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Agenda Item 25.1

PROPOSAL FOR THE INCLUSION OF THE DUSKY SHARK *(Carcharhinus obscurus)* IN APPENDIX II OF THE CONVENTION

Summary:

The Government of Honduras has submitted the attached proposal[1] for the inclusion of the Dusky Shark *(Carcharhinus obscurus)* on Appendix II of CMS.

Rev.1 includes amendments submitted by the proponents to make the proposal more precise, in accordance with Rule 21, paragraph 2 of the Rules of Procedure for meetings of the Conference of the Parties (UNEP/CMS/COP12/Doc.4/Rev.1), and taking into account the recommendations of the Second Meeting of the Sessional Committee of the Scientific Council, contained in UNEP/CMS/COP12/Doc.25.1.21/Add.1.

*Reissued for technical reasons on 24 October 2017.

[1]The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CMS 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.

PROPOSAL FOR THE INCLUSION OF THE DUSKY SHARK *(Carcharhinus obscurus)* IN APPENDIX II OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. PROPOSAL:

Inclusion of Dusky Shark**,** *Carcharhinus obscurus*, in Appendix II.

B. PROPONENT: Government of Honduras

C. SUPPORTING STATEMENT

1. Taxonomy

1.1 Class: Chondrichthyes, subclass Elasmobranchii
1.2 Order: Carcharhiniformes
1.3 Family: Carcharhinidae
1.4 Genus and species: *Carcharhinus obscurus (*LeSueur, 1818)
1.5 Scientific synonyms: *Carcharias macrurus* Ramsay & Ogilby, 1887, *Galeolamna (Galeolamnoides) eblis* Whitley, 1944, *Carcharhinus iranzae* Fourmanoir, 1961, *Carcharhinus obscurella* Deng, Xiong & Zhan, 1981, *Carcharhinus lamiella* , (not *Carchiaras lamiella* Jordan & Gilbert, 1882, equals *C. brachyurus*)
1.6 Common name(s): bay-shark, black whaler, bronze whaler, brown dusky shark, brown shark, common whaler, dusky ground shark, dusky shark, shark, and shovelnose. Other names include arenero (Spanish), blauhai (German), cação fidalgo (Portuguese), cazón (Spanish), donkerhaai (Afrikaans), dotabuka (Japanese), estrela (Portuguese), karcharynos skotinochromos (Greek), köpek baligi (Turkish), lamia (Spanish), marracho areneiro (Portuguese), requiem de sable (French), schemerhaai (Dutch), squalo scuro (Italian), sumuhai (Finnish), tiburón arenero (Spanish), and zarlacz ciemnoskóry (Polish)

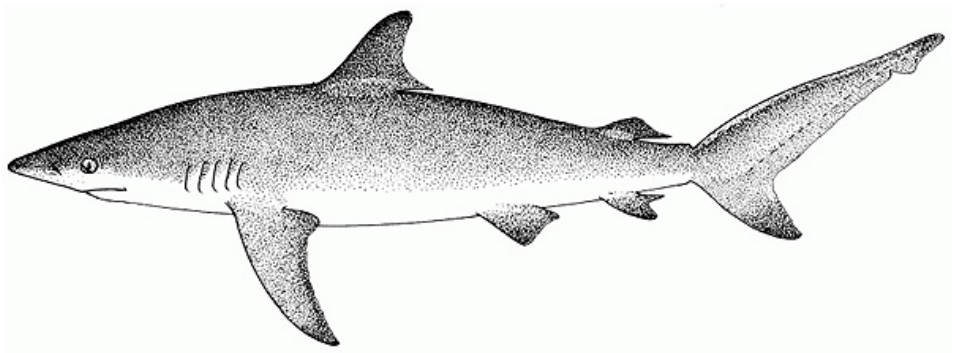

Figure 1: *Carcharhinus obscurus* (Dusky Shark) from FAO.org

2. Overview

The Dusky Shark, *Carcharhinus obscurus,* qualifies for listing under CMS Appendix II, because it is highly migratory, and its abundance has declined markedly from historic levels due to a lack of wise management.

The Dusky Shark (*Carcharhinus obscurus)* is listed by the IUCN on its Red List of Threatened Species as Vulnerable to Extinction globally, due to severe, continued declines in their population around the world (Musick et al., 2009).

Catch of *C. obscurus* is largely unmanaged, and in some instances even managed populations are still experiencing overfishing. Over the past 15 years, studies have shown a significant decline in the trade of *C. obscurus*, from approximately 1.4% of the shark fin trade entering

Hong Kong down to a mean of 0.3% of samples from retail markets (Fields et al. 2017 in press). Due to the increased pressure on Dusky Sharks, particularly since the late 1970s (SEDAR 2011), fishing pressure may already have reduced the Dusky Shark to the "edge of collapse" (Romine et al. 2009).

