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

Fifteenth meeting of the Conference of the Parties
Doha (Qatar), 13-25 March 2010

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

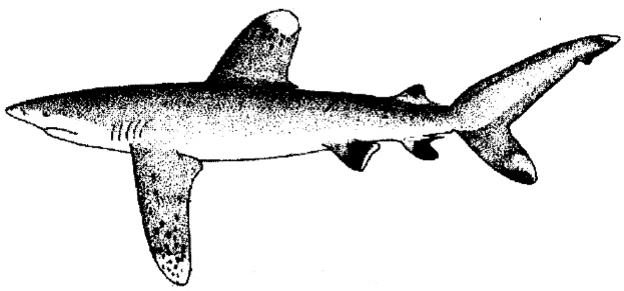
Inclusion of *Carcharhinus longimanus* (Poey, 1861) in Appendix II in accordance with Article II paragraph 2(a) of the Convention and satisfying Criterion A in Annex 2a of Resolution Conf. 9.24 (Rev. CoP14).[1]

Inclusion in Appendix II, with the following annotation:

The entry into effect of the inclusion of *Carcharhinus longimanus* in Appendix II of CITES will be delayed by 18 months to enable Parties to resolve the related technical and administrative issues.

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 it is over-exploited for its fins, which are large and highly valued in trade. This low-productivity species is also harvested as bycatch in global pelagic fisheries. The greatest threats to this species worldwide are harvest for the international fin trade and bycatch, which have led to declines of 60-70% in the northwest and central Atlantic Ocean and up to a 10-fold decline in abundance from the baseline in the central Pacific Ocean. Based upon rates of exploitation, this species is likely to become threatened with extinction 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.



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[1] The United States believes that, where indicated, the criteria and definitions must be applied with flexibility and in context. This is consistent with the "Note" at the beginning of Annex 5 in Resolution Conf. 9.24 (Rev. CoP14): "Where numerical guidelines are cited in this Annex, they are presented only as examples, since it is impossible to give numerical values that are applicable to all taxa because of differences in their biology." The definition of "decline" in Annex 5 is relevant to the determination of whether a species meets either criterion in Annex 2a of the resolution. Nonetheless, the United States believes that it is possible for a species to meet the criteria and qualify for listing in Appendix II even if it does not meet the specific parameters provided in the definition of "decline." Where quantitative data are available, they should be used to evaluate a species' status. However, where data on population abundance are not available but there are indications that over-exploitation is or may be occurring (i.e., "it is known, or can be inferred or projected") and the regulation of trade could benefit the conservation of the species, listing should be supported.

B. Proponent

Palau and the United States of America[*]

C. Supporting statement

1. Taxonomy

1.1 Class: Chondrichthyes

1.2 Order: Carcharhiniformes

1.3 Family: Carcharhinidae

1.4 Species: Carcharhinus longimanus (Poey 1861)

1.5 Scientific synonyms: *Pterolamiops longimanus* (Poey 1861), *Carcharius obtusus* (Garman 1881), *Carcharius insularum* (Snyder 1904), *Pterolamiops magnipinnis* (Smith 1958), and *Pterolamiops budkeri* (Fourmanoir 1961).

1.6 Common names: Afrikaans: Opesee-wittiphaai

English: Oceanic whitetip shark, Brown Milbert's sand bar shark, brown shark, nigarno shark, shark, whitetip, whitetip shark, white-tip shark, and whitetip whaler

French: Requin océanique

Spanish: Tiburón oceanico, cazón, galano

1.7 Code Numbers: Not applicable.

2. Overview

The oceanic whitetip shark, *Carcharhinus longimanus*, qualifies for listing under this criterion, because some populations have exhibited marked decline in population size. Depending on the area and study, oceanic whitetip shark populations have experienced declines of 60-70% in the northwest and central Atlantic Ocean and up to a 10-fold decline in abundance from baseline in the central Pacific Ocean.

The oceanic whitetip shark is one of the most widespread of shark species, ranging across entire oceans in tropical and subtropical waters, usually found far offshore up to about 30° North and South in all oceans. Oceanic whitetip sharks have a moderate recovery potential when compared to 26 other species of sharks and low population growth rates (r<0.14) as defined by the Food and Agriculture Organization of the United Nations (FAO). Ecological Risk and Productivity Assessments determined that oceanic whitetip sharks ranked 4th in their susceptibility to pelagic fisheries among 11 other Atlantic Ocean species (Section 3.3). Abundance trend analyses of catch-rate data have reported large declines in abundance for some populations. In the northwest and western central Atlantic regions, analysis of logbook data indicated declines of 60-70% since 1992. A standardized catch-rate analysis of data from U.S. pelagic longline surveys in the mid-1950s and U.S. pelagic longline observer data in the late-1990s in the Gulf of Mexico estimated a decline of 99% over four generations for this species. In the central Pacific Ocean, a comparative study of survey data from pelagic longlines from the 1950s and observer data in the 1990s indicated a 90% decline in biomass. Nominal catch rates for the oceanic whitetip shark from purse-seine sets on floating objects, unassociated sets and dolphin sets all showed decreasing trends since 1994. Taken together, it is likely this low-productivity species (r<0.14) has declined to at least 15-20% of baseline (1950s) in northwest Atlantic and central Pacific Oceans (Section 4). Oceanic whitetip sharks have been listed on the IUCN Red List of Threatened Species as Critically Endangered in the northwest and central Atlantic Ocean, and as Vulnerable globally. Oceanic whitetip sharks are a common tropical pelagic

