to rise (section 6), and without proper regulation these declines will continue.

An Appendix II listing will also provide valuable support for regional and national fisheries management regulations, through the implementation of legal acquisition and non-detriment findings, and certificates for introductions from the sea. Implementation of and compliance with the Maldives' and other national shark sanctuary measures, and other national biodiversity conservation regulations, will similarly benefit from the trade management synergies provided through a CITES Appendix II listing for silky sharks. An Appendix II listing will also support the collaborative management of silky shark populations through Appendix II of the Convention on the Conservation of Migratory Species and the CMS Migratory Sharks MOU.

3. Species characteristics

3.1 Distribution

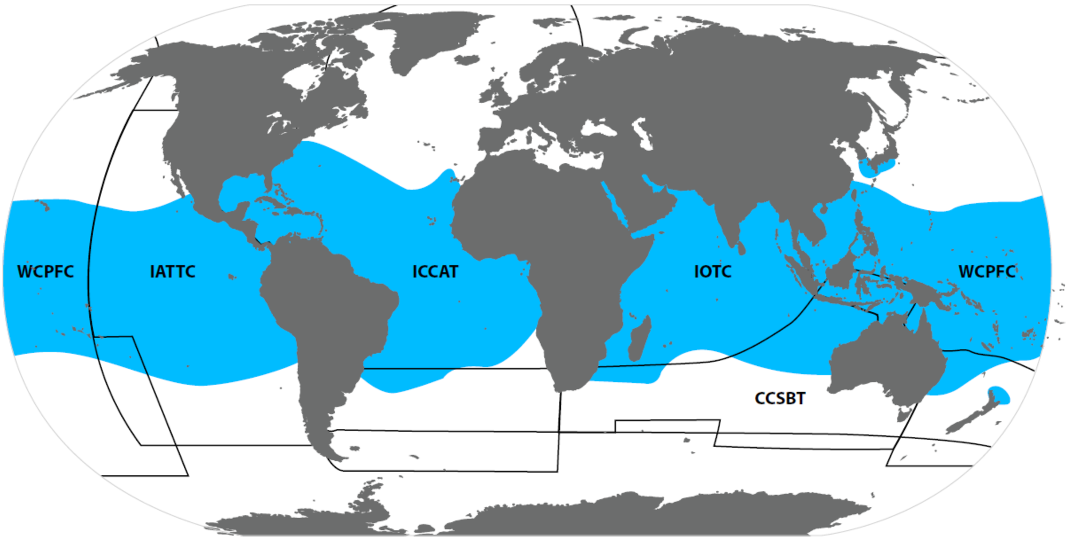


Figure 1: World distribution map for *C. falciformis* (IUCN Red List) and RFMO convention areas

Silky sharks C. *falciformis* are oceanic and coastal sharks found near the edge of continental shelves and out in the open ocean, outside the EEZs of coastal States. They can be found from shallow waters to depths of 500 meters. *C. falciformis* are circumglobal in tropical waters (Maguire et al. 2006, Ebert and Stehmann 2013). They are found in the following FAO Areas: 21, 31, 34, 37, 41, 47, 51, 57, 61, 71, 77, 81, 87.

Range states are listed in Annex 4.

3.2 Habitat

C. falciformis are found in the oceanic and coastal-pelagic habitats of tropical waters, often associated with seamounts, and juveniles with floating objects. *C. falciformis* often inhabit continental shelves and slopes from the surface to 500 m of depth. Older silky sharks are typically in oceanic waters, but often found more offshore near land than in the open ocean (Baum and Myers 2004). *C. falciformis* can be found on reefs that are adjacent to deep water, for example in the Red Sea (Clarke, C. et al. 2011). Their foraging occurs more inshore and they will return to the shelf to reproduce. Nurseries are along the outer continental shelf edge, and neonates stay near the reefs until they are large enough to move to the pelagic habitat, possibly the first winter after pupping in the early summer (Beerkircher et al. 2002). Around 130 cm in length, *C. falciformis* move to an oceanic habitat where they join schools of pelagic fish, such as tuna. Juveniles are often caught in very large numbers by fishing gear set on floating fish aggregating devices (FADs) (Gilman 2011, Filmalter et al. 2013, Rice and Harley 2013).

While *C. falciformis* can be found in warmer tropical waters above 23˚C (Last and Stevens 1994, Rice and Harley 2013), they have been found to migrate according to temperature. *C. falciformis* were found to remain within the uniform temperature surface layer, but those north of 10°N remained significantly deeper and in cooler temperatures than those south of 10°N (Musyl et al. 2011). It has also been noted that *C. falciformis* have shown sexual segregation (Lana 2012, Clarke, C. et al. 2011).

Silky sharks live in a variety of habitats throughout their life and have been found to migrate, regularly and cyclically crossing international borders. While they may not travel as much as other species, they may cover large distances in a short period of time (Clarke, C. et al. 2011). Tagging studies have shown *C. falciformis* moving between open ocean and coastal systems and between northern and southern regions (Galván-Tirado, et al. 2013). For feeding and reproducing, adult *C. falciformis* have been found to return to the shelf waters. Previous known maximum distance moved was 1,339 km (Bonfil 2008), but a recent tagging program noted a silky shark traveled 2,200 km from Wolf Island in the Galapagos Marine Reserve to Clipperton Island (Galapagos Conservancy). In the Northwest Atlantic, *C. falciformis* were found to have left the exclusive economic zone of the United States, moved into and out of the Gulf of Mexico, and moved into the Caribbean Sea, with a maximum distance of 723 miles traveled (Kohler et al. 1998). In the Eastern Pacific Ocean, tagged *C. falciformis* crossed the EEZs of six countries and went into international waters (Kohin et al. 2006). *C. falciformis* may disperse across the Pacific Ocean, crossing boundaries, using the warm currents and islands as stepping stones (Galván-Tirado et al. 2013). The need for international cooperation and management of this migratory species (Kohler et al. 1998, Kohin et al. 2006) is recognized by CMS (see 7.2).

3.3 Biological characteristics

C. falciformis are known for their slender bodies and smooth skin and are an active and quick moving shark. They are ranked fourth in speed among sharks, with an estimated maximum speed of 60 km/day (Bonfil 2008). Research has shown there are multiple distinct populations of silky sharks worldwide, with some stocks growing larger and maturing later than others (see Annex 1 for life history parameters by region). Many populations of silky shark reproduce during the late spring but silky sharks generally do not have reproductive seasonality (Bonfil, 2008). There is limited information on life history and biology.

Ecological Risk and Productivity Assessments determined that silky sharks have the highest susceptibility to pelagic fisheries, making them the most vulnerable of 12 Atlantic Ocean species evaluated (Cortés et al. 2010). Their generation time is between 11-14 years (Bonfil et al. 2009; ICCAT 2012), with female maturing at >12 years old (Bonfil et al. 1993) with a longevity of 36 years (Joung et al. 2008). Litters average 6 pups (1-16, positively correlated with maternal size) after a 9 to 12 month gestation (Oshitani et al. 2003), with one resting year (or possibly more) between litters (Galván-Tirado et al. 2013).

Cortés (2002) estimated their intrinsic rate of increase and natural mortality to be 0.102 and 0.17-0.21, respectively. Using a demographic method that incorporates density dependence, Smith et al. (1998) determined that silky sharks have a moderate to low intrinsic recovery potential and productivity when compared to 26 other species of sharks. Cortés (2008), using a density independent demographic approach, calculated population growth rates (λ) of 1.076 yr^{-1} (1.057, 1.091; lower and upper 95% confidence limits, respectively) and generation times (T) of 14.3 yrs (13.7, 15.3). In this study, population growth rates were low to moderate when compared with eight other pelagic species. Estimates of the intrinsic rate of increase for this species ($r=0.043\ yr^{-1}$) indicated that silky shark populations are vulnerable to depletion and will be slow to recover from over-exploitation based on FAO's low productivity category ($<0.14\ yr^{-1}$) (FAO 2001) and Musick et al. (2000). The most recent evaluation of productivity, by Cortés et al. (2010), is 0.063 (0.037–0.083 = lower and upper confidence limits expressed as the 2.5th and 97.5th percentiles).

3.4 Morphological characteristics

Silky sharks are known for their slender bodies and smoother skin. They are active and quick moving large, slender sharks, with a dark grey to bronze coloration dorsally and white ventrally. Silky sharks are characterized by the presence of an interdorsal ridge, a moderately rounded snout that is shorter than the width of the mouth, a sloping first dorsal fin with long free rear tip and a moderately rounded apex that originates behind the free rear tip of the pectoral fins, a small second dorsal fin with an extremely long free rear tip that is at least 2 times the second dorsal fin height. The pectoral fins are long and slender (but can be relatively short and broad in neonate and juvenile specimens), with distinctive dusky tips at the apex of the ventral surface. Tips of fins other than first dorsal are dusky as well, with the markings more conspicuous in juveniles. Small, densely packed dermal denticles give this shark its smooth, silky appearance.

3.5 Role of the species in its ecosystem

Silky sharks are a high trophic level predator in ocean ecosystems feeding mainly on teleosts and cephalopods (Compagno 1984). Cortés (1999) determined the trophic level based on diet for silky shark was 4.2 (maximum = 5.0).