Dusky Sharks are large, highly migratory coastal and occasionally pelagic shark species of tropical, sub-tropical and temperate seas. Dusky Sharks undergo seasonal transboundary migrations (see section 3) to remain in warmer waters, moving both between States and from Exclusive Economic Zones into the high seas.

They are one of the least productive and most vulnerable of all shark species, giving birth to pups only every two or three years. Their populations therefore have very low intrinsic growth rates, making them highly susceptible to over-fishing (whether target or bycatch) and other anthropogenic threats. Unsustainable fishing is the greatest threat to this species worldwide, whether by target fisheries supplying demand for Dusky Shark meat and the international fin trade, or utilised bycatch in fisheries for other species. Dusky Shark populations have declined significantly as a result. For example, declines are reported ranging from 62% up to 99% in the Atlantic Ocean and up to 75% in the Indo-Pacific Ocean (see Section 4 and Table 1). Dusky shark fins accounted for approximately 1.4 % of sharks in the Hong Kong market in 1999-2001, which equates to between 144,000 to 767,000 individuals per year (Clarke et al., 2006a and 2006b). A DNA study during 2014-15 identified Dusky Shark fins in 0.1-0.7% of samples from Hong Kong retail markets (Fields et al. 2017 in press).

A more precautionary multilateral approach to this species' management is urgently needed if these declines are to be reversed and fisheries become sustainable. A listing in Appendix II of CMS would encourage and support improved collaborative management for this species by Range States, both through CMS and through the complementary fisheries management efforts of Regional Fisheries Management Organisations (RFMOs).

3 Migrations

3.1 Kinds of movement, distance, the cyclical and predicable nature of the migration

Dusky Shark populations are known to undertake long distance, seasonal trans-boundary migrations, to remain in warm water. Most populations follow coastal migration routes across boundaries between range States, while in other regions the sharks may migrate from an EEZ into international waters, spending long periods of time on the continental shelf edge (McCandless et al. 2014). The longest straight-line distance travelled between tagging and recapture locations for 181 recaptures (of 8776 sharks tagged by the NMFS Cooperative Shark Tagging Programme, 1963–2013) was 2,052 nautical miles, with the longest period at liberty nearly 16 years (Musick et al. 2009, McCandless et al. 2014).

Tagging studies in the southwestern Indian Ocean (e.g. Davies and Joubert 1967, Bass *et al*. 1973), the Northwest Atlantic, Gulf of Mexico (Kohler 1998), and the south-eastern Indian Ocean (Simpfendorfer unpublished data) have all shown that *C. obscurus* is a highly migratory species.

On both the Atlantic and Pacific coasts of the U.S., Dusky Sharks migrate northward in summer as the waters warm and retreat southward in fall, crossing national boundaries, as water temperatures drop (Musick *et al*. 1993). This species is known to be highly migratory in the northern hemisphere western Atlantic and eastern Pacific Oceans, moving north along coasts during the summer months and south in the winter. Males and females may undertake these seasonal migrations separately, as reported for several other large shark species.

Figure 2 illustrates how Dusky Sharks tagged as far north as Cape Hatteras in the US EEZ were recaptured after travelling into other range State waters in the Caribbean Sea and Central America, as part of their temperature-related migrations (Kohler 1998).