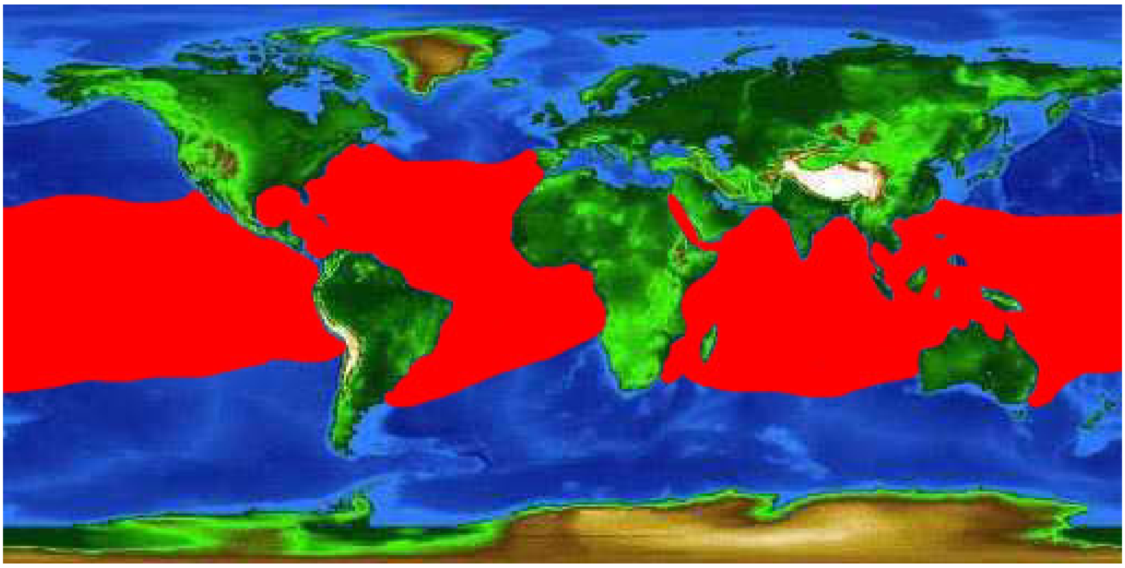
[*] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers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

species taken as bycatch in tuna and swordfish fisheries. They are primarily utilized for fins, but meat is consumed in local markets. There are a few small-scale fisheries primarily in the Gulf of Aden and the Pacific coast of Central America (Section 5). An Appendix-II listing would have beneficial effects upon the wild populations of these animals by regulating and ensuring the sustainability of the international trade in fins (Section 6). A combined pelagic shark quota (comprised of oceanic whitetip, common thresher, and shortfin mako sharks) has been implemented in U.S. Federal waters of the Atlantic Ocean, Gulf of Mexico, and the Caribbean Sea. Palau, French Polynesia and the Maldives have recentlly prohibited all shark exploitation within large areas inside their Exclusive Economic Zones. Elsewhere, no national or international management exists for this species (Section 7). Besides finning bans, the FAO and Regional Fisheries Management Organizations do not manage oceanic whitetip shark fisheries or bycatch (Section 8).

3. Species characteristics

3.1 Distribution

The oceanic whitetip shark is distributed worldwide in epipelagic tropical and subtropical waters between 20°North and 20°South latitude, but can be found up to about 30° North and South latitude during seasonal movements in the summer months (Backus et al. 1956). Its range includes the western Atlantic Ocean from Portugal to the Gulf of Guinea and possibly the Mediterranean Sea. In the Indo-Pacific, this species is found from the Red Sea and the coast of East Africa to Hawaii, Samoa, Tahiti and the Tuamoto Islands. In the eastern Pacific Ocean, it ranges from southern California in the United States south to Peru. Oceanic whitetip sharks are found in the following FAO Areas: 21, 27, 31, 34, 41, 47, 51, 57, 61, 71, 77, 81, and 87 (Compagno 1984).



World distribution map for the oceanic whitetip shark (from Florida Museum of Natural History, http://www.flmnh.ufl.edu/fish/gallery/Descript/OceanicWT/OceanicWT.html)

3.2 Habitat

This species is a surface-dwelling, oceanic-epipelagic shark. It is usually found offshore in the open ocean, on the outer continental shelf, or around oceanic islands in deep water. It has been recorded to a depth of 152m. It is commonly found in waters warmer than 20°C waters (range 18-28°C) with one record from 15°C. Tropical Pacific records of pregnant females and newborns are concentrated between 20°N and the equator, from 170°E to 140°W. Young oceanic whitetip sharks have been found well offshore along the southeastern coast of the United States, suggesting that there may be an offshore nursery over this continental shelf (Compagno 1984, Fourmanoir 1961 Last and Stevens 1994, Bonfil *et al*. 2008).

3.3 Biological characteristics

Oceanic whitetip shark life history parameters have been studied in the north Pacific and southwest Atlantic Ocean (see Annex 1). Seki et al. (1998) studied the age, growth and reproduction of the oceanic whitetip in the North Pacific Ocean and determined growth rates (Von Bertalanffy, k) in both males and females to be 0.10 yr^{-1}. In the western equatorial Atlantic Ocean, Lessa et al. (1999) calculated growth rates between 0.08-0.09 yr^{-1}. Theoretical maximum sizes range from 325 to 342 cm total length (TL) (Lessa et al. 1999; Seki et al. 1998, respectively). Using vertebral sections, a maximum age of 13 years was determined (Lessa et al. 1999).

Few reproductive studies are available for oceanic whitetip sharks. Seki et al. (1998) suggested a 2-year reproductive cycle with a 9-12 month gestation period. Litter sizes ranged from one to 14 with a mean of 5-6 embryos depending on geographic location. Litter size was found to increase with maternal size in the northwest Atlantic Ocean but this was based on a small sample size (Backus et al. 1956). Pups are born at a size between 55 and 75 cm TL. In the north Pacific, females become mature at about 168-196 cm TL and males at 175-189 cm TL corresponding to an age of 4-5 years, respectively (Seki et al. 1998). Lessa et al. (1995) found both sexes mature at 180-190 cm TL (age 6-7 years) in the western equatorial Atlantic Ocean.