4. Status and trends

4.1 Habitat trends

The offshore pelagic and oceanic habitats of most *C. falciformis* populations are not currently directly affected by habitat loss and destruction, although climate change and rising sea temperatures may affect this species and their prey. Aggregations of female silky sharks have been found on reefs in the Red Sea (Clarke, C. et al. 2011); coral reef habitats are at a particularly high risk of degradation from climate change and human activities. The increasing use of FADs is of concern because this leads to the mortality of the very large numbers of juvenile silky sharks associated with floating object habitats.

4.2 Population size

Unknown. Two stock assessments have been attempted for silky sharks in recent years. The first, completed by WCPFC in the western Pacific Ocean (Rice and Harley 2013), was unable to determine the biomass of silky sharks in their waters, but identified declines greater than 70% in the region – this led to a prohibition in all silky shark catches in the WCPFC. The second, conducted by IATTC, is yet to be completed, but also identifies significant declines and recommends management action to safeguard the species in the Eastern Pacific (Aires-da-Silva et al. 2013).

4.3 Population structure

Genetic analysis in the Pacific Ocean suggests that, although *C. falciformis* have low genetic variation and there is genetic connectivity among the regions, there is still evidence of distinct eastern and western Pacific populations (Galván-Tirado et al. 2013). A stock assessment in the eastern Pacific Ocean has also suggested the possibility of two separate stocks (Aires-da-Silva et al. 2013).

4.4 Population trends

Due to its life history characteristics, slow growth, late maturity, and production of few young (see Annex 1), *C. falciformis* is vulnerable to overexploitation by fishing and has experienced significant and ongoing population declines throughout its range. Worldwide, *C. falciformis* have declined by over 70% in almost every area they are found and for which data, ecological risk assessments, and stock assessments are available (See Annex 3). Indeed, the most severely depleted populations already qualify for consideration for Appendix I:

Ocean/Sea	Estimated stock decline	Reference
Atlantic	72% over 5 years 69% over 10-20 years 90% over 40 years from 1950s 46% & 50% over 13 years, 1992-2005	Cramer, 2000 Beerkircher et al. 2002 Baum & Myers, 2004[1] Cortés et al. 2007
Indian	50%-90% over 20 years	Anderson & Juaharee, 2009
Pacific	60-80% between 1994 and 2004, dependent on sub-region; 67% in <20 years; 70% from baseline	Minami et al. (2007), Galván-Tirado et al. (2013), Rice & Harley (2013)

Table 1: Worldwide *C. falciformis* declines

The silky shark is listed as Near Threatened globally in the IUCN Red List of Threatened Species (Bonfil et al. 2009), but this assessment was prepared in 2007, is out of date, and due for revision. Regional Red List Assessments are: Vulnerable in the eastern central and southeast Pacific; Vulnerable in the northwest Atlantic and western central Atlantic; Near Threatened in the southwest Atlantic; Near Threatened in the Indian Ocean and western central Pacific and Data Deficient in Europe and the Mediterranean (where the species is only rarely recorded).

[1] *Baum and Myers' (2004) conclusions were the subject of debate, particularly for coastal species. Burgess et al. 2005 agreed some species of sharks in the Gulf of Mexico have declined, but disagreed with the magnitude of decline reported by Baum and Myers 2004. They particularly questioned the use of pelagic logbook data for analysis of trends in coastal species (not silky sharks). Baum et al. 2005 strongly defended their analytical methods and noted that they had taken fishing gear variations into account in their analyses.*

Indian Ocean

Significant declines in abundance have been noted in the region. Over the past 20 years, Maldivian fishermen targeting shark species noted up to a 90% decline in *C. falciformis* abundance (Anderson 2009, IOTC 2013). There is anecdotal evidence of a five-fold decrease in *C. falciformis* catch in purse seine CPUE between the 1980s and 2005 (IOTC 2013). Indian longline catch has also seen a decline from 1984-2006 (John and Varghese 2009, IOTC 2013). Sri Lanka has had a silky shark fishery for 40 years but it appears to have collapsed with the average landings declining from 13,000 t in the 1980s to 4,600t since 2000 (Bonfil 2008 and FAO 2009, Camhi et al. 2009) (See Annex 3 Figure 4). Decreases in shark abundance have been noted by Omani fishermen and *C. falciformis* are one of the main species caught. While all life stages are represented in Oman's landings, *C. falciformis* were vulnerable to capture soon after birth with immature sharks representing a large part of the landings. It was further suggested that different components of the fishery were taking different size classes (Henderson et al. 2009).

The Indian Ocean Tuna Commission (IOTC) Scientific Committee (SC) has repeatedly noted the lack of information to conduct a quantitative stock assessment of silky shark species (IOTC SC 2013, 2014, 2015), and the situation isn't expected to change in the near future. In an ecological risk assessment, the Scientific Committee ranked *C. falciformis* second in vulnerability in the purse seine fishery and fourth for the longline fishery, due to their susceptibility to these fisheries and their life history characteristics. The report notes that "despite the lack of data, it is clear from the information that is available that silky shark abundance has declined significantly over recent decades" (IOTC 2013).

In the Maldives, a ten year shark fishing moratorium was declared in 1998 within 12 nautical miles of seven major tourist atolls. However, despite this measure, a 2009 study found that 90% of fishermen noted that between 50-90% fewer silky sharks were being caught than 20 years previously, and that their sizes were decreasing as well (Anderson and Juaharee, 2009). This decline and heightened local risk of extinction led to the declaration in 2010 throughout Maldivian waters of a shark sanctuary, where all shark retention is prohibited.

Pacific Ocean

C. falciformis are the main shark bycatch of both the longline and purse seine fisheries in the western and central Pacific Ocean (Clarke et al. 2011). Concentrated between latitudes 20° N and S, silky sharks have been found to be more abundant in the western equatorial WCPO than in eastern areas (Clarke et al. 2011). In the western and central Pacific Ocean, *C. falciformis* have experienced both a decline in population and in the median length of the individuals caught (Clarke et al. 2011, Clarke et al. 2012). While Clarke et al. 2012 found the changes in abundance for silky sharks were not significant from 1995-2010, they did note that *C. falciformis* experienced a decline in catch rate from 2006-2010 and that all *C. falciformis* were immature. Furthermore, those caught in the longline fishery were often kept, while the silky sharks caught in the purse seine fishery were finned and not retained.

In the western and central Pacific Ocean, bycatch from the longline fishery presents the greatest threat to *C. falciformis* populations. *C. falciformis* are predominantly caught in the shallow sets. The purse seine fishery, which catches juveniles predominantly, also significantly impacts the stock. Interactions with *C. falciformis* can occur throughout the full range of the purse seine fishery and 70% of the observer-recorded catch was silky sharks (Clarke et al. 2011). Increased fishing mortality, recent declining CPUE, and declines in size composition data were found during 1995-2009.

The two full stock assessments so far conducted for *C. falciformis* illustrate populations in severe decline. The recent Western Central Pacific Fisheries Commission (WCPFC) Scientific Committee stock assessment estimated that total biomass was at 30% of the theoretical virgin biomass. It also concluded that overfishing was occurring, with fishing mortality ($F_{CURRENT}$) 4.48 times higher than would be sustainable (F_{MSY}), and that the stock was overfished, with spawning stock biomass ($SB_{CURRENT}$) at about 70% of MSY (Rice and Harley 2013). It also identified declines in the size composition of the silky shark stock, in total biomass, and in recruitment since 1995, when catch data became available (this is not when the fishery started). The assessment found that fishing mortality was increasing, and the CPUE trend decreasing. It concluded that overfishing is occurring and it is highly likely the silky shark stock is overfished (Rice and Harley 2013). As a result, the WCPFC prohibited the landing of *C. falciformis,* however with high mortality in purse seine fisheries the stock will continue to be impacted by fishing pressure. In the eastern Pacific Ocean, where an IATTC stock assessment is underway, the population is in decline, especially in the south (Aires-da-Silva et al. 2013).

In the Eastern Tropical Pacific, silky sharks constitute one of the main species caught in longline fisheries, ranking as the third or fourth most important component of the catch. It has been demonstrated that both relative abundance and size of silky sharks have declined during the last 10 years (Whoriskey et al., 2011; Dapp et al., 2013). Based on data for purse-seine sets on floating objects, the estimated indices of relative abundance of medium and large sized *C. falciformis* from 1994-2004 showed decreasing trends (IATTC 2013). Between 1994-2004, silky shark bycatch in the eastern Pacific Ocean purse seine fishery declined 60-80% (Minami et al. 2007, Galván-Tirado et al. 2013). While the data suggested the *C. falciformis* population may have experienced some stability following the very steep declines observed during the late 1990s and early 2000s, the most recent purse-seine CPUE showed declines for all sizes of silky shark in the northern eastern Pacific Ocean over the past two years (Aires-da-Silva et al. 2013).