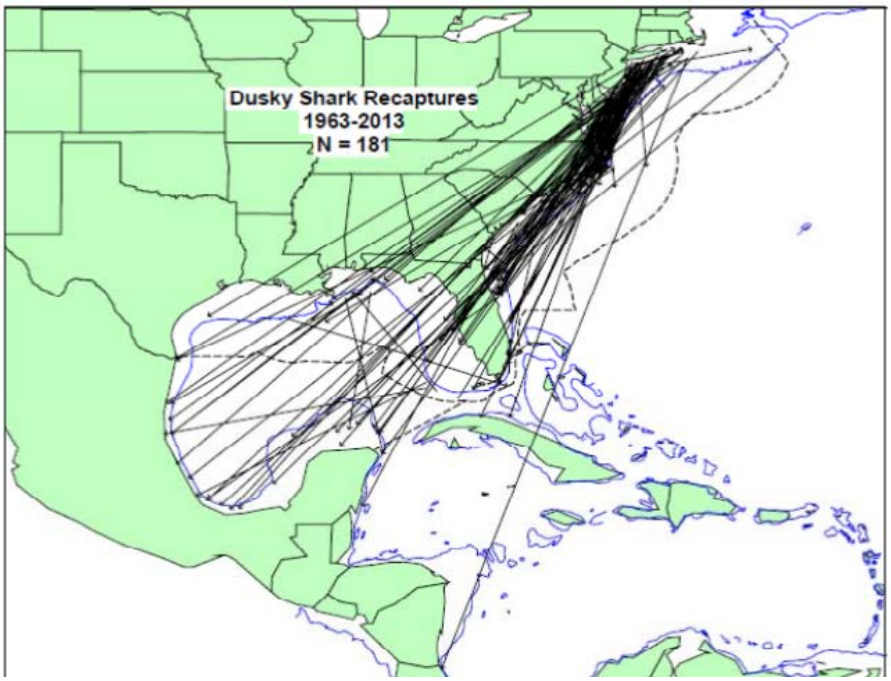

Figure 2. Dusky Shark mark/recaptures from the NMFS Cooperative Shark Tagging Program. Lines represent the straight line distance between the tagging location (start of line) to the recapture location (arrow tip). The dashed line is the US EEZ and the blue line is the 200 m depth contour. Source: NOAA.

Seasonal migrations (north in winter and south in summer) also occur off Southern Africa (Bass *et al*. 1973). In the Indian Ocean, Hussey et al (2009) found that Dusky Sharks can migrate seasonally from Kosi Bay, near the border between South Africa and Mozambique, to the eastern Cape between June and December, most likely having started their journey in Mozambique or further north, and following food sources as they migrate south.

In Western Australia, Dusky Sharks undergo distinct inshore/offshore seasonal migrations; adolescents and adults move inshore during the summer and fall, with neonates occupying separate inshore areas (Last and Stevens 1994). They return to deeper water in winter and spring.

3.2 Proportion of the population migrating, and why that is a significant proportion

Almost all life stages in the population of *C. obscurus* are thought to migrate. While movements of adults are longer-distance than those of neonates and juveniles, juveniles of approximately a year old have been recorded moving as much as 742 nautical miles off the Indian Ocean coast of Southern Africa (Dudley *et al*. 2005). The juveniles are known to migrate down as far as the southern and western Cape when the waters warm up during the summer months. They migrate back to the east coast as it cools (Musick et al 2009).

4. Biological data (other than migration)

4.1 Distribution (current and historical)

The Dusky Shark is a large wide-ranging species with a mainly coastal global distribution in tropical, sub-tropical and temperate oceans (Compagno 1984). This shark occurs from the surf zone to well offshore, occasionally pelagic, and from the surface to depths of 400 m off the edge of the continental shelf (Compagno 1984). Genetic analyses indicate significant differentiation between Dusky Shark populations from the Northwest Atlantic and the Indo-Pacific, and some population structure between the Northwest Atlantic and Southwest Atlantic

stocks (McCandless et al. 2013).

