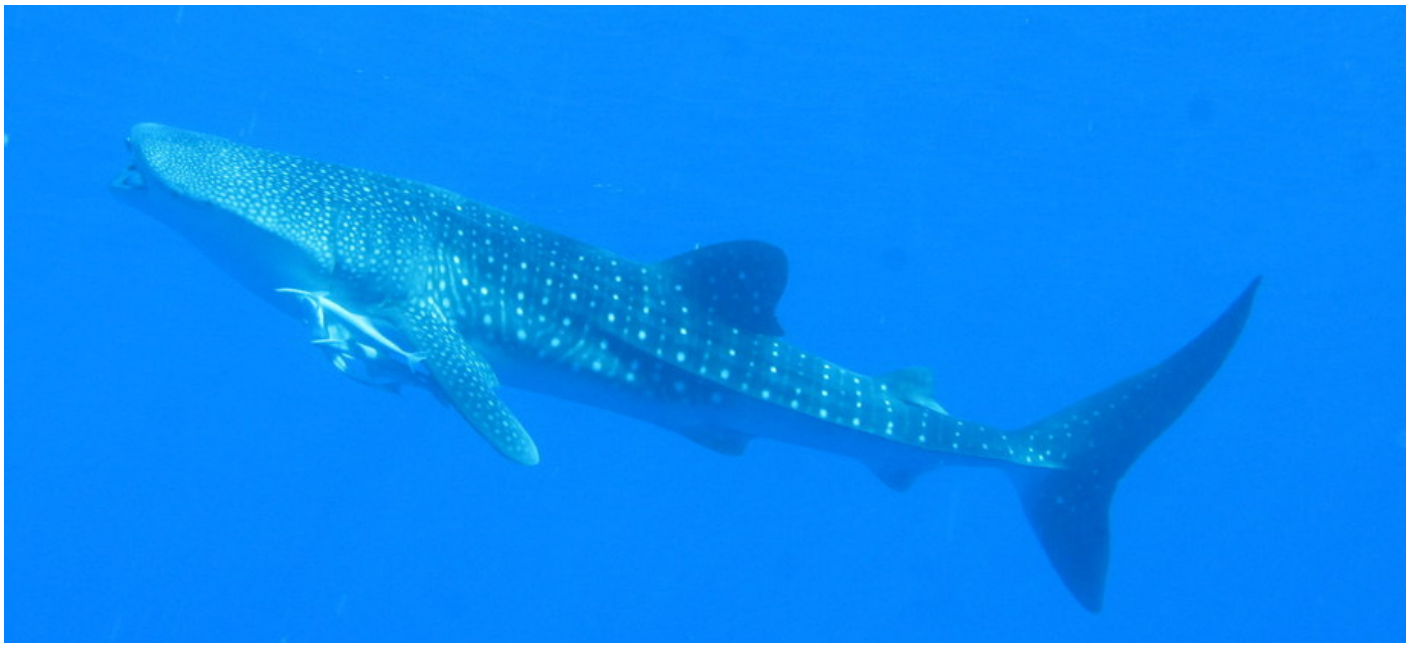
# Whale Shark

## (*Rhincodon typus*) proposed for Annex 3

***The world's largest fish species with aggregations of up to 1100 individuals in the region***



## Overview

The whale shark is the world's largest fish, with the biggest recorded individuals growing to over 15 meters' in length. Although it is a global tropical and warm temperate species, recent research has shown that the Western Atlantic subpopulation is genetically distinct form the Indo-pacific one. The Atlantic subpopulation of the whale shark has declined by 30% over the past three generations and it is therefore classed as 'Vulnerable' on the IUCN red list. They are listed on Appendix I and II under the Convention on Migratory Species (CMS) and in Appendix II of the Convention on International Trade of Endangered Species (CITES). The listing of the whale shark in Annex 3 of SPAW would thus be consistent with international agreements and would be compliant with criteria 4 (IUCN), 5 (CITES) and 6 (regional cooperation). Criterion 1 is met due to the decline and fragmentation of the populations.