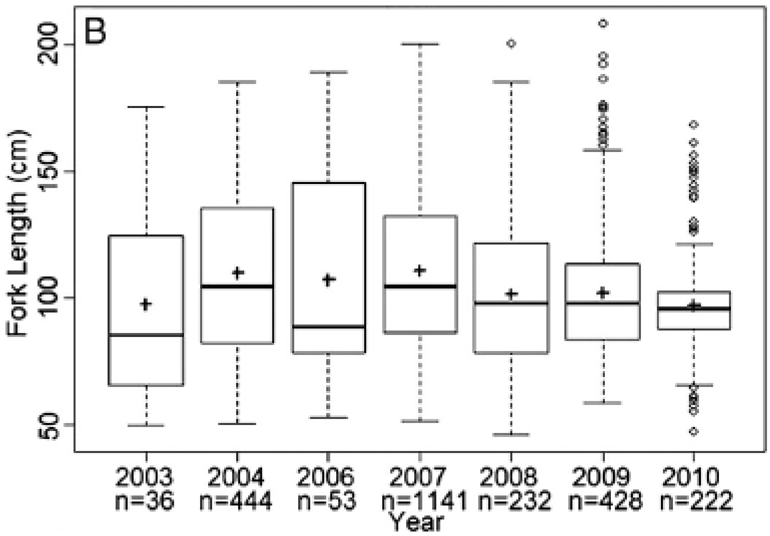


Figure 2: Observed fork lengths of silky sharks from 2003-2010. (F = 9.684, df = 7, 2554, p b 0.0001). Figure taken from Dapp et al. 2013

Atlantic Ocean

In the Gulf of Mexico, silky sharks were historically one of the most commonly caught shark species, but subsequently experienced drastic population declines. In the 1950s, *C. falciformis* were found on 35% of sets and accounted for 24% of all sharks caught in the longline fishery. Catch rates then declined from 1.71 (±3.49 SD) per 1000 hooks in the 1950s to 0.10 (±0.42 SD) per 1000 hooks in the 1990s (Baum and Myers 2004). The authors estimate this decline in catch rate equates to a 10-fold decline, or 91.2%, in *C. falciformis* abundance in 40 years in the Gulf of Mexico. The mean size is also notably smaller than during the 1950s, with silky sharks averaging 97 cm in the 1990s, which is well below the size of maturity of 180 cm for the region (Baum and Myers 2004). Based on this study and others (e.g. Baum et al. 2003), the authors suggested that *C. falciformis* are under serious risk of extirpation (Baum and Myers 2004). Baum and Myers' conclusions were the subject of debate, particularly for coastal species (Burgess et al 2005), but their findings have been defended strongly (Baum and Myers 2005).

Off the southeastern coast of the U.S., large declines in relative abundance have been seen for *C. falciformis*. Catch per unit effort (CPUE) observed in the pelagic longline fishery was 11.22 in 1981-83 and 3.49 in 1992-2000 (Beerkircher et al. 2002), a decline of 69% in 10-20 years. More than 95% of the catch from 1992-2000 was immature individuals (Beerkircher et al. 2002). While 26% of the silky sharks caught were released alive, 44% were discarded dead and 30% were retained (Beerkircher et al. 2002). While variable, overall standardized catch rates for *C. falciformis* in the Atlantic, including the Gulf of Mexico and Caribbean, experienced a 72% decline in abundance from 1992-1997, as derived from CPUE in longline reports (Cramer 2000). From 1992-2005 in the same region, including Gulf of Mexico and Caribbean, pelagic longline logbooks noted a 50% decline and the pelagic longline observer program noted a 46% decline (Cortés et al. 2007). According to U.S. pelagic longline fishery observer data for the northwest Atlantic, the coastal shark group, dusky, silky, and night sharks, were estimated to have declined by 76% between 1992-2005, but these aggregated data do not allow species-specific trends to be produced (Baum and Blanchard 2010). It has been estimated that fishing mortality in the northwest Atlantic would need to be reduced by ~60%, as a minimum baseline, to ensure the survival of silky sharks (Myers and Worm 2005).

C. falciformis are ranked first in vulnerability to the Atlantic pelagic longline fishery (Cortés et al. 2010). Retention of the species was subsequently prohibited by the International Commission for the Conservation of Atlantic Tuna (ICCAT Recommendation 2011-08). Reported silky shark catches in the Atlantic have been declining over the past 20 years, despite efforts to improve catch recording, but there has not been a noticeable further drop since the ICCAT prohibition (FAO FishStat 2016).

4.5 Geographic trends

No trends identified. See 4.4.

5. Threats

The greatest threat to the silky shark is unsustainable levels of fisheries mortality, in target shark fisheries, as a utilized bycatch, particularly of industrial tuna fisheries on the high seas, and a discarded bycatch species. Global populations have declined markedly as a result, as documented in the IATTC and WCPFC stock assessments for *C. falciformis* populations, logbook and catch analyses, fisher observations and the scientific literature (see above). The products from these fisheries enter international trade.

In recent ecological risk assessments, *C. falciformis* ranked as the second most vulnerable shark species for tuna purse seine gear and fourth for tuna longline gear in the Indian Ocean (IOTC WPEB 2012). An ecological risk assessment in the Atlantic Ocean identified *C. falciformis* as the most vulnerable of 12 pelagic elasmobranch species to pelagic longline fisheries, because the combination of low productivity and high susceptibility to pelagic longline gears puts silky sharks at high risk of overexploitation (Cortés et al. 2010).

Silky sharks are the most commonly caught sharks in longline and purse seine gear in tropical waters (Beerkircher et al. 2002, IATTC 2013, Clarke et al. 2011). Total fishery-induced mortality of sharks caught in Indian Ocean purse seines was 81%, with about half of live discards from purse seines suffered delayed mortality (Poisson et al. 2014). Juvenile *C. falciformis*, especially those up to three years old, are also particularly vulnerable to entanglement in FADs with dangling nets, which are widely used in purse seine fisheries (Filmalter et al. 2013). They have also been found to be vulnerable to shallow set longline fisheries and purse seine fisheries targeting the smaller tuna and mahi mahi that occur in the upper 50 meters, due to their depth and temperature preferences (Kohin et al. 2006). In addition to being caught as bycatch that is frequently utilized for fins, *C. falciformis* are targeted within some intensive coastal multispecies fisheries that operate in the Indian Ocean and off the Pacific coast of Central America (Galván-Tirado et al. 2013).

The fourth largest catcher of sharks in the world is the Taiwanese fleet, accounting for 6% of the global figures (which could be an under estimate) (Vanson Liu et al. 2013). The silky shark is one of the main species caught by this fleet. DNA barcoding of shark filets from the market in Taiwan found that 23% of the samples were *C. falciformis* sharks, although *C. falciformis* represented only 1.04% of the total landings (Vanson Liu et al. 2013). According to the authors, these results suggest an increase in *C. falciformis* exploitation in recent years, landings from other harbors, or unreported landings.

C. falciformis are also the most commonly caught shark species in the eastern Pacific Ocean, in both the longline and purse seine fisheries. Commonly referred to as “punta negra” by fishermen, silky sharks were often misidentified as blacktip sharks, leading to higher catch rates than previously reported (Román-Verdesoto and Orozco-Zöller 2005).

C. falciformis are commonly taken in fisheries in the Indian Ocean. They comprise 90% of the elasmobranch bycatch of Indian Ocean tuna purse-seine fisheries using FADs (Gilman 2011; Filmalter *et al*. 2013). *C. falciformis* is also an important bycatch of industrial pelagic longline tuna fisheries, and a target of semi-industrial, artisanal, and recreational fisheries (IOTC 2013). In Maldivian fisheries, silky sharks made up 85% of targeted longline catch targeting for shark species. Iran and Sri Lanka reported that 25% and 11%, respectively, of their catch in gillnets was *C. falciformis*.

In addition to direct mortality in these fisheries, *C. falciformis* are often entangled in the netting hung beneath many of the drifting FADs associated with the tuna purse seine fishery. The mortality found with these FADs in the Indian Ocean was 5-10 times higher than the previous estimates of bycatch in the purse seine fishery. Between 480,000–960,000 silky sharks were estimated killed from this fishery in the Indian Ocean per year (Filmalter et al. 2013).

Overexploitation of a particular sex or stage could disrupt the population dynamics and cause a collapse. In the Red Sea, female silky sharks, predominantly, were found to aggregate on the reefs (Clarke, C. et al. 2011). It is unclear whether this is part of an isolated population or part of a larger population within the Indian Ocean. If these females are targeted, it could impact the status of silky shark population throughout the Indian Ocean, suggesting the need for collaborative management (Clarke, C. et al. 2011).

6. <u>Utilization and trade</u>

There are numerous difficulties in obtaining data for the evaluation of utilization and trade in silky sharks. Historically, according to FAO FishStat, only 15 States have ever reported species-specific silky shark capture production to FAO; this species is commonly aggregated into higher-level generic catch categories. With the exception of four categories for family Squalidae, none of the 14 commodity categories used by FAO for chondrichthyans are taxon-specific. The use of commodity codes also varies considerably between States, further complicating product traceability by species and origin. Information on trade in silky shark products, other than fins, is mostly gleaned from field observations

6.1 National utilization

C. falciformis are utilized nationally for its meat, which is cooked, smoked or dried-salted, and to a lesser extent for its skin (for leather), and liver oil (for vitamin A or waterproofing vessels). Shark flesh is consumed in Oman (Henderson et al. 2009) and many other countries where silkies are landed from artisanal or industrial fisheries. *C. falciformis* represented 23% of the sampled shark fillets in Taiwanese markets, demonstrating the high level of consumption of meat here. The fins from silky shark landings may also be utilized nationally in those countries that have domestic shark fin processing industries.