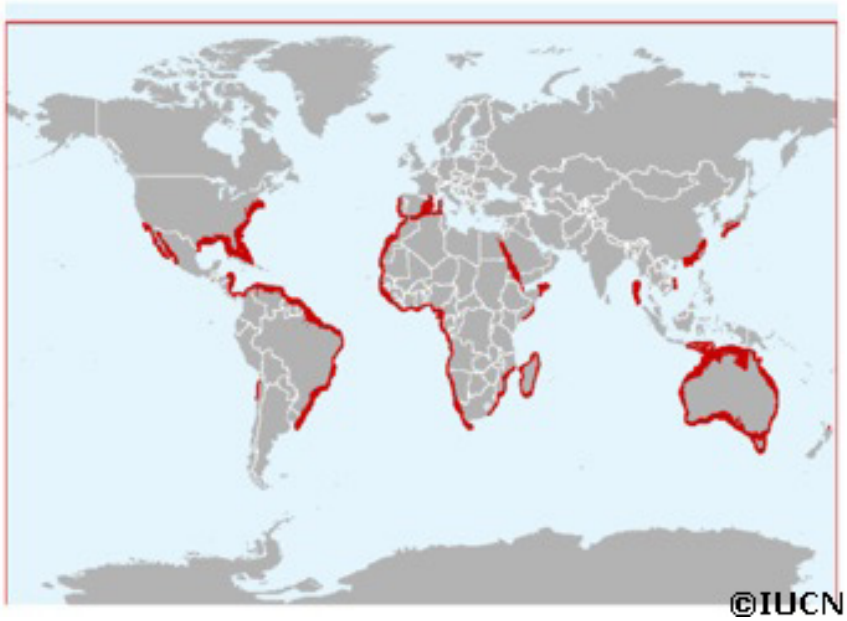

Figure 3: Global distribution of the Dusky Shark *C. obscurus*

4.2 Population (estimates and trends)

Table 1: Population declines calculated for *C. obscurus*

Ocean/Sea	Estimated stock decline	Reference
Northwestern and Western Central Atlantic	94% over 30 years	Baum et al. 2005
	62-82% over 30 years	Cortes et al. 2006
	98.8% over 30 years	Musick et al. 2009
	70% (of species complex)	"
	79% over 40 years	Baum et al., 2004
	50% over 5 years	Cramer 2000
	80% over 16 years	Musick et al. 1993
	99% over 28 years	Myers et al. 2007
Indian Ocean (Western Australia)	75% over 35 years	McAuley et al 2005

According to the IUCN Red List assessment, Dusky Shark populations are decreasing worldwide (Musick et al 2009). Decreases have been calculated through fisheries stock assessments or other research estimates in some regions, and are inferred and extrapolated in others where similar pressures affect the stocks.

Atlantic Ocean

In the northwest Atlantic, *C. obscurus* populations have suffered significant declines due to overfishing since the mid-1980s, from which they have yet to recover. Populations of Dusky Shark were found to have declined by 50-99% in the western Atlantic Ocean from 1950-2004 (Baum et al., 2004, Myers et al. 2007, Musick et al. 1993, Cramer 2000). NOAA estimated ten years ago that Dusky Sharks were at approximately 15-20% of their mid-1970s abundance (Cortes et al. 2006), and concluded more recently that on top of these significant depletions, and despite management measures put in place in 2000 (prohibited from landings), the stock was overfished and overfishing still occurring (NOAA Highly Migratory Species Advisory Panel,

2016). The rebuilding time was estimated to be approximately 400 years (NOAA 2015). In a long term study off of the coast of North Carolina, data indicated a 98.8% decrease in Dusky Sharks from 1972-2003, and this population was assessed as Endangered in the Northwest and Western Central Atlantic (Musick et al. 2009). While management measures have reduced mortality for the species, as of 2015, the NW Atlantic population has declined by 73% (SEDAR 2016).

Range, occurrence and abundance in the Northeastern Atlantic is uncertain; the species is assessed as Data Deficient in European waters (Musick et al. 2015).

Data are also lacking in the southwestern Atlantic, but there is considerable fishing pressure on large coastal sharks; Musick et al. (2009) suggested that this population is at least Near Threatened and possibly Vulnerable.

Mediterranean

Dusky Sharks are caught as bycatch in longline, setline, and gillnet fisheries off the North African coast, and occasionally by surface longlines in the Sicilian channel. Population trends are difficult to pinpoint in this region, as there are few species-specific records and their catch may get mixed in with other similar requiem sharks. The species is also assessed as Data Deficient in the Mediterranean (Musick et al. 2015).

Indo-Pacific Ocean

In the south-eastern Indian Ocean (Kwa-Zulu Natal, South Africa), sports angling CPUE has been decreasing, but not sufficiently to be considered significant ten years ago (Pradervand and Bellis 2007). The IUCN Red List assessment (Musick et al. 2009) found the Dusky Sharks to need greater protection due to their low intrinsic rate of increase, but found the region to be Data Deficient in its ability to determine population trends.

Off the Australian coast, populations of *C. obscurus* were found to have declined by over 75% from the 1970s-2004 (Musick et al 2009). A stock assessment conducted in 2005 suggests that overfishing may have been occurring for Dusky Shark species (McAuley et al 2005) and management measures were introduced to this fishery in 2006. The government considers the stock to be transitional-recovering and Musick et al. 2009 assessed this stock as Near Threatened, but close to meeting the criteria for Vulnerable.

4.3 Habitat (short description and trends)

C. obscurus is found along continental shorelines and the shelf, where it can range from shallow waters to the outer reaches of the continental shelf and adjacent oceanic waters. While the Dusky Shark is a highly migratory species, it usually only migrates along coastlines and does not complete transoceanic migrations that take it far into pelagic waters. Additionally, while the Dusky Shark tends to be more of a coastal species, it is poorly adapted to osmoregulate at lower salinities and is not found in brackish waters or estuaries (Compagno 1984, Musick *et al*. 1993). Generally a bottom feeder, it can be found from the surface to a depth of 400 m (1240 ft).