Using a demographic method that incorporates density dependence, Smith et al. (1998) determined that oceanic whitetip sharks have a moderate intrinsic recovery potential when compared to 26 other species of sharks. Cortés (2008), using a density independent demographic approach, calculated population growth rates (λ) of 1.069 yr^{-1} (1.029, 1.119; lower and upper 95% confidence limits, respectively) and generation times (T) of 11.1 yrs (9.4, 13.0). 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=0.09-0.07 yr^{-1}) indicated that oceanic whitetip 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). Ecological Risk and Productivity Assessments determined that oceanic whitetip sharks ranked 4th in their susceptibility to pelagic fisheries among 12 other Atlantic Ocean species (Cortés et al. 2008).

3.4 Morphological characteristics

The appearance of the oceanic whitetip shark is easily distinguished from other sharks. This stocky shark has a large rounded first dorsal fin and very long and wide paddle-like pectoral fins. The head has a short and bluntly rounded nose and small circular eyes with nictitating membranes. The first dorsal fin is very large with a rounded tip, originating just in front of the free rear tips of the pectoral fins. The second dorsal fin originates over or slightly in front of the anal fin origin. Possessing broadly rounded tips, the pectoral fins are very large and elongated. This species has unmistakable whitish-tipped first dorsal, pectoral, pelvic, and caudal fins. These white markings are sometimes accompanied by white mottling on the fins or black markings in young individuals. There may also be a dark saddle-shaped marking present between the first and second dorsal fins. The body of the oceanic whitetip shark is grayish bronze to brown in color, depending upon geographical location. The underside is whitish, with a yellow tinge on some individuals.

3.5 Role of the species in its ecosystem

Oceanic whitetip sharks are high trophic level predators in open ocean ecosystems feeding mainly on teleosts and cephalopods (Backus 1954), but studies have also reported that they prey on sea birds, marine mammals and other sharks and rays (Compagno 1984). Cortes (1999) determined the trophic level based on diet for oceanic whitetip shark was 4.2 (maximum=5.0).

4. <u>Status and trends</u>

4.1 Habitat trends

Critical habitats and threats to these habitats are unknown. Pacific records of pregnant females and newborn oceanic whitetip sharks are concentrated between 20°North and the equator, from 170°East to 140°West. Young oceanic whitetip sharks have been found well offshore along the southeastern coast of the United States, suggesting that there may be an offshore nursery over this continental shelf (Fourmanoir 1961, Compagno 1984, Last and Stevens 1994, Bonfil et al. 2008). The effects of climatic changes on world ocean temperatures, pH, and related biomass production could potentially impact oceanic whitetip populations, but the possible extent of such impacts is unknown.

4.2 Population size

There are no stock assessments available for this species and, as such, relative population size is unknown.

4.3 Population structure

Genetic studies have not been conducted for this species. Limited conventional tagging studies in the northwest Atlantic Ocean indicate movements between the Gulf of Mexico and the Atlantic coast of Florida, Cuba, the mid-Atlantic Bight from the Lesser Antillles to the central Caribbean Sea, and east to west along the equatorial Atlantic Ocean (Kohler et al. 1998). The maximum distance travelled was 2,270 km. There is no information on the size class and sex distribution of oceanic whitetip shark populations.

4.4 Population trends

Atlantic Ocean

This species was initially described as the most common pelagic shark throughout the warm-temperate and tropical waters of the Atlantic (Mather and Day 1954) and beyond the continental shelf in the Gulf of Mexico (Wathne 1959, Bullis 1961). Abundance trend analyses using catch-rate data (see Annex 2) have since reported large declines in abundance for some populations. In the northwest Atlantic regions, standardized catch-rate indices estimated from self-reported logbook data by pelagic commercial longline fishers indicated declines of 70% from 1992 to 2000 (Baum et al. 2003) and 57% from 1992 to 2005 (Cortés et al. 2008). However, standardized catch-rate analysis of data collected by on-board scientific observers that sample the same pelagic longline fishery resulted in a less pronounced decline than the logbook series (9% vs. 57%) while the nominal observer series showed a 36% decline (Cortés et al. 2007). A standardized catch-rate analysis of data from U.S. pelagic longline surveys in the mid-1950s and U.S. pelagic longline observer data in the late 1990s in the Gulf of Mexico showed an estimated decline of 99% over four generations for this species (Baum and Myers 2004). The mean size of oceanic whitetip shark captured in the Gulf of Mexico was 86.4 kg in the 1950s, but declined to 56.1 kg in the 1990s (Baum and Myers 2004). However, changes in fishing gear and practices over this period were not fully taken into consideration in the analysis, and there is currently debate as to whether or not these changes may have resulted in an overestimation of the magnitude of these declines (Burgess et al. 2005; Baum et al. 2005). Nevertheless, when trends in abundance from the former analyses (1992-2000; Baum et al. 2003) are extrapolated back to the mid-1950s, they match the latter analysis (Baum and Myers 2004) of abundance declines for oceanic whitetip shark (Baum et al. 2006). Thus, it is likely that the population of this low productivity species is at least 15-20% of baseline (1950s) in the northwest Atlantic Ocean.

Abundance of oceanic whitetip sharks appears to be patchy in the South and central Atlantic, but evidence suggests it is declining where it was formerly abundant. In equatorial waters, this was the second most abundant species caught by Brazilian longline vessels between 1992 and 1997 (Lessa et al. 1999), although catch rates have since declined steeply (Domingo 2004). Oceanic whitetips were present in 4.72% of tropical eastern Atlantic French and Spanish tuna purse-seine sets (Santana et al. 1997). Domingo (2004) reported that the Uruguayan longline fleet observer programme in 1998–2003 recorded catch rates of only 0.006 sharks/1,000 hooks in Uruguayan and adjacent high seas South Atlantic waters (latitude 26°–37°, 16–23°C) and 0.09 sharks/1,000 hooks in international waters off western equatorial Africa. Domingo (2004) notes that similarly infrequent records are obtained by Brazilian and Ecuadorian Atlantic longline fleets. The species comprised less than 1% of the shark bycatch of the widespread Japanese Atlantic longline fleet during 1995–2003 (Senba and Nakano 2004), and 0.2% of Atlantic shark catch by the Spanish fleet in 1999 (Mejuto et al. 2001).