Prior to mid-20th century, the Republic of Maldives had a small shark fishery, targeting sharks for domestic liver oil consumption (Ushan et al., 2012). However, as international demand for shark fin and salted shark meat grew in the 1970s, so did the Maldivian shark fishery, with the silky shark considered a major targeted species of the fishery (Sinan, 2003). Annual shark catch grew from an estimated 575mt to approximately 1,100 to 2,000mt from 1975-1998, when a moratorium was established (MRC, 2008).

Silky sharks are among several shark species that are valuable for national dive ecotourism industries. In the Maldives, the ecotourism industry expanded significantly during the 1980s, with visitors specifically interested in diving with sharks, among other marine species. The parallel growth in the fisheries and ecotourism sectors led to an increase in conflicts between the two industries that were addressed by the Ministry of Fisheries and Agriculture (see Section 7.1). In 1992, the shark diving industry alone earned approximately US$2.3 million dollars to the Maldives compared to US$0.7 million from the shark fisheries (Anderson and Ahmed, 1993). In consideration of these numbers, and to address the competition for resources, the Republic of Maldives declared a ten year moratorium on shark fishing in the 12 miles surrounding the seven most prominent tourist atolls in the Maldives in 1998 (Maldives Ministry of Fisheries and Agriculture - No. FA-A1/29/98/39, 1998). Upon conclusion of the moratorium in 2009, tourism had grown to account for 30% of the Maldivian GDP, with the fisheries sector accounting for approximately 3% (Worldbank, 2010). The revenue produced by the diving industry in the Maldives had grown to over US$7 million, and the Maldivian government therefore expanded the shark fishing ban to include any fishery killing, capturing or extracting any shark species inside and within 12 miles from the outer atoll rim of all Maldivian Atolls from the 1st of March, 2009 (Maldives Ministry of Fisheries and Agriculture - No. FA-D/29/2009/20, 2009).

6.2 Legal trade

Silky sharks are caught as a utilised bycatch in tropical high seas pelagic fisheries. This catch enters trade legally, unless taken in contravention of national legislation or Regional fisheries management measures (see section 7). The principal driver of shark catch and trade for many species, including silky sharks, is the international market demand for their fins (Clarke et al. 2006), although the meat of this species is also valuable (Dent and Clarke, 2015). Regardless, the meat may be discarded from some fisheries, while the fins are often retained if finning prohibitions are not in force because of their high value in international trade.

International shark trade information is not documented to the species level for sharks in the Harmonized Tariff Schedule. Therefore, species-specific information about quantity or value of imports or exports is not available through the tariff schedule. However, information on the scale of international trade in silky shark fins has been obtained by examination of the Hong Kong shark fin market. Hong Kong shark fin traders use 30–45 market categories of fins (Yeung et al. 2000), but the Chinese names of these categories often do not correspond to the taxonomic names of shark species (Huang 1994). In the case of silky sharks, genetic analyses have determined that there is very close correspondence between the trade name Wu Yang (五羊) and the fins of silky shark (Clarke et al. 2006a).

From 1980 to 1990, the global trade in silky shark fins is estimated to have represented a minimum of 3.5% of the global fin market (Clarke et al 2006a, Clarke 2008) and 4.4% of the market from 1999 to 2001 (Clarke 2004). From these numbers, between half a million and one and half million silky sharks were estimated to have been utilized every year for their fins (Clarke et al. 2006b). These are minimum values, because small shark fins were not included in the above analyses, and a large proportion of the pelagic bycatch of silky sharks is juvenile.

The current estimated proportion of silky shark fins in the international shark fin trade is 2.55-7.47% with a median of 4.6% (Fields, submitted), indicating that an increasing number of silky sharks are in trade, despite noted population declines and the creation of fisheries management measures in several RFMO's. This, along with continued high landing statistics since RFMO management measures were put in place (annex 3 table 1), indicates that current management measures are insufficient to protect this vulnerable species, and that given the high demand for this species fins, without further regulation to stem the international trade of the species, these declines will most likely continue.

6.3 Parts and derivatives in trade

Fins: Silky shark fins are light grey in color with a rounded apex and a convex trailing edge (Abercrombie et al., 2013), and are among the most distinctive and common products in the Asian shark fin trade. Fins are visually identifiable without genetic analysis, and Hong Kong traders seldom mix them with other species (Clarke et al. 2006a). Clarke et al. (2004; 2006a) estimated that silky shark fins comprise about 3.5% by weight of the total fin trade. Molecular genetic testing of 23 fin samples that were imported from three oceans and collected from nine randomly sampled Hong Kong fin traders demonstrated 80% concordance between the fin trade name "Wu Yang" (五羊) and silky shark. The 20% discrepancy may arise from sampling error: a very similar trade name uses the same roman characters but different Chinese characters for shortfin mako shark fins (Clarke et al. 2006).

Meat: Fishing vessel hold space for retaining shark carcasses is often limited and reserved for higher-value species, such as tunas. As silky shark meat is of lower relative value, it may be discarded and is less likely to enter international trade than this species' fins.

Other products, including **skin, liver oil, cartilage, and teeth**, are considered low grade, not traded in large quantities, and are not separately recorded in trade statistics (Clarke 2004). Demand for these products appears to fluctuate over time with changes in fashion, medical knowledge, and the availability of substitutes.

6.4 Illegal trade

Silky shark is a prohibited species in fisheries managed by two Regional Fisheries Management Organizations (RFMOs): ICCAT and WCPFC (see Section 7.2). Furthermore, most RFMOs and several States prohibit shark finning (discarding the carcass at sea and retaining the fins). A few countries (e.g. Bahamas, The Maldives, the Marshall Islands, the Federated States of Micronesia, and the U.S. territories of Guam and the Commonwealth of the Northern Mariana Islands) ban trade in all or some shark products. Products traded in contravention of any of these regulations are illegal, but as RFMOs have limited compliance mechanisms, the extent of illegal trade is unknown.

6.5 Actual or potential trade impacts

Demand from international shark fin markets is a driving economic force behind the unsustainable mortality of silky sharks caught as bycatch and in target fisheries, and the depletion of stocks worldwide. Regulation of the fin trade through an Appendix II listing of this species is necessary to ensure that the trade is sustainable, and does not drive the species to extinction, and to support the fisheries management and trade measures adopted by Parties within their own EEZs and by RFMOs on the high seas.

7. Legal instruments

7.1 National

Under the Fisheries Law of Maldives (Law no. 5/87), the Ministry of Fisheries and Agriculture (MoFA) is given the responsibility of developing and overseeing all types of fisheries undertaken in the Maldives. Article 3 of the Fisheries Law authorizes MoFA to develop and implement fisheries regulations to manage the fisheries and marine resources of the country, and under Article 10 the Ministry has the authority to protect any marine species from capture or fishing. All sharks, including silky sharks, have been fully protected within the EEZ of the Maldives since 2010 under Article 10 of Law number 5/78, which prohibits catching, retaining on board, transshipping, landing, storing, selling or offering for sale any shark species. This declaration of the Maldives as a shark sanctuary followed two earlier regulations: a ten year moratorium on shark fishing in the 12 miles surrounding the seven most prominent tourist atolls in the Maldives in 1998 (Maldives Ministry of Fisheries and Agriculture - No. FA-A1/29/98/39, 1998), expanded in 2009 to cover any fishery killing, capturing or extracting any shark species inside and within 12 miles from the outer atoll rim of all Maldivian Atolls (Maldives Ministry of Fisheries and Agriculture - No. FA-D/29/2009/20, 2009).

Silky sharks are also protected under legislation enacted by French Polynesia, Palau, Honduras, The Bahamas, The British Virgin Islands, the Federated States of Micronesia and the Marshall Islands, which prohibit shark fisheries throughout their Exclusive Economic Zones. Other countries have marine protected areas where no shark fishing is allowed, including Cocos Island in Costa Rica, Malpelo Island in Colombia, the Galapagos Islands in Ecuador, the Banc d'Arguin National Park in Mauritania, and the Marine Protected Areas in Guinea-Bissau.

The shark finning bans implemented by 21 countries, the European Union (EU), and nine Regional Fisheries Management Organizations, could help reduce silky shark mortality, if they cause a larger proportion of the catch to be released alive.

7.2 International

C. falciformis is listed on Annex I, Highly Migratory Species, of the UN Convention on the Law of the Sea. Fisheries management for this species on the high seas falls under the remit of the tuna RFMOs, because the species is mostly taken in association with high seas industrial tuna fisheries, and other relevant regional fisheries bodies. ICCAT, IATTC, WCPFC and IOTC and other RFMOs have adopted finning bans that require the full utilization of all captured sharks and encourage release of incidentally caught live sharks.

In response to growing concern over the status of large pelagic sharks, some RFMOs have undertaken stock assessments for species with sufficient data, and ecological risk assessments for those without enough data, to help guide their decisions for shark species that need protection. They have also taken measures to improve data collection to the species level, reduce bycatch, control finning, and a few prohibit landings of the most threatened species.