Worldwide, several studies have identified distinct nursery areas for Dusky Sharks in shallow waters (Musick et al 2009). Off Brazil, Mazzoleni (1999) reported a potential nursery in the north of Santa Catarina State, where neonates are an abundant catch of artisanal fisheries in summer and fall, but absent in winter (presumably because they have migrated into warmer water further north). Major nursery areas for Dusky Sharks have also been identified off the southern coast of KwaZulu-Natal, South Africa (Bass *et al*. 1973), along the New Jersey to South Carolina coast of the United States (Musick and Colvocoresses 1988, Castro 1993), and off the southwest coast of Australia (Last and Stevens 1994, Simpfendorfer 1999). In the Indian Ocean, the young are known to aggregate in dense assemblages when feeding (Compagno 1984).

4.4 Biological characteristics

C. obscurus are very large, fairly slender sharks that can be identified by their bluish gray color, and readily identifiable fin shape and markings. Dusky Sharks possess a snout that is slightly shorter than or as long as the width of the mouth; the origin of the first dorsal fin is over the free rear tip of moderately large falcate pectoral fins, and a low interdorsal ridge (Ebert and Stehmann 2013). At first glance the Dusky Shark may look similar to the sandbar shark, but can easily be distinguished by its smaller and more posterior first dorsal fin. The dorsal fins, when dried, possess a light grey to brown grey color, narrow towards the apex and the apex is narrowly rounded. Dusky Shark dorsal fins also have a long free rear tip when compared to other species of shark commonly found in the shark fin trade (Abercrombie et al, 2013).

Dusky Sharks are placental, viviparous shark species, with an average of 7 pups born after a 18-24 month gestation (Castro 2009, Romine 2009, Compagno 1984, Ebert and Stehmann 2013). In the western Atlantic, Dusky Sharks have been estimated to have an annual rate of population increase of 2.8% (Cortés 1998) to 5.57% (Sminkey 1996). However, these assume that there is a two-year reproductive cycle. More recent studies indicate that Dusky Sharks have a three year reproductive cycle, including a one year interval between pregnancies, so the actual annual rate of population increase will likely be lower.

Romine (2004) estimated the annual rate of population increase only to be around 1.9% with zero fishing pressure and the population doubling time 36 years. Simpfendorfer (1999), using a three year reproductive cycle, estimated the annual rate of population increase for the Australian population was 4.3%. Such low rates of population increase illustrate why Dusky Sharks are at such high risk of overexploitation and in need of greater management in fisheries that capture *C. obscurus* worldwide (Cortés 1998). Furthermore, Dusky Sharks have one of the lowest rebound rates of all Carcharhinidae (Smith et al. 1998), and are highly susceptible to overexploitation (Benavides et al 2011), and the most vulnerable to excessive fishing mortality, indicating a pressing need for stricter management (Romine 2009, Hoffman 2014).

Table 2. Life History Characteristics for *C. obscurus*

Region	Size at sexual maturity (cm TL)	Age at sexual maturity (years)	Litter size	Gestation period	Generation time	Productivity (r)	Reference
Atlantic	Female: 257-300 cm Male: 280 cm		2-16				Compagno 1984;
Pacific		Female: 15.5 Male: 16.5					Joung et al. 2015
Northwestern Atlantic	235 Female 241 Male (FL)	Female: 17.6 Male: 17.4					Natanson et al. 1995; Natanson et al. 2013
Northwestern Atlantic			3-12				Romine 2009
Western Atlantic				8-16 months			
Indo-Pacific	2540mm (FL)	Female: 27-35 years					McAuley et al 2005

Region	Size at sexual maturity (cm TL)	Age at sexual maturity (years)	Litter size	Gestation period	Generation time	Productivity (r)	Reference
Western Atlantic				2 years			Musick et al 1993; Dudley et al 2005

4.5 Role of the taxon in its ecosystem

C. obscurus is an apex predator with a high trophic level (4.2) and diverse diet; it preys on a wide array of bony and cartilaginous fishes as well as a variety of invertebrates and occasionally marine mammals (Cortés 1999). Juveniles primarily consume pelagic teleosts and cephalopods, with an increase in the consumption of elasmobranch prey as their body size increases (Gelsleichter et al. 1999, Simpfendorfer et al. 2001). Stable isotope analysis has shown a shift to shelf edge foraging in large Dusky Sharks (Hussey et al. 2011).

Juvenile Dusky Sharks may be consumed by larger sharks, such as Sandtiger, Great White and Bull Sharks. However, adult Dusky Sharks have few, if any predators (Compagno et al 1984).