Pacific Ocean

In the central tropical Pacific, historic exploratory tuna longline survey data from the early 1950s indicated oceanic whitetip shark constituted 28% of the total shark catch by longline vessels fishing south of 10°N (Strasburg, 1958). Oceanic whitetip shark catch rates ranged from 2 to 29 (mean 12.44) sharks per 1000 hooks set (all depths combined) in each 10°x10° area surveyed. This was the most abundant open-ocean tropical pelagic shark species at the time, corroborating observations made by Hubbs (1951), Bullis and Captiva (1955), Mather and Day (1954) and Backus et al. (1956). Japanese research longline records during 1967–68 indicate that the oceanic whitetip sharks were still among the most common shark species taken by tuna longline vessels in tropical oceans, although less abundant than blue shark, *Prionace glauca*. It was the second most abundant species comprising 22.5% of the shark catch in the western Pacific but the third most abundant, after silky sharks, *Carcharhinus falciformis*, at 21.3% of the shark catch in the eastern Pacific (Taniuchi 1990).

A comparative study using generalized linear models of pelagic longline survey data from the 1950s with data collected on commercial longline vessels by at-sea observers in the 1990s between latitudes 20º S and 20º N and longitudes 180º W and 120º E by Ward and Myers (2005) indicated a 90% decline in biomass of oceanic whitetip shark. An examination of average size also indicates a decrease in average size captured. Mean body mass decreased from 36 kg to 18 kg in the central Pacific Ocean, which suggests that overfishing may be occurring (Ward and Myers 2005). Scientific survey data collected by Japanese tuna longline research vessels from New Guinea to Hawaii during 1967-1970 and 1992-1995 indicated significant changes in catch-per-unit effort (CPUE) (when corrected for changes in gear depth) between the two time periods but only east of 180° longitude. North of the equator (0-10°North latitude), oceanic whitetip CPUE increased by 40-80% whereas farther north (10-20°North) catch rates decreased by 30% (Matsunaga and Nakano 1999).

An analysis of more recent catch data for sharks caught in the Hawaii-based pelagic longline fishery during 1995–2000 and 2004–2006 found that nominal mean CPUE for oceanic whitetip shark significantly decreased between the two time periods (Walsh et *al.* in press). CPUE from 1995 to 2000 was 0.272 and 0.351 sharks per 1000 hooks for deep and shallow sets, respectively. These numbers declined to 0.060 and 0.161 sharks per 1000 hooks for deep and shallow sets, respectively in 2004-2006 (Walsh et al in press). In eastern Pacific tropical tuna purse-seine fisheries, unstandardized nominal catch-rate data for the oceanic whitetip shark from purse-seine sets on floating objects, unassociated sets and dolphin sets all show decreasing trends since 1994 (IATTC Document SAR-8-15 (2007).

Overall, declines in abundance in CPUE and biomass from 30-90% have been reported, but primarily in the central and eastern Pacific Ocean, indicating this low productivity species has declined to at least 15-20% of baseline (i.e., biomass estimates from the 1950s).

Indian Ocean

The Indian Ocean Tuna Commission summary of the status of the oceanic whitetip shark resource (IOTC 2008) states “The population dynamics and stock structure of the oceanic whitetip shark in the Indian Ocean are not known.” There are no data on CPUE or average weight for oceanic whitetip catches from the Indian Ocean.

4.5 Geographic trends

No information available

5. <u>Threats</u>

Oceanic whitetip sharks are one of the more common tropical pelagic species taken as bycatch in tuna and swordfish fisheries. There are a few small-scale fisheries, primarily in the Gulf of Aden and the Pacific coast of Central America (Bonfil and Abdallah 2004), that target oceanic whitetip sharks. Despite their prevalence in pelagic fisheries, catches are unrecorded or unreported and, in many cases, still not reported to species; thus, oceanic whitetip shark catches may be higher than what is documented for some areas. For example, an analysis of trade data suggests that catches reported to ICCAT may seriously underestimate (by 50-fold) the actual catch of this species in the Atlantic Ocean (Clarke 2008). Maguire et al. (2006) reported the state of exploitation of oceanic whitetip shark was unknown.

A large proportion of the oceanic whitetip sharks taken as bycatch on pelagic longlines are alive when brought to the vessel (>75% in the U.S. Atlantic longline fishery (Beerkircher et al. 2002), and 65%–88% in the Fijian longline fishery (Gilman et al. 2008). Thus, most would likely survive if released unharmed, in accordance with several RFMO shark resolutions (Camhi et al. 2009). However, the high value of their large fins and the low value of the meat encourages finning (removal and retention of fins and discard of carcasses) rather than the release of this bycatch.

Atlantic Ocean

Information collected by at-sea scientific observers on U.S.-flagged longline vessels in the western North Atlantic Ocean indicates that oceanic whitetip is the 8th most abundant pelagic species caught. However, the lower abundance of this species likely reflects the distribution of the fishery, as most U.S.-flagged vessels fish at the northernmost part of oceanic whitetip shark's range (Beerkircher et al. 2002). The United States reports that very few oceanic whitetip sharks are landed by the commercial fishery. Except for two peaks of about 1,250 and 1,800 fish landed in 1983 and 1998, respectively, total catches never exceeded 450 fish per year. Oceanic whitetip sharks comprised less than 1% of the shark bycatch of the Japanese Atlantic longline fleet during 1995–2003 (Senba and Nakano 2004), and 0.2% of Atlantic shark catch by the Spanish fleet in 1999 (Mejuto et al. 2001). However, the proportion of the catch of oceanic whitetip shark increases in areas of the Atlantic Ocean that are more tropical than temperate. For example, oceanic whitetip sharks were present in 4.72% of eastern tropical Atlantic French and Spanish tuna purse-seine sets (Santana et *al*. 1997). Domingo (2004) reported that the Uruguayan longline fleet observer program in 1998–2003 recorded catch rates of 0.006 sharks/1,000 hooks in Uruguayan and adjacent high seas South Atlantic waters (latitude 26°–37°, 16–23°C) but catch rates increased to 0.09 sharks/1,000 hooks in international waters off western equatorial Africa. Only Brazil, Mexico, Spain, St. Lucia, and the United States have reported catches to the International Commission for the Conservation of Atlantic Tuna (ICCAT) and, as indicated by Clarke (2008), because only a few countries report data and the data reported are not accurate, the reported catches likely under-represent the magnitude of catches in the Atlantic Ocean.