The International Commission for the Conservation of Atlantic Tuna (ICCAT 2011) and the Western and Central Pacific Fisheries Commission (WCPFC 2013) prohibit retaining on board, transshipping, or landing any part or whole carcass of silky shark in the fisheries covered by these Conventions. The Indian Ocean Tuna Commission (IOTC) recognises the depleting stock status of silky sharks in the Indian Ocean, however it has not passed a management measure to date (IOTC, 2013, 2014 & 2015)

While the ICCAT and WCPFC prohibitions protect the silky shark in parts of its Atlantic and Pacific range, and should prevent international trade in products of this species from their fisheries, RFMO compliance measures are very limited. The application of legal acquisition and non detriment findings, and certificates for introductions from the sea under CITES would complement and significantly reinforce RFMO actions with international trade regulation measures. In the absence of a CITES listing, however, RFMO prohibitions are unlikely to be sufficient to fully protect the silky shark from the continued fishing pressures that are driving its rapid depletion.

In November 2014, the Convention on the Conservation of Migratory Species (CMS) listed the silky shark on Appendix II of the Convention. In February 2016, the Second Meeting of the Signatories to the CMS Migratory Sharks MOU added the silky shark to the MOU Annex

8. Species management

8.1 Management measures

The International Plan of Action (IPOA) for the Conservation and Management of Sharks urges all States with shark fisheries to implement conservation and management plans, but is voluntary. In 2012, only 47 countries (33% of the 143 countries reporting catches to FAO) had adopted an NPOA. Thirty of these have each reported less than 1% of the world's shark catches to FAO since 2000. Twenty-six shark fishing states and entities were responsible for at least 1% of global shark catches reported to FAO, totaling 84% of catches in aggregate. Nine of the 26 (35%) had not yet adopted their NPOA. At that time, four of the world's major shark fishing nations had not yet addressed implementation of the IPOA– Sharks (Fischer *et al*. 2012).

None of the national and regional regulations described above cover the entire range of the silky shark, nor do they regulate international trade. There are no catch limits for stocks outside the limited areas in which silky shark fisheries are prohibited. *C. falciformis* populations are likely to continue to decline until globally applicable, enforceable measures are put in place throughout its range in order to protect it from overexploitation. The implementation of a CITES Appendix II listing will complement existing management measures, extend trade controls to areas where there is no management, and ensure that the international trade in this species, which drives unsustainable fisheries mortality, is legal and sustainable.

8.2 Population monitoring

Population monitoring requires collection of catch data as initial input for a stock assessment. Catch and landings data for silky shark are, however, incomplete because silky sharks are grossly under-reported. If reported at all, they are usually combined with other carcharhinid shark species. Historically, only 15 countries and fishing entities have reported silky shark catches to FAO, with just four or five reporting more than 100 tonnes per annum. Global catches reported to FAO during the past decade have averaged less than 5,000t per annum (FAO FishStat), although Clarke et al (2006) estimated that some 40,000 to 50,000t of silky sharks are utilized annually in the shark fin trade.

In 1996, ICCAT began requesting that its contracting Parties submit shark data using a form that lists eight species of pelagic sharks. Other RFMOs have followed suit and request data on shark catches, particularly those most commonly caught. Each member of IATTC is required to annually report data for catches, effort by gear type, landing and trade of sharks by species, where possible. WCPFC also requests data on sharks to be submitted to the Commission, particularly on the key shark species, such as silky shark. In 2011, the IOTC Working Party on Ecosystems and Bycatch recommended that all members be required to submit catch data by species from longline, purse seine, and gillnet fishing vessels of the most commonly caught shark species, including silky sharks (IOTC 2011).

8.3 Control measures

8.3.1 International

Other than through the voluntary measures under CMS Appendix II and the Migratory Sharks MOU, and the protection under ICCAT and WCPFC, there are no focused species-specific international management measures in place for silky sharks; which are unmanaged over much of their range.

8.3.2 Domestic

See Section 7.1.

8.4 Captive breeding and artificial propagation

N/A

8.5 Habitat conservation

See Section 7.1.

8.6 Safeguards

N/A

9. Information on similar species

Several excellent guides, from FAO and other sources, enable silky sharks to be identified in the field and their fins in trade (Abercrombie et al. 2013; Abercrombie 2016). The fins are sufficiently distinctive to have their own species-specific trade name in the Hong Kong dried marine seafood market. FAO (Marshall and Barone, 2016) describes some similarities between the fins of Blue shark *Prionace glauca*, Silvertip *Carcharhinus albimarginatus*, Spot-tail *C. sorrah*, Dusky *C. obscurus* and Sandbar shark *C. plumbeus*, but explains how to distinguish between them.

See Annex 5 on how to identify silky sharks in trade.

10. Consultations

See Annex 4.

11. Additional remarks

11.1 CITES Provisions under Article IV, paragraphs 6 and 7: Introduction from the sea

Most silky shark fisheries take place on the high seas or take sharks from straddling and/or trans-boundary stocks, and are very poorly reported. High seas fisheries are either prohibited (in ICCAT and WCPFC fisheries, where there is little or no compliance monitoring in place), or completely unregulated. A CITES Appendix II listing requires catches to be legally acquired and accompanied by a non-detriment finding (NDF). These measures would also apply to introductions from the sea. FAO (2010a) considered that the requirements of a listing in Appendix II could improve the regulation of international trade and the control of high seas catches through the use of certificates of introduction from the sea accompanied by NDF. Members of ICCAT and WCPFC would not be able to issue such permits or certificates, thus improving compliance with these RFMOs' prohibitions. Silky shark products could only enter trade from other areas if they were taken from a sustainably exploited fishery, thus requiring management action to be adopted by other RFMOs and fishing States.

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Life history parameters for silky shark

Region	**Size at sexual maturity (cm TL)**	**Age at sexual maturity (years)**	**Litter size**	**Gestation period**	**Generation time**	**Product ivity (r)**	**Reference**
Northwest Atlantic	Male: 215-225 Female: 232-246				14.4	0.078	Bonfil 2008; ICCAT 2012
South Atlantic		Female: 9.5	12.5		16.5	0.042	Branstetter 1987; ICCAT 2012
Atlantic						0.063	Cortés et al. 2010
Gulf of Mexico	Male: 210–220 Female: >225	Male: 6–7 Female: 7–9		12 month			Branstetter 1987
Equatorial Atlantic	Male: 210- 230 Female: 230		4 -15				Hazin et al. 2007
Equatorial Atlantic	Male: 180-200 Female: 205- 210		7-25				Lana 2012
Western-central Pacific	Male: 210-214 Female: 202-218						Bonfil 2008
Eastern Pacific (Baja California Sur, Mexico)	Male: 182 Female: 180		2-9				Hoyos-Padilla et al. 2011
Baja California Sur, Mexico		7-8 (both)					Sánchez-de Ita, et al. 2011
Eastern Indian Ocean	Male: 207 Female: 215	Male: 13 Female: 15	9-14	12 months	11-16		Hall et al. 2012 IOTC 2015
Northeastern Taiwan	Male: 212.5 (50%) Female: 210-220	Male: 9.3 Female: 9.2-10.2	8-10				Joung et al. 2008

Summary of population and abundance trend data for silky shark

Year	Number of generation periods	Location	Data	Trend	Reference
1992-2005	1	NW Atlantic Ocean	Commercial pelagic fishery logbook	**50% decline***	Cortés et al. (2007)
1992-2003	1	NW Atlantic Ocean	Commercial pelagic fishery logbook	**61% decline***	Baum et al. (2003)
1992-2003	1	NW Atlantic Ocean	Commercial pelagic longline observer program	**46% decline***	Cortés et al. (2007)
1992-2005	1	NW Atlantic	U.S. pelagic longline fishery observer data	**76% decline (for all coastal sharks)**	Baum and Blanchard (2010)
1992-1997	0	Atlantic Ocean	CPUE in longline reports	**72% decline**	Cramer (2000)
1954-1957 and 1995-1999	0	Gulf of Mexico	Fishery survey and commercial pelagic longline observer program	**91.2% decline***	Baum and Myers (2004)
1954-1957 and 1995-1999	0	Gulf of Mexico	Average size	**84% decline**	Baum and Myers (2004)
1951-1958 and 1999-2002	0	Central Pacific Ocean	Fishery survey and commercial pelagic longline observer program	**52% decline***	Ward and Myers (2005)
1951-1958 and 1999-2002	0	Central Pacific Ocean	Average size	**38% decline**	Ward and Myers (2005)
1995-2013	1	Western and Central Pacific Ocean	Stock estimate	**67% decline in spawning biomass**	Rice & Harley (2013)
1996 – 2006	0	Eastern Pacific Ocean	Commercial purse seine observer program	**~75% decline (inferred from figure)**	IATTC (2014)
1995–2000 & 2004–2006	0	Central Pacific Ocean	Commercial pelagic longline observer program	**54% decline in deep sets**	Walsh et al. (2009)
1994-2004	0	Eastern Pacific Ocean	Commercial purse seine fishery reports	**80%**	Minami et al. (2007), Galván-Tirado et al. (2013)
1988-2008	1	Indian Ocean	Longline fishery reports	**90%**	Anderson and Juaharee (2009)

*Indicates the data has undergone a statistical standardization to correct for factors unrelated to abundance