5. Conservation status and threats

5.1 IUCN Red List Assessment (if available)

Table 3. Regional assessments for *C. obscurus* (from Musick et al. 2009 & 2015)

	C. obscurus IUCN Red List status
Global	Vulnerable
Eastern central Pacific	Not Assessed
Northwest Atlantic	Endangered
Western central Atlantic	Endangered
Southwest Atlantic	Vulnerable
Mediterranean Sea	Data Deficient
Indo-west Pacific	Not Assessed
Northeast Atlantic (Europe)	Data Deficient

5.2 Equivalent information relevant to conservation status assessment

Fisheries stock assessments have been undertaken for Dusky Shark in the US Atlantic (e.g. the SEDAR 21 Stock Assessment Report for the Dusky Shark, by NMFS 2011) and in Western Australia (McAuley et al. 2005); the results of these are incorporated into IUCN Red List assessments.

5.3 Threats to the population (factors, intensity)

The principal threat to *C. obscurus* is unsustainable mortality in target and bycatch fisheries. They are frequently caught by longline and large gillnet fisheries, most of which are unregulated and unreported (Dulvy et al. 2008). *C. obscurus* is taken in coastal shark fisheries in several parts of the world and sometimes as bycatch in swordfish/tuna fisheries, when these take place close inshore. Dusky Sharks also exhibit high at-vessel and post-release mortality (Marshall et al 2012), and juveniles experience mortality rates of 82.4% following longline capture (Morgan and Burgess 2007).

In the US, overfishing for Dusky Sharks has occurred since the mid-1980s. Dusky Sharks were once targeted for their meat, fins and cartilage in directed fisheries (McCandless et. al, 2014), and were considered one of the most important species in trophy shark tournaments held in FL before the NW Atlantic population collapsed in the 1990s (Heuter, 1994). While Dusky Sharks have been prohibited from landings in the US since 2000, overfishing is still occurring due to high mortality associated with bycatch in commercial and recreational fisheries (SEDAR, 2016).

The Dusky Shark's very low intrinsic rate of increase means that it is very vulnerable to exploitation and as slow to recover from depletion. It is difficult to manage or protect because, in addition to being the subject of target fisheries for meat and fins, it is caught in many non-target fisheries and suffers from high bycatch mortality even if legally protected (IUCN/CMS 2007). For example, from 1992-2000 (before the species became prohibited) Dusky Sharks made up 14.7% of the shark bycatch in the Atlantic pelagic longline fishery (Beerkircher et al. 2002).

International trade demand for the large valuable fins of adult Dusky Sharks is a significant driver of mortality in many of these target and bycatch fisheries, although there are also important markets for their meat (particularly of juveniles). Cortes notes that the Dusky Shark is among the most "highly-desired" species in the international fin trade (2006 at 6, citing Clarke et al. 2006a). The Hong Kong shark fin market provides the best data against which to assess trends in international trade in shark products (Dent and Clarke 2015). *C. obscurus* are an important component of the global shark fin trade. In 1999-2001, Dusky Sharks comprised approximately 1.4% of the total fins auctioned in Hong Kong, representing about 144,000 to 767,000 individual Dusky Sharks (Clarke et al. 2006 A and B). At that time, global catches of zero were being reported to FAO.

However, by 2014-15, the estimated percentage of Dusky Sharks in trade in Hong Kong markets had fallen to approximately 0.3% of samples collected (Fields, et al. 2017 in press), indicating significant population declines worldwide, while this species remains unmanaged through most of its range. Increased management and some full protections from catch/trade in the USA, Australia and South Africa will also have contributed to a declining percentage in the global shark fin trade.

Genetic studies on the Dusky Dhark indicate that genetic mixing between regional populations is low (Benavides et al, 2011), meaning that depleted stocks are unlikely to recover due to immigration from adjacent populations and are vulnerable to collapse (Duncan et al. 2006, Keeney & Heist 2006, Stow et al. 2006, Schultz et al. 2008, Chabot & Allen 2009, Chapman et al. 2009).

5.4 Threats connected especially with migrations

There is little or no protection for these species in much of their coastal and shelf edge/high seas habitats, including inshore nursery grounds. This lack of management is a significant and ongoing threat to *C. obscurus* in much of their range, given their wide ranging, migratory coastal nature. While they are now managed or protected in parts of their distribution, these populations remain extremely vulnerable to fisheries pressure when they migrate into the waters of neighbouring States and onto the high seas. Major threats to their populations include unregulated catch by longline vessels targeting tuna, swordfish, and other shark species (IUCN/CMS 2007), and unregulated coastal artisanal fisheries, particularly in nursery grounds.