Pacific Ocean

According to Inter-American Tropical Tuna Commission, oceanic whitetip shark are most commonly taken as bycatch by the purse-seine fishery in the eastern Pacific Ocean. Information on bycatch of sharks collected by observers between 1993 and 2004 indicates oceanic whitetip shark make up 20.8% of the total shark bycatch. Total observed numbers over the 11-year period indicated up to 32,000 sharks were caught in combined dolphin, unassociated, and floating object purse-seine sets. Sampling coverage of the Eastern Pacific Ocean purse-seine fishery by IATTC observers for non-mammal bycatch varied by set type, but was generally greater than 60% of the sets of large vessels since 1994 (IATTC 2002, IATTC 2004). The lowest sampling coverage for non-mammal bycatch occurred in 1993, with coverage of 41% for dolphin sets, 46% for floating-object sets, and 52% for unassociated sets. Between 1993 and 2004, IATTC observers recorded shark bycatch in 23% of all sets. Therefore, due to the incomplete sampling coverage of the purse-seine fisheries by IATTC observers and the fact that of those fisheries sampled, data from only a portion of the sets were reported, bycatch for oceanic whitetip shark in purse-seine fisheries is much larger than what observers recorded.

For longline fisheries, Bonfil (1994) estimated annual catches of oceanic whitetip sharks in the Pacific Ocean using the hooking rates obtained in the 1950s (from Strasburg 1958) applied to the current fishing effort. This produced estimates of 7,253 oceanic whitetip sharks (about 145 mt) taken annually as bycatch in the North Pacific, and 539,946 sharks (1,799 mt) in the central and South Pacific.

Indian Ocean

While likely taken as bycatch in tuna fisheries, catches of oceanic whitetip shark are not reported to the Indian Ocean Tropical Tuna Commission. However, information on the level of harvest for oceanic whitetip shark can be derived from other studies. For example, in the Maldives, Anderson and Ahmed (1993) reported that oceanic whitetip sharks were taken commercially by pelagic shark longliners and incidentally by tuna fishermen, and that in a previous exploratory fishing survey, oceanic whitetip sharks constituted 23% of all sharks caught. Japanese research longline records during 1967–68 indicate that the oceanic whitetip comprised 3.4% of the Indian Ocean shark catch by longline vessels targeting southern bluefin tuna, *Thunnus maccoyii*, (in relatively cool water) – the fourth most abundant shark species after blue shark, *Prionace glauca*, shortfin mako, *Isurus oxyrincus* and silky shark, *Carcharhinus falciformis* (Taniuchi 1990). Oceanic whitetip shark is also present in 16% of French and Spanish tuna purse-seine sets in the western Indian Ocean (Santana et al. 1997).

6. Utilization and trade

6.1 National utilization

Because of economic and cultural differences, national utilization varies. When carcasses are not discarded at sea, oceanic whitetip sharks are utilized for human consumption. Flesh is consumed fresh, smoked or dried salted. Fins may be dried and utilized locally.

Vannuccini (1999) reported that oceanic whitetip meat is eaten, fresh and smoked, in Mexico and the United States, and fresh, dried and salted in the Seychelles and Sri Lanka. The livers are sometimes also harvested for oil and the skin is used as leather.

6.2 Legal trade

Oceanic whitetip sharks are caught as bycatch in high seas pelagic fisheries. As the meat is of generally low value it is often discarded and the fins are retained because of their high value (US$45 to US$85 per kg) 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. In addition, most parties do not report catches to species level to FAO or Regional Fisheries Management Bodies. However, information on the trade of oceanic whitetip shark fins can be obtained by examination of the Hong Kong Fin Market whose global trade in fins represented 65-80% from 1980 to 1990 (Clarke 2008) and 44-59% of the market from 1996 to 2000 (Fong and Anderson 2000; Clarke 2004). Prior to 1998, imports of fins to Hong Kong were reported as either dried or frozen (“salted”) without distinguishing between processed and unprocessed fins. To avoid double counting fins returning to Hong Kong from processing in mainland China, only unprocessed dried and frozen fins were included in total imports to Hong Kong. Hong Kong shark fin traders use 30–45 market categories for fins (Yeung et al. 2000), but the Chinese names of these categories do not correspond to the Chinese taxonomic names of shark species (Huang 1994). Instead, Chinese market categories for shark fins appear to be organized primarily by the quality of fin rays produced and secondarily by distinguishing features of dried fins. Using commercial data on traded weights and sizes of fins, the Chinese category for oceanic whitetip shark, coupled with DNA and Bayesian statistical analysis to account for missing records, Clarke et al. (2006a, 2006b) estimated between 220,000 and 1,210,000 oceanic whitetip sharks were traded globally in 2000.