Figure 1

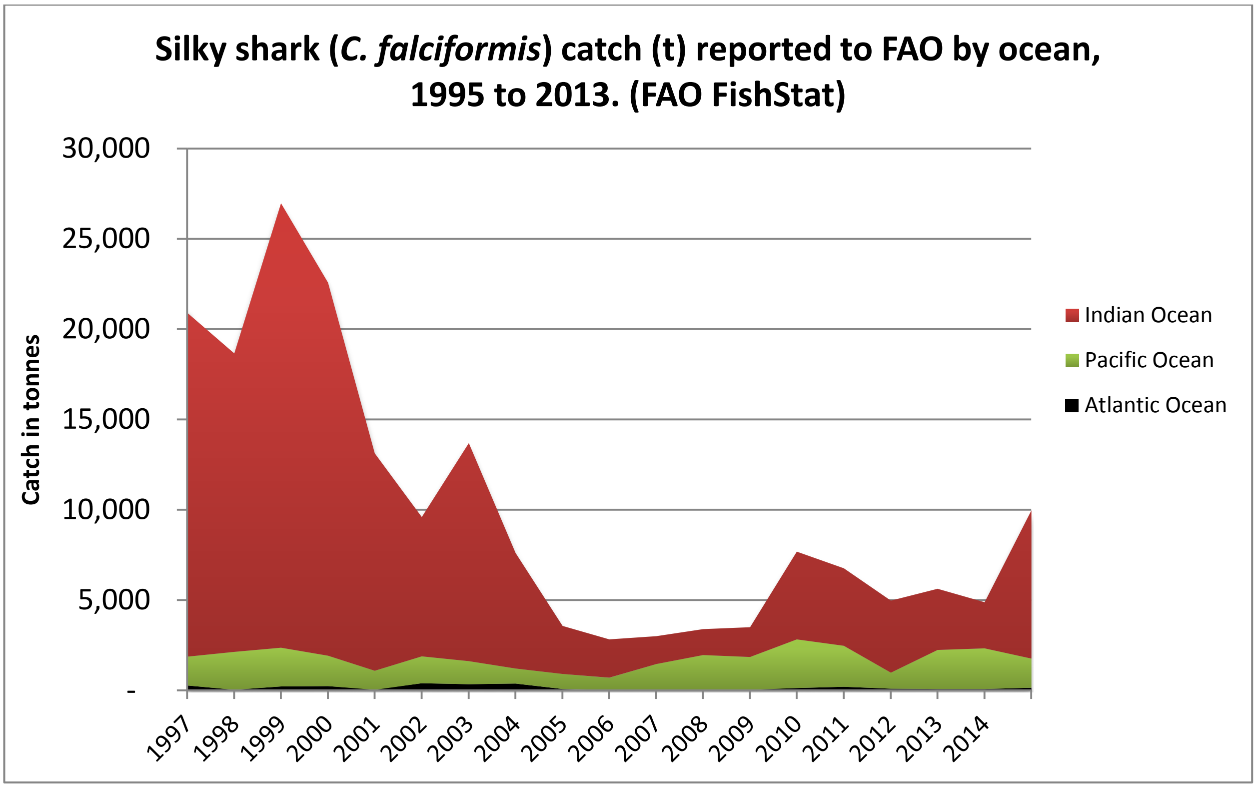


Figure 2

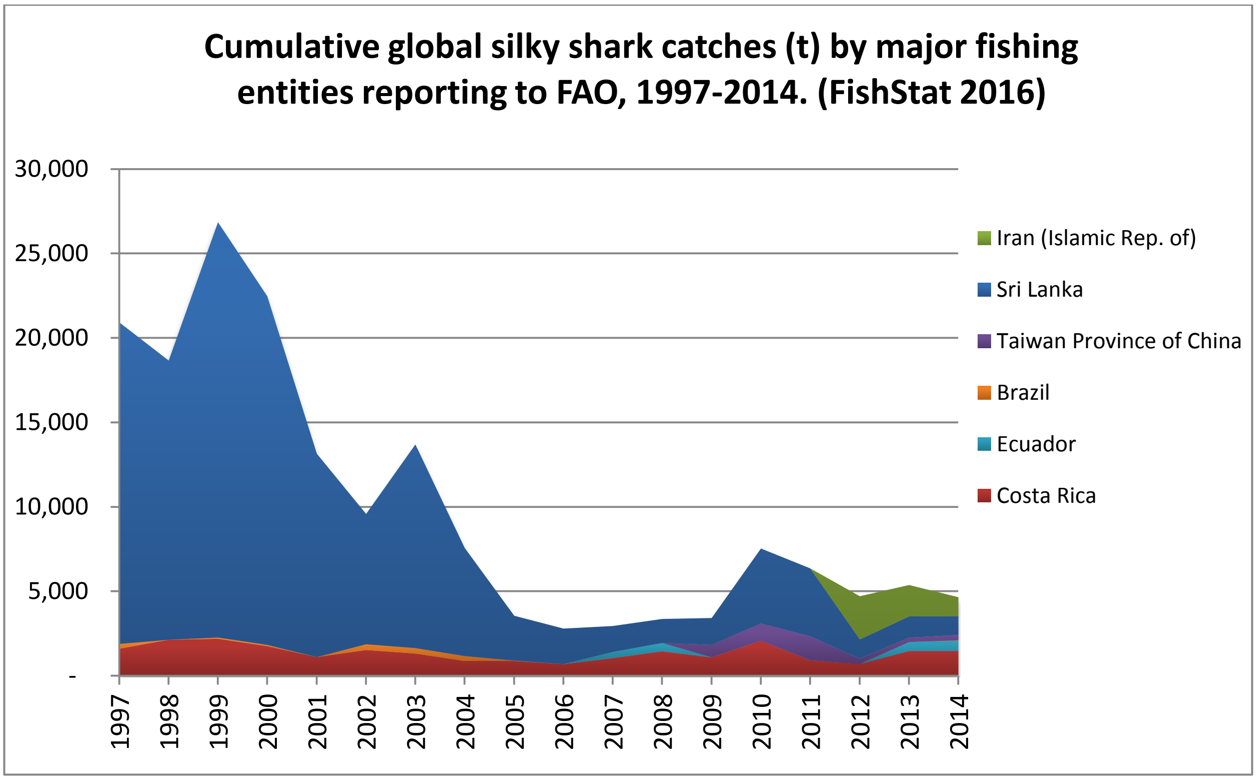
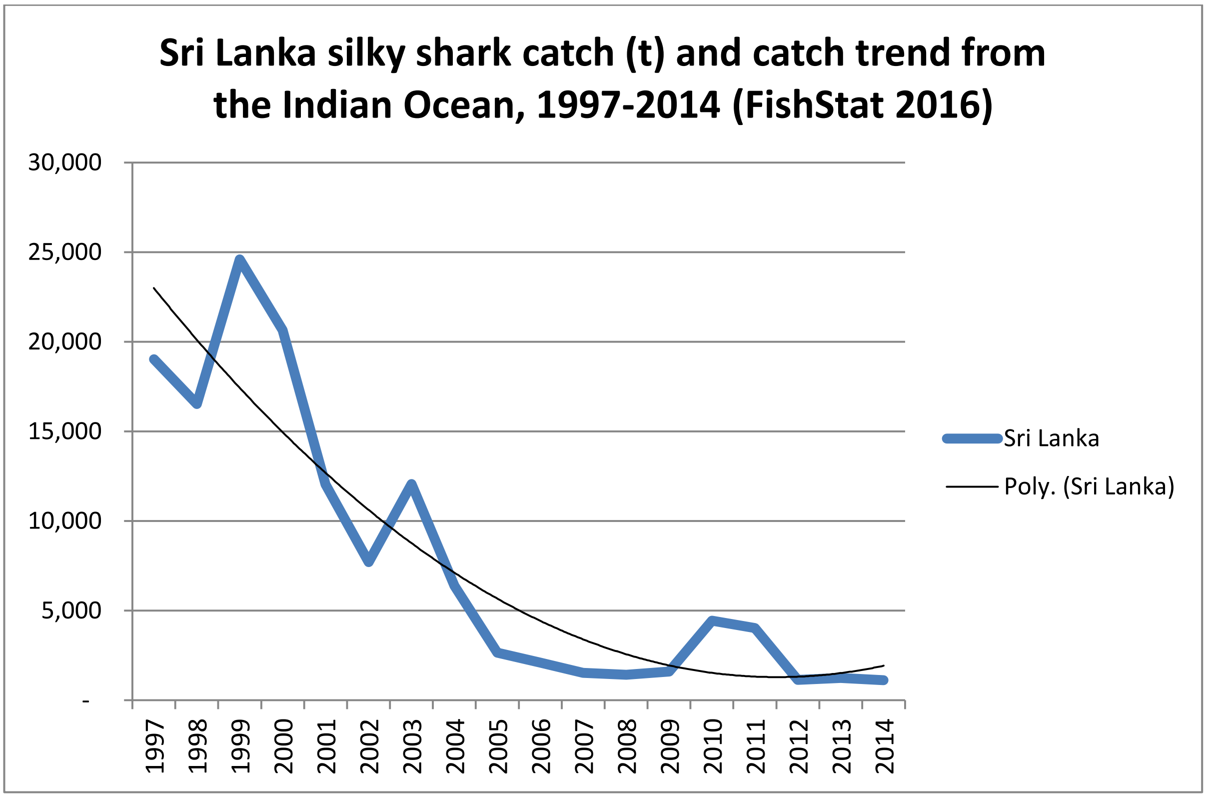


Table 1 - Cumulative global silky shark catches (t) by major fishing entities reporting to FAO, 1997-2014. (FishStat 2016)