A small number of countries have recognized the vulnerable nature of Dusky Sharks and protected them in their own waters. However, no regional or international protection or collaborative management arrangements exist for these species, making them vulnerable over much of their range when they migrate.

5.5 National and international utilization

Dusky Sharks are used for their fins and meat, both for domestic consumption and in global markets. Although FishStat is acknowledged to be an incomplete record of global catch (Worm *et al* 2013), Dusky Shark catches have only very sporadically been reported to the FAO, with no records since 2005. There are domestic markets for *C. obscurus* meat, which is cooked, smoked or dried-salted, and lesser markets for its skin (for leather), and liver oil (for vitamin A). However, the principal driver of catch and trade in this species is the international demand for shark fins.

Unmanaged fisheries have overexploited Dusky Shark populations for both commercial and recreational purposes throughout the shark's range, including in the Western Atlantic, the Mediterranean, the Indian Ocean, and Australian waters (Musick et al. 2009).

Shark fins are one of the world's most expensive consumables, fetching prices as high as $700 per kilogram worth approximately $400 to $550 million a year in global trade (Clarke et al. 2007). Because of their large fin size and high fin needle content, Dusky Sharks have one of the most valuable fins on the market (Musick et al. 2009). Fishers also target Dusky Sharks for their meat, although shark meat is generally much less valuable than fins, US$2.09 per kg and US$1.94 per kilogram, respectively (Morgan 2010).

6. Protection status and species management

6.1 National protection status

Australia, South Africa, and the United States have implemented a variety of species-specific management measures for the Dusky Shark, ranging from recreational bag limits to strict legal protection ("no take").

Other countries and territories have banned the retention of all shark species, notably Palau, Maldives, Honduras, The Bahamas, Marshall Islands, French Polynesia, New Caledonia and the Cook Islands. Several U.S. states and territories in the Pacific have also taken steps to curb the shark fin trade with California, Hawaii, Oregon, Washington, Guam, and the Commonwealth of the Northern Mariana Islands banning the sale, possession, and trade of shark fins.

6.2 International protection status

None.

In response to growing concern over the status of large pelagic sharks, some Regional Fisheries Bodies (RFBs) have undertaken stock assessments for shark species with sufficient data, but Dusky Sharks have not been a focus of this work, and to date no RFB stock assessment has been completed for this species. RFBs have also taken measures to improve data collection to species level, reduce bycatch, control finning, and prohibit landings of the most threatened species. This lack of emphasis on Dusky Shark by the high seas Regional Fisheries Management Organisations (RFMOs) is primarily due to their coastal, rather than pelagic nature but there has been a similar lack of action from range states and coastal RFBs, leaving the species widely unmanaged.

6.3 Management measures

While Australia, South Africa, and the United States have implemented management measures for the Dusky Shark, these are exceptions; no management action has been adopted or implemented for the Dusky Shark over much of its range in national waters or on the high seas.

Dusky Shark populations continue to decline despite NMFS' recognition of the shark as a "species of concern" and the prohibition of take under the Magnuson-Stevens Fishery Conservation and Management Act (FCMA) since 1997 (NMFS 2011a). However, commercial fisheries continue to catch Dusky Sharks as by-catch through bottom longline and pelagic

longline fisheries (Cortes et al 2006) even after this listing, which by-catch may go unreported.

In South Africa, there are recreational bag limits on the number of Dusky Sharks allowed to be taken, recently reduced from 10 per trip to 1 per trip.

The United States prohibited commercial and recreational take of Dusky Shark in 2000. There are some indications that the western Atlantic stock has now stabilised at 15% of its unfished level and survival of juveniles has improved (McCandless et al. 2014). Recovery to MSY is unlikely to be achieved before 2100, but the population rebuilding time is estimated at about 100 years (SEDAR 2011).

In 2006, the Western Australian Government introduced measures in all commercial fisheries to reduce mortality, particularly of Dusky and Sandbar Sharks, including a maximum size limit for Dusky Shark; additional controls on the use of longline, and the conversion of monthly gear units to daily gear units (McAuley *et al*. 2005). Outside of these areas, Dusky Sharks are generally unmanaged across much of its range.

6.4 Habitat conservation

There is a protected area for a Dusky Shark nursery ground in Shark Bay, WA, Australia.

In 2005, the United States created a time/area closure for a Dusky and Sandbar Shark nursery and pupping areas off the North Carolina coast from January to July, to reduce by-catch mortality (SEDAR 2011a). The closure and others like it have proven to increase shark densities over relatively short periods of time (Morgan 2008). McCandless et al. (2014) concluded that there was no evidence of human activities affecting essential habitat for Dusky Sharks in US Atlantic waters. However, a 2009 stock assessment of the Dusky Shark confirmed that the species was still subject to “overfishing” and was still “overfished” (NOAA 2010).