6.3 Parts and derivatives in trade

Oceanic whitetip sharks are caught as bycatch in high seas pelagic fisheries. Space for retaining meat from this species is often limited and reserved for higher-value species such as tunas and swordfish. As the meat is generally of low value, oceanic whitetip shark fins are usually retained because of their high value (US$45 to US$85 per kg) while the carcass is likely discarded at sea. However, within artisanal fisheries the meat is saved for local consumption. Thus, the primary product from oceanic whitetip sharks in international trade is the fins. Other products, including skin, liver oil, cartilage and teeth, are considered low grade, are 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. There are numerous difficulties in using the existing trade databases to quantify trends in the shark trade by species. For example, none of the 14 commodity categories used by FAO for chondrichthyan fishes can be taxonomically segregated, with the exception of four categories for various forms of dogfish sharks (family Squalidae). Furthermore, because of non-specific reporting of both trade and capture production figures by many countries, sharks are commonly aggregated into generic fish categories. Therefore at present, quantitative analysis of shark products based on FAO trade data, can only be conducted for generic shark products. The use of commodity codes also varies considerably among countries, further complicating the traceability of products by species and provenience. Information on trade in oceanic whitetip shark products, other than fins, is mostly from observation of personnel in the field.

Fins from this species are one of the most distinctive and common products in the Asian shark fin trade. According to Japanese fin guides (Nakano 1999, see Annex 3), oceanic whitetip fins have broadly rounded tips, the pectoral fins are very large and elongated possessing white mottling on the tip of pectoral, dorsal and lower lobes of the caudal fin. Fins are easily 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 oceanic whitetip shark fins comprise about 2.0% 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 fin traders demonstrated 100% concordance between the fin trade name "Liu Qui" and oceanic whitetip shark (Clarke et al. 2006). Wholesale prices for oceanic whitetip fin sets originating from the south Pacific ranged from US$45 to US$85 per kg (Clarke et al. 2004a). Clarke et al. (2006b) estimated that in 2000 0.6 million oceanic whitetip sharks (or 22,000 metric tons), were utilised annually for the fin trade.

6.4 Illegal trade

With the exception of finning sharks at sea, (discarding the carcass and transhipping the fins at sea), which is prohibited under most Regional Fisheries Management Organizations' regulations and some national laws, there is no control of trade in this species, and the extent of illegal trade activities is unknown.

6.5 Actual or potential trade impacts

Demand from international shark fin markets is the driving economic force behind the retention and mortality of oceanic whitetip sharks caught as bycatch. Regulation of the fin trade through an Appendix-II listing of this species is necessary to ensure that the trade is sustainable.

7. Legal instruments

7.1 National

In the United States, a combined pelagic shark quota of 488 metric tons dressed weight exists for oceanic whitetip, common thresher, *Alopias vulpinus,* and shortfin mako, *Isurus oxyrincus.* Sharks caught in the Atlantic Ocean by U.S. fishermen must be landed with all fins naturally attached. Landings of sharks caught in the Pacific Ocean by U.S. fishermen must adhere to a 5 percent fin-to-carcass ratio (i.e., for any landing, fins must comprise 5% or less of the total fish carcass). Shark-finning bans have been implemented by 21 countries and the European Union (EU), as well as by nine Regional Fisheries Management Organizations, which could help reduce mortality (Camhi *et al*. 2008). Oceanic whitetip sharks should benefit from legislation enacted by French Polynesia (2006), Palau (2003, 2009) and the Maldives (2010) to prohibit shark fisheries throughout their Exclusive Economic Zones.

7.2 International

Oceanic whitetip sharks are listed in Annex I, Highly Migratory Species, of the UN Convention on the Law of the Sea. ICCAT, IATTC, WCPFC and IOTC and other RFMOs have adopted finning bans, which require full utilization of captured sharks and encourage the live release of incidentally caught sharks. No focused species-specific international or domestic management measures are in place.

8. Species management

8.1 Management measures

No species-specific management exists.

8.2 Population monitoring

Population monitoring requires collection of catch data as initial input for stock assessment. In 1996, ICCAT began requesting that its Members submit shark data for eight species of pelagic sharks. Other RFMOs have followed suit and requested data on shark catches, particularly those most commonly caught. However, ICCAT recognized that most member countries would have difficulties in immediately fulfilling this obligation. In 2001, only five countries reported oceanic whitetip shark catches to ICCAT. Since 1997, Japan has required the recording of oceanic whitetip shark in a separate category in logbooks of all pelagic fisheries.

8.3 Control measures

8.3.1 International

Several RFMOs require full utilization of captured sharks and encourage the live release of incidentally caught sharks. Shark-finning bans have been implemented by 21 countries and the European Union (EU), as well as by nine RFMOs, which could help reduce mortality driven by international trade demand (Camhi et al. 2009). Otherwise, no focused species-specific international or domestic management measures are in place for oceanic whitetip sharks.

8.3.2 Domestic

In the United States, a combined pelagic shark quota of 488 metric tons dressed weight exists for oceanic whitetip, common thresher, *Alopias vulpinus,* and shortfin mako, *Isurus oxyrincus* sharks. Sharks that are caught by U.S. fishermen in the Atlantic Ocean must be landed with all fins naturally attached; however in the Pacific Ocean U.S. fishermen can land fins within a 5 percent fin-to-carcass ratio.

8.4 Captive breeding and artificial propagation

None available.

8.5 Habitat conservation

Palau has designated waters within its Exclusive Economic Zone as a shark sancutary and has prohibited all shark fishing.

8.6 Safeguards

None.

9. Information on similar species

Six shark species in the Order Carcharhiniformes have white-tipped fins that could be confused with fins of the oceanic whitetip shark. These six species are *Hemitriakis leucoperiptera, Hemigaleus microstoma, Paragaleus leucolomatus, Carcharhinus albimarginatus, Carcharhinus amblyrhynchos* and *Triaenodon obesus*. However, these species are rarely caught in pelagic fisheries and have not been identified in the Hong Kong fin market. While all these species have white-tipped fins, oceanic whitetip sharks are larger and generally more broadly rounded (see Annex 3) whereas fins of the aforementioned species are falcate.