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Sri Lanka	19,030	16,528	24,605	20,651	12,041	7,719	12,068	6,397	2,661	2,111	1,538	1,425	1,603	4,447	4,025	1,138	1,250	1,122
Costa Rica	1,595	2,121	2,179	1,741	1,090	1,523	1,314	876	866	682	1,033	1,431	1,084	2,070	899	698	1,458	1,458
Iran (Islamic Rep. of)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2,560	1,865	1,107
Taiwan Province of China	...	...	...	...	...	...	...	...	...	...	...	5	730	1,015	1,430	284	261	321
Ecuador	...	...	...	...	...	...	...	...	...	...	373	500	...	...	...	...	524	613
Brazil	279	...	70	80	...	328	307	286	20	-	...	...	...	...	...	21	14	16
Fiji, Republic of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	250	250	250	250
Spain	2	11	...	...	...	31	4	16	27	24	39	21	24	97	86	15	-	-
Liberia	...	...	110	99	...	...	...	40	...	...	...	...	...	...	...	...	...	...
Portugal	-	-	-	-	-	-	-	-	1	4	9	2	54	35	76	7	...	...
Tanzania, United Rep. of	...	...	...	...	...	...	...	...	-	14	2	5	5	9	...	...	1	1
Mozambique	-	-	-	-	-	-	-	-	-	...	...	...	...	4	4	4	...	...
Guatemala	...	...	...	...	...	...	...	...	...	...	11	...	...	...	...	...	...	...
Togo	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	2	...	...
United States of America	-	-	-	0 0	-	-	-	0 0	0 0	0 0	2	-	0 0	-	-	-	1	-
Totals - Quantity (tonnes)	**20,906**	**18,660**	**26,964**	**22,571**	**13,131**	**9,601**	**13,693**	**7,615**	**3,575**	**2,835**	**3,007**	**3,389**	**3,500**	**7,682**	**6,770**	**4,979**	**5,624**	**4,888**

Figure 4


Sri Lanka silky shark catch (t) and catch trend from the Indian Ocean, 1997-2014 (FishStat 2016)
30,000
25,000
20,000
15,000
10,000
5,000
-
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sri Lanka
Poly. (Sri Lanka)

Range States for silky sharks and responses to the consultation

Country	Support Indicated (Yes/No/ Undecided/ No Objection)	Summary of Information Provided
Angola		
Antigua and Barbuda		
Australia		
Bahamas		
Bahrain		
Bangladesh	Yes	Support and cosponsor the proposal
Barbados		
Belize		
Benin		
Brazil		
Brunei Darussalam		
Cambodia		
Cameroon		
Cape Verde		
Chile		
China		
Colombia		
Comoros	Yes	Support and cosponsor the proposal
Costa Rica		
Cote d'Ivoire		
Cuba		
Democratic Republic of the Congo		
Djibouti		
Dominica		
Dominican Republic	Yes	Support and cosponsor the proposal
Ecuador		
Egypt	Yes	Support and cosponsor the proposal
El Salvador		
Equatorial Guinea		
Eritrea		
Federated States of Micronesia		
Fiji	Yes	Support and cosponsor the proposal
France	Yes	The EU and its member states support and cosponsor the proposal
Gabon	Yes	Support and cosponsor the proposal
Gambia		
Ghana	Yes	Support and cosponsor the proposal
Grenada		
Guatemala		

Country	Support Indicated (Yes/No/ Undecided/ No Objection)	Summary of Information Provided
Guinea	Yes	Support and cosponsor the proposal
Guinea-Bissau		
Guyana		
Honduras		
India		
Indonesia		
Iran		
Iraq		
Israel		
Jamaica		
Japan	No	Japan believes that the conservation and management of fishery resources must be implemented through appropriate management of fisheries by each country or by international organizations such as Regional Fisheries Management Organizations (RFMOs).
Jordan		
Kenya		
Kiribati		
Kuwait		
Liberia		
Madagascar		
Malaysia		
Maldives	Yes	Support and submitted original proposal
Marshall Islands		
Mauritania	Yes	Support and cosponsor the proposal
Mauritius		
Mexico	Undecided	Supplied comments that were incorporated into the proposal where relevant
Morocco		
Mozambique		
Myanmar		
Nauru		
Netherlands	Yes	The EU and its member states support and cosponsor the proposal
New Zealand		
Nicaragua		
Nigeria		
Oman		
Pakistan		
Palau	Yes	Support and cosponsor the proposal
Panama		
Papua New Guinea		
Peru		
Philippines		
Portugal	Yes	The EU and its member states support and cosponsor the proposal
Qatar		
Republic of Korea		

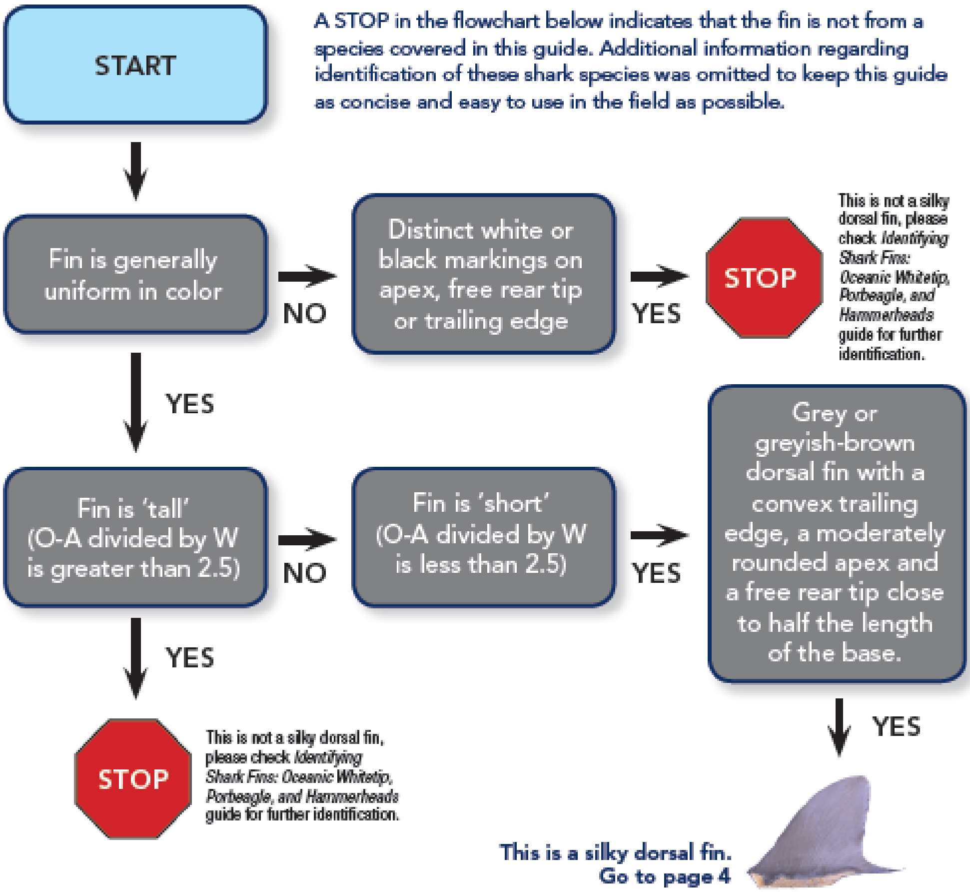
Country	Support Indicated (Yes/No/ Undecided/ No Objection)	Summary of Information Provided
Republic of the Congo		
Saint Kitts and Nevis		
Saint Lucia		
Saint Vincent and the Grenadines		
Samoa	Yes	Support and cosponsor the proposal
Sao Tome-et-Principe		
Saudi Arabia		
Senegal	Yes	Support and cosponsor the proposal
Seychelles		
Sierra Leone		
Singapore		
Solomon Islands		
Somalia		
South Africa		
Spain	Yes	The EU and its member states support and cosponsor the proposal
Sri Lanka	Yes	Support and cosponsor the proposal
Sudan		
Suriname		
Tanzania		
Thailand		
Togo		
Trinidad and Tobago		
Tuvalu		
United Arab Emirates	Yes	Support and cosponsor the proposal
United Kingdom	Yes	The EU and its member states support and cosponsor the proposal
United States of America	Undecided	Comments incorporated into the proposal
Vanuatu		
Venezuela		
Viet Nam		
Yemen		

Non-Range States	Support Indicated (Yes/No/ Undecided/ No Objection)	Summary of Information Provided
Burkina Faso	Yes	Support and cosponsor proposal
Ukraine	Yes	Support and cosponsor the proposal
Austria	Yes	The EU and its member states support and cosponsor the proposal
Belgium	Yes	The EU and its member states support and cosponsor the proposal
Bulgaria	Yes	The EU and its member states support and cosponsor the proposal
Croatia	Yes	The EU and its member states support and cosponsor the proposal
The Republic of Cyprus	Yes	The EU and its member states support and cosponsor the proposal
Czech Republic	Yes	The EU and its member states support the proposal

Denmark	Yes	The EU and its member states support and cosponsor the proposal
Estonia	Yes	The EU and its member states support and cosponsor the proposal
Finland	Yes	The EU and its member states support and cosponsor the proposal
Germany	Yes	The EU and its member states support and cosponsor the proposal
Greece	Yes	The EU and its member states support and cosponsor the proposal
Hungary	Yes	The EU and its member states support and cosponsor the proposal
Ireland	Yes	The EU and its member states support and cosponsor the proposal
Italy	Yes	The EU and its member states support and cosponsor the proposal
Latvia	Yes	The EU and its member states support and cosponsor the proposal
Lithuania	Yes	The EU and its member states support and cosponsor the proposal
Luxembourg	Yes	The EU and its member states support and cosponsor the proposal
Malta	Yes	The EU and its member states support and cosponsor the proposal
Poland	Yes	The EU and its member states support and cosponsor the proposal
Romania	Yes	The EU and its member states support and cosponsor the proposal
Slovakia	Yes	The EU and its member states support and cosponsor the proposal
Slovenia	Yes	The EU and its member states support and cosponsor the proposal
Sweden	Yes	The EU and its member states support and cosponsor the proposal

How to identify silky sharks in trade
(excerpts from *Identifying Shark fins: Silkys and Threshers* (Abercrombie 2016))

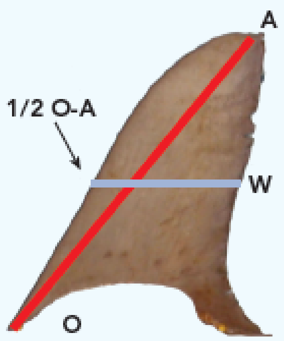
Step 2: : Identify silky first dorsal fins.