6.5 Population monitoring

There are population monitoring programmes in place in the US Atlantic, Western Australia and South Africa, with data collection sufficient to produce stock assessments in the first two of these regions. Elsewhere, national and RFB population is minimal or absent.

7. Effects of the proposed amendment

7.1 Anticipated benefits of the amendment

The Review of Migratory Chondrichthyan Fishes - IUCN Shark Specialist Group/CMS (2007) noted that: *‘A CMS Appendix II listing could help to drive the improvements in national and regional management that are required if this species is to recover from depletion and become managed sustainably. Indeed, the species is so very vulnerable to over-exploitation that it may qualify for an Appendix I listing, at least in parts of its range’.*

Given the declining trend of populations worldwide, *C. obscurus* are in need of conservation action as a matter of urgency wherever they are found, due to their particularly vulnerable biology, the significant declines seen in their populations, the high demand for products from Dusky Sharks worldwide, and the lack of regulation or protection for these species across most of their range.

While the measures listed in Section 6 provide some protection for *C. obscurus.* they do not extend throughout their entire range, nor is international trade regulated despite up to 750,000 D Sharks being killed and subsequently traded on an annual basis (Clarke 2006 B). *C. obscurus* is likely to be pushed closer to extinction until its management is prioritised throughout its range, and globally applicable, enforceable measures are put in place worldwide to protect them from overexploitation.

An Appendix II CMS listing would aid in the development and implementation of such

measures, by emphasising the need for domestic management of Dusky Sharks in all range states. This can be reinforced if Dusky Sharks are subsequently listed in Annex 1 of the CMS MoU on the conservation of migratory sharks.

A CMS Appendix II listing would also ensure that international co-operation is prioritized, including encouraging the adoption of Regional Fisheries Body (RFB) measures to prohibit or regulate and monitor catches across the range of *C. obscurus.*

7.2 Potential risks of the amendment

7.3 Intention of the proponent concerning development of an Agreement or Concerted Action

If this proposal is successful, *C. obscurus* will be considered for listing on the CMS Memorandum of Understanding (MoU) on the Conservation of Migratory Sharks, where co-operative domestic and international action to improve its conservation status can be prioritised under the MOU's aim to achieve and maintain a favourable conservation status for migratory sharks throughout their range.

The Government of Honduras proposes promoting and enhancing national, regional and international coordination, collaboration and partnership for Dusky Shark conservation. By working with Range States on developing concerted actions regarding the conservation of the Dusky Shark upon listing in Appendix II of the Convention, the Government of Honduras suggests the interim actions outlined in Table 4:

Table 4. Proposed interim Concerted Actions for the Dusky Shark *Carcharhinus obscurus*

Activity	Outputs/Outcome	Timeframe	Responsibility	Funding
Support the inclusion of Dusky Sharks in Annex I of the Sharks MOU	Dusky Sharks proposed at MOS3 for inclusion in Annex I of the Sharks MOU.	End 2018	Range States who are also Signatories to the Sharks MOU; Cooperating Partners to the Sharks MOU	No funding needed
Encourage Range States to sign the Sharks MOU	Additional Range States become Signatories	Ongoing	Range States	No funding needed
Improve data collection and promote research, to improve estimates of abundance	Improved species-specific data collection can reduce uncertainty in estimates of abundance, lead to better management	2018/2019	Range State Parties and non-Party MOU Signatories; NGOs	Fundraising may be needed
Develop management measures for the Dusky Shark	With better data, Range States are able to establish management measures, for example modeled on those in South Africa, Australia and the United States.	Ongoing	Range States	No funding needed

8. Range States

Algeria, Angola, Australia, Bahamas, Belize, Brazil, Cape Verde, Cameroon, Chile, China, Colombia, Congo (Republic of), Costa Rica, Cote D'Ivoire, Cuba, Egypt, El Salvador, Ethiopia, France (French Guiana, New Caledonia) Gabon, Ghana, Guatemala, Guinea, Guyana, Haiti,

Honduras, India (Andaman and Nicobar Islands), Indonesia, Italy, Japan, Libya, Madagascar, Mauritania, Mexico, Morocco, Mozambique, Namibia, New Zealand, Nicaragua, Nigeria, Panama, Saudi Arabia, Senegal, Sierra Leone, Somalia, South Africa, Spain, Sudan, Suriname, Tunisia, United States, Uruguay, Venezuela, Vietnam,

9. Consultations

10. Additional remarks

11. References

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