10. Consultations

Country	**Support Indicated (Yes/No/ Undecided/ No Objection)**	**Summary of Information Provided**
Australia	Undecided	Species is not protected under Australian law; in development of a CITES Shark Species of Concern list earlier this year, Australia agreed with prioritization of hammerheads as a group, as well as sandbar, dusky, and oceanic whitetip sharks; dusky, sandbar, and oceanic whitetip are harvested commercially as target catch and bycatch in Australian waters; there is little to no management of oceanic whitetip internationally; pelagic sharks are poorly recorded in catch statistics; according to Australia, this species may meet the CITES criteria in the northwest Atlantic, but there are unlikely to be sufficient data to demonstrate this for other regions; identification of fins in international trade would be very difficult.

Azerbaijan	No objection	This species is not found in the Caspian Sea; no scientific data are available on the status of these populations; no trade data are available.
Canada	Undecided	Oceanic whitetip sharks are extremely rare in Canadian waters; there are no directed harvests and bycatch is uncommon.
Cape Verde	Undecided	Does not have any information at this time; will provide information at a later date.
China (Hong Kong)	Undecided	Does not have fishery targeting sharks, but are caught as bycatch; no data are available; provides report on shark fisheries and trade in shark products in Hong Kong; raised concerns about practicality of implementation and enforcement of listing in CITES due to identification issues.
Colombia	Support	The inclusion of this species will generate an institutional arrangement of environmental and fisheries authorities to meet the challenge of regulating international trade; Colombia calls attention to their experience in the management and administration of marine species under the CITES Convention, such as queen conch, one of the best-managed fisheries in the country.
Croatia	Undecided	Oceanic whitetip may occasionally occur in the Adriatic Sea, but no precise data are available.
Ecuador	Undecided	In Ecuador, directed fishing for sharks is illegal, and therefore, inclusion in CITES Appendix II would be consistent with the spirit of protection of these species encouraged by national legislation; the Environmental and Fisheries Authorities recognize the need to establish regional management for the following species of sharks: i) *Sphyrna lewini*; ii) *Sphyrna zygaena*; iii) *Isurus oxyrinchus*, iv) *Carcharhinus falciformis*, v) *Alopias pelágicus* and vi) *Prionace glauca*.
Finland	Undecided	Species does not occur in their waters and no active fishing exists; some shark pieces are sold in Finland, but origin is unknown.
France	Undecided	Species is not harvested; species is neither imported nor exported.
Germany	Undecided	Species has not been recorded in their waters and is presumably rare; no data available.
Greenland	Undecided	Species does not occur in Greenland waters; no data available.
Iceland	Undecided	This species has not been recorded in Icelandic waters.
Indonesia	Undecided	No species-specific biological or trade data available; this species is not protected; Indonesia is one of the world's top shark harvesters and exporters; Indonesia is formulating a National Plan of Action for sharks; raised concern about differentiating parts of listed species from non-listed species.
Italy	Undecided	Consultation with scientific experts has been initiated, but no information is currently available.
Kenya	Undecided	No data available; willing to conduct a landing-site interview with fishermen to develop better understanding of shark fisheries.
Latvia	Undecided	No shark species in the wild; no national legislation for this species; species not imported or exported.
Madagascar	Undecided	Dried shark fins of *Carcharhinus* spp. were exported to the European Union in the following quantities: 37892.40 kg (2007) and 37732.20 kg (2008); these are the only shark fins that are exported; there is no distinction made between species.
Malawi	Undecided	Is not a range state.
Mexico	Undecided	Species is captured and unloaded in Mexico and meat is sold on national markets for consumption; fins are sent to Asia; quantification of exports on fins and shark products at the species level is considered difficult; Mexico has fisheries management measures.

Monaco	Yes	Does not trade in this species; will support due to interest in biodiversity conservation and since sharks reside in the same ecosystem as tuna.
Montenegro	Yes	Did not provide information on oceanic whitetip sharks.
Morocco	Undecided	Present shark landings are ~3000 tons; landings are not separated by species; initiating a program studying the biological status of this species (and other sharks) and expressed willingness to cooperate with the U.S. on a program; shark measures include 5% maximum total harvest, logbook requirements, prohibition on manipulation of sharks on board, and prohibition on finning and oil extraction.
Namibia	Undecided	Has not been observed in Namibian waters and no data are available; Namibia does not support the unilateral decision by parties to propose the listing of commercially important aquatic resources without the cooperation of FAO; therefore, they will not support a CITES listing "if not done in cooperation with FAO."
Netherlands	Undecided	Species does not occur in North Sea; no data on catch or bycatch.
New Zealand	Undecided	Data are currently unavailable and will be provided in early September.
Peru	Undecided	Oceanic whitetip has restricted geographic distribution to north of Peru, but no data are available; fins are collected and grouped with other fins and exported to Asia; fin export is not recorded by species; according to Peru, they do not have the necessary information to support a listing of Peruvian shark species in CITES.
Poland	Yes	No trade data available; suggestion made to elaborate identification guides to assist in the identification of fins and teeth.
Russia	Undecided	Species is not distributed in Russian waters and not harvested by Russian fishermen; no data available.
Serbia	Yes	No data available.
Sweden	Undecided	Rarely found in Swedish waters; there are no exports from Sweden of this species, and little to no import of shark products to Sweden.
Thailand	Undecided	Caught as bycatch.
Turkey	No objection	Shark species are not targeted in Turkey's fisheries but are caught as bycatch.
Ukraine	No objection	Species does not occur in Ukrainian waters; not commercially caught by Ukrainian vessels; the following shark species were imported into the Ukraine in 2009 (8 months): *Squalus acanthias* (22 kg); *Scyliorhinus* spp. (172 kg); and other sharks unidentified (34,090 kg).
Vietnam	Undecided	Did not provide information on oceanic whitetip sharks.

11. Additional remarks

The United States intends to submit an Information Document that will identify and propose solutions to potential implementation issues that need to be addressed during the 18-month delayed implementation period.