- World's largest fish species with slow growth and poorly understood reproduction
- Large aggregations of up to 1100 individuals in the region, with seasonal migration following food sources
- Sensitive to ship strike due to surface feeding and aggregating behavior
- Included on the IUCN Red List of Threatened Species as "Vulnerable"
- Listed on Appendix II of CITES, Appendix I of CMS, and the CMS MoU sharks

## Biology and distribution

Whale sharks are the world's largest fish species, the largest recorded individual has a length of 20 meters and individuals of over 15 meters are frequently observed. Whale sharks are filter feeders that use their gill plates to sieve plankton, algae and small fish out of the water. A lot of this feeding occurs at the surface, but dives to 2000 meters depth have been recorded. Most sightings of whale sharks occur at specific coastal feeding sites with plankton blooms or fish spawning events. At times, large aggregations of hundreds of sharks gather at these locations and there is a degree of inter-annual site fidelity.

Very little is known about the growth and reproduction of whale sharks. Males are estimated to mature at 7 meters length and females at 9 meters. There are sightings of pregnant females from the Wider Caribbean region, but newborn fish were never observed.

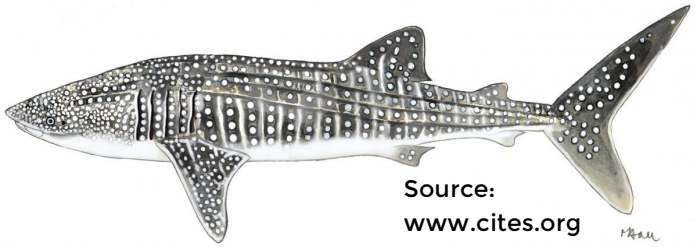
Unique individual spot patterns have been used to count the exact number of whale sharks; these 7011 individuals represent a minimum number of whale sharks alive today. Research of mitochondrial DNA revealed that the Atlantic and Indo-Pacific sub-populations are functionally separate.

## Population status

The IUCN assessed the global conservation status of whale sharks as endangered as a result of global population declines of more than 50% and continued targeted fishing effort in the Indo-Pacific, which increases the risk of over-exploitation.

The Atlantic subpopulation has decreased by 30% over the past 75 years, rendering the regional population of this species vulnerable according to IUCN. While there still is an active fishery on the Indo-Pacific whale shark subpopulation, as well as illegal operations, the Atlantic subpopulation does not appear to suffer from directed fisheries activity nor from trade. There is, however, some risk of bycatch in purse-seine tuna fisheries, although observer bycatch mortality in the region is low (below 3%).

Another potential cause of mortality is vessel strike in shipping lanes when these are close to surface feeding areas. In the Wider Caribbean Region, the Yucatán Channel is one of the world's most intense



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shipping lanes, which also plays an essential role in whale shark migration. Mortality of whale sharks by ship strikes is difficult to assess, because contrary to whales, whale shark carcasses sink to the bottom and do not wash up.

An active eco-tourism industry has sprung up around some of the more accessible aggregation sites. This presents a risk of interference, crowding or provisioning when not set up sustainably. In some locations, dozens of boats at one time can be seen around a group of sharks, which increases the risk of ship strike and other disturbances. At Quintana Roo in Mexico, over 30% of sharks display scars indicating heavy damage from ship strikes.

## Conservation action

Whale sharks are listed on CITES Appendix II, which means that any international trade is only allowed from sustainably-managed populations and with a valid permit. They are also listed on Appendix II under the Convention on Migratory Species (CMS) This identifies whale sharks as a migratory species whose unfavorable conservation status would benefit from the implementation of international management.

In the wider Caribbean region, the Bahamas, Belize, Costa Rica, Dominican Republic, Guatemala, Guadeloupe, Guyana, Honduras, Mexico, Nicaragua, Panama, and the USA have implemented protective legislation, either through species protection or shark finning bans. Some countries in the region have protected key habitats where whale sharks aggregate. This has been done in Belize (Gladden Spit), Costa Rica (Cocos Island), Mexico (Yum-Balam Biosphere Reserve) and Panama (Coiba Island).