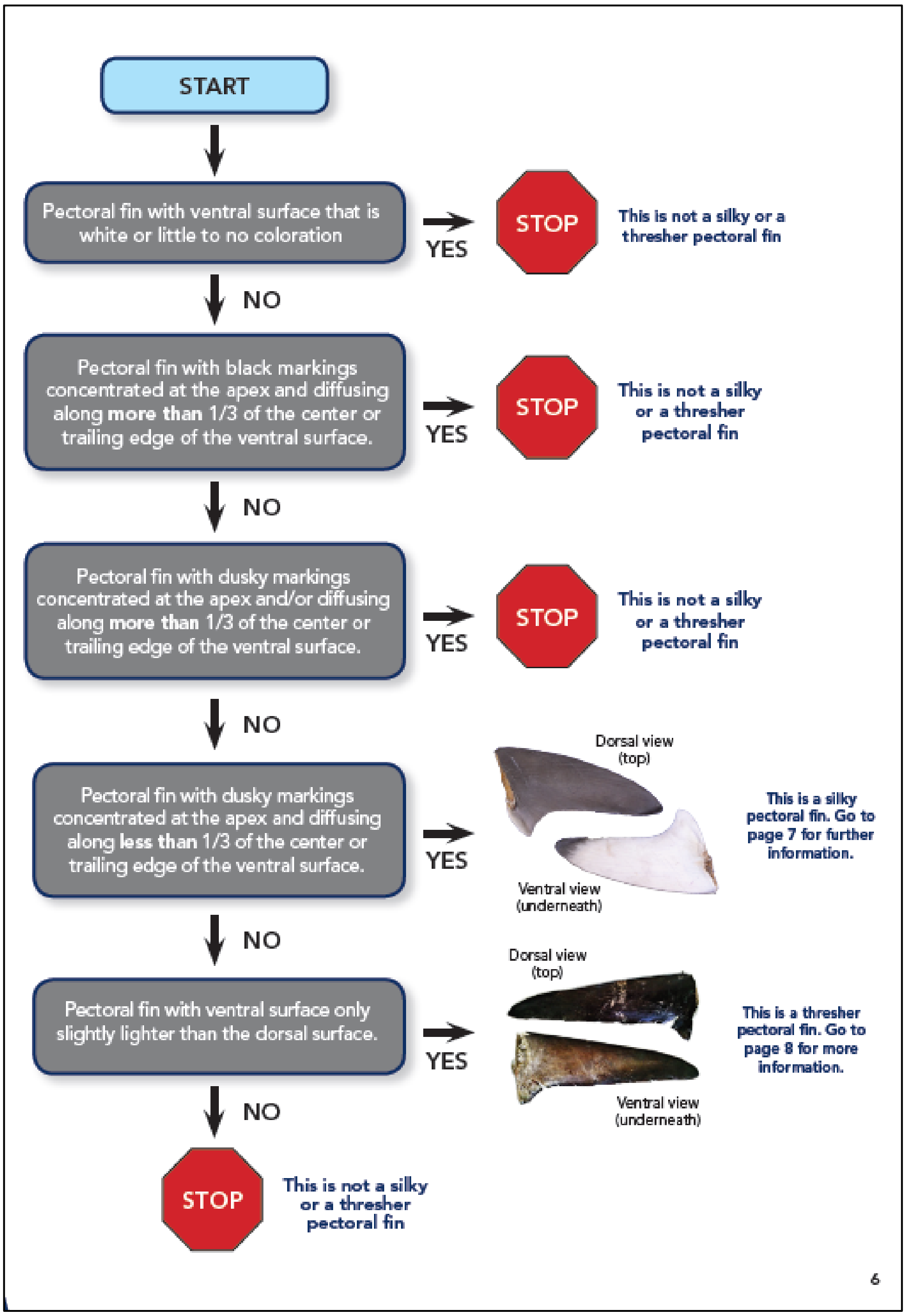
Take fin measurements

1) Measure fin origin to apex (O-A) with a flexible tape measure.
2) Measure the fin width (W) at the halfway point of O-A (i.e., if O-A is 10 cm, measure W at 5 cm along O-A).
3) Divide O-A by W (O-A/W).

Origin, apex, and fin width (measured from leading edge to trailing edge) are landmarks found to be the most useful for species identification purposes, as measurements based on fin height, fin base, and free rear tip were often too variable and dependent on cut and condition of the fin.

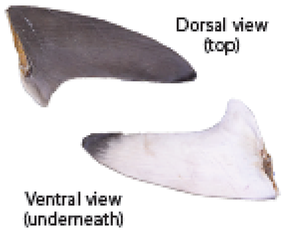


3

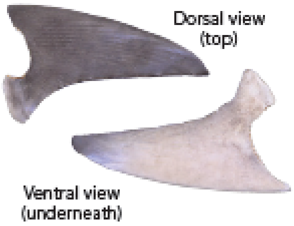

START
Pectoral fin with ventral surface that is white or little to no coloration
YES
STOP
This is not a silky or a thresher pectoral fin
NO
Pectoral fin with black markings concentrated at the apex and diffusing along more than 1/3 of the center or trailing edge of the ventral surface.
YES
STOP
This is not a silky or a thresher pectoral fin
NO
Pectoral fin with dusky markings concentrated at the apex and/or diffusing along more than 1/3 of the center or trailing edge of the ventral surface.
YES
STOP
This is not a silky or a thresher pectoral fin
NO
Pectoral fin with dusky markings concentrated at the apex and diffusing along less than 1/3 of the center or trailing edge of the ventral surface.
YES
Dorsal view (top)
Ventral view (underneath)
This is a silky pectoral fin. Go to page 7 for further information.
NO
Pectoral fin with ventral surface only slightly lighter than the dorsal surface.
YES
Dorsal view (top)
Ventral view (underneath)
This is a thresher pectoral fin. Go to page 8 for more information.
NO
STOP
This is not a silky or a thresher pectoral fin
6

Distinguishing silky pectoral fins from species with pectoral fins of similar size, shape, and/or color

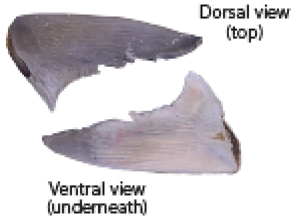
Silky pectoral fins



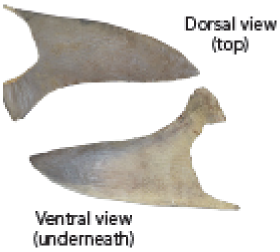
Dusky pectoral fins



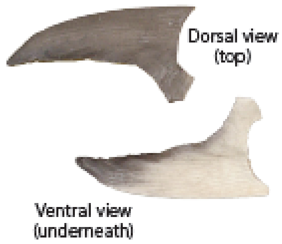
Night pectoral fins



Bull pectoral fins



Caribbean reef pectoral fins



Differentiating silky pectoral fins from those of other shark species requires examination of both the dorsal and ventral surfaces. Silky pectorals are long, with nearly straight trailing edge, and narrowly rounded at the apex. The fin has a smooth texture with small dermal denticles. The dorsal surface is greyish-brown and the ventral surface is white with a visible dusky coloration concentrated at the apex, extending along less than 1/3 of the margin of the trailing edge.

Night and Dusky shark pectoral fins are similar in that they have dusky markings at the apex on the ventral surface. However, silky shark pectoral fins can be easily differentiated from the pectoral fins of these species because the dusky coloration visible at the apex of dusky and night shark pectoral fins is less concentrated (or obvious), typically diffusing over more of the ventral surface. Also, the apex itself is more pointed in the dusky and night shark pectoral fins.

Bull shark *(Carchrhinus leucas)* and Caribbean reef shark *(Carcharhinus perezi)* pectoral fins (and Grey reef shark *(Carcharhinus amblyrhynchos)* pectoral fins examined from photos taken in aquaria and published online) also have a distinctive dusky coloration at the apex on the ventral surface. However, this coloration extends further into the middle of the ventral surface and further along the trailing edge.