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Life history parameters for oceanic whitetip shark

Growth rate (von Bertalanffy k)	0.10 yr^{-1} (Combined sex, north Pacific) 0.08-0.09 yr^{-1} (Combined sex, SW Atlantic)	Seki et al. (1998) Lessa et al. (1999)
Size at Maturity	168-196 cm TL (F; north Pacific) 175-189 cm TL (M; north Pacific) 180-190 cm TL (combined sex; SW Atlantic)	Seki et al. (1998) Lessa et al. (1999)
Age at Maturity	4 years (F; north Pacific) 5 years (M; north Pacific) 6-7 years (combined sex; SW Atlantic)	Seki et al. (1998) Lessa et al. (1999)
Observed longevity	11 years (North Pacific) 13 years (SW Atlantic)	Seki et al. (1998) Lessa et al. (1999)
Gestation period	9-12 months	Seki et al. (1998) Lessa et al. (1999)
Reproductive Periodicity	2 years	Seki et al. (1998) Lessa et al. (1999)
Litter size (mean)	5-6 (range=1-14)	Seki et al. (1998) Lessa et al. (1999)
Generation time (T)	10 years	Cortés et al. (2008)
Population growth rates (r)	0.087 year	Cortés et al. (2008)

Summary of population and abundance trend data for oceanic whitetip shark

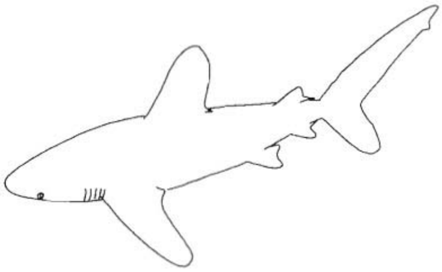
Year	Location	Data	Trend	Reference
1992-2005	NW Atlantic Ocean	Commercial pelagic fishery logbook	57% decline*	Cortés et al. (2007)
1992-2003	NW Atlantic Ocean	Commercial pelagic fishery logbook	70% decline*	Baum et al. (2003)
1992-2003	NW Atlantic Ocean	Commercial pelagic longline observer program	9% decline*	Cortés et al. (2007)
1954-1957 and 1995-1999	Gulf of Mexico	Fishery survey and commercial pelagic longline observer program	99% decline*	Baum and Myers (2004)
1954-1957 and 1995-1999	Gulf of Mexico	Average size	35% decline	Baum and Myers (2004)
1951-1958 and 1999-2002	Central Pacific Ocean	Fishery survey and commercial pelagic longline observer program	90% decline*	Ward and Myers (2005)
1951-1958 and 1999-2002	Central Pacific Ocean	Average size	50% decline	Ward and Myers (2005)
1967–1970 and 1992–1995	Central Pacific Ocean west of 180^{o} latitude	Fishery survey	No change	Matsunaga and Nakano (1996)
1967–1970 and 1992–1995	Central Pacific Ocean east of 180^{o} latitude and 0^{o}-10^{o} N	Fishery survey	40-80% increase	Matsunaga and Nakano (1996)
1967–1970 and 1992–1995	Central Pacific Ocean east of 180^{o} latitude and 10^{o}-20^{o} N	Fishery survey	30–50% decrease	Matsunaga and Nakano (1996)
1996 –2006	Eastern Pacific Ocean	Commercial purse seine observer program	~90% decline (inferred from figure)	IATTC SAR-7-11 (2006)
1995–2000 and 2004–2006	Central Pacific Ocean	Commercial pelagic longline observer program	78% decline in deep sets 54% decline in shallow sets	Walsh et al. (in press)

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

Guide to identification of oceanic whitetip shark fins (with permission from Dr. Hideki Nakano, Characterization of Shark Fin Products, A Guide of Shark fin caught by Tuna Longline Fishery, Fisheries Agency of Japan).

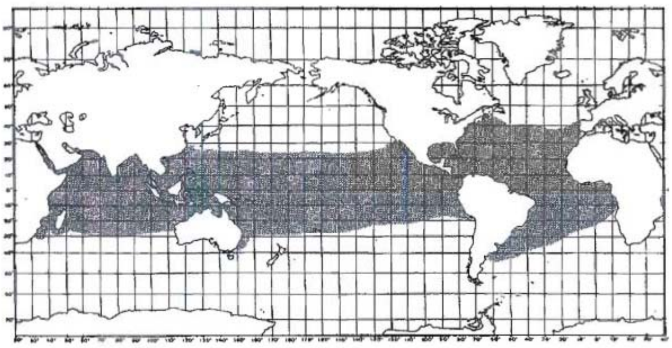
Oceanic whitetip shark

(*Carcharhinus longimanus*)



§ Distribution §

Cosmopolitan in tropical and warm temperate seas.



From Compagno, 1984

§ Fin Characteristics §

First Dorsal Fin

Shape: ·Fin height longer than its fin base length.
·Not falcate, distally expanded.
·Tip broad and rounded.

Color: ·Grayish bronze with black and white mottling on the tip.

Others:

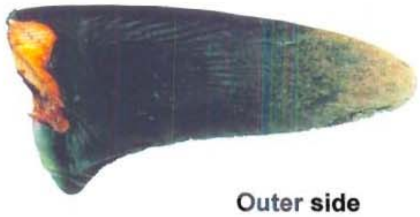
18

Pectoral Fin

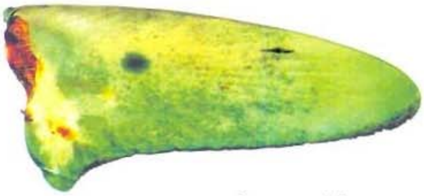
Shape: ·Nearly straight.
·Length of anterior margin more than three times of the fin base length.
·Tip broad and rounded.

Color: ·Grayish bronze on outer side with black and white mottling on the tip.
·White with black and brown spots on inner side.

Others:



Outer side



Inner side

Caudal Fin

Shape: ·Upper lobe much longer than lower one.

Color: ·Grayish bronze with black and white mottling on both tips.

Others: ·Caudal keel absent.