

# SHARKS: AN INTRODUCTION TO THEIR LIFE HISTORY, MANAGEMENT AND CONSERVATION

COMPILED BY THE INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE (IUCN)  
SHARK SPECIALIST GROUP (SSG)

## 1. WHAT ARE SHARKS?

There are 1,041 described Chondrichthyan species around the world. Of these 1,041 species, 465 are sharks. However this number is growing as a new Chondrichthyan species is described, on average, every two weeks!

To clarify, Chondrichthyans means that these species skeletons are formed from cartilage as opposed to bone. It is used to describe all sharks (Elasmobranchii), rays and skates (Batoidea) and chimaeras (Chimaeriformes) species. Elasmobranchs are largely sharks, batoids are largely rays, but also include guitarfishes, sawfishes and coldwater skates, and chimaeras are also known as ratfishes.



Many reports (i.e. those written by our organization) use the term sharks to mean all Chondrichthyan species (sharks, rays, skates and chimaeras) - whereas others use the term shark to mean just the Elasmobranchs.

## 2. WHAT ARE THE REASONS FOR GLOBAL SHARK POPULATION DECLINES?

Sharks have low reproductive capacity (slow growth, late maturity and low potential reproductive rate) (Camhi *et al.* 2007) which make them extremely vulnerable to extinction at high levels of exploitation. Currently, fishing mortality is the greatest threat to Chondrichthyans (sharks, rays and chimaeras). Shark mortality can be from directed fisheries targeting sharks, from fishing operations that are targeting other more valuable fish species but catch sharks in their indiscriminate fishing gears (longlines, trawls) and especially from fisheries that fin sharks (Dulvy *et al.* 2010).

It is hard to say which species are taken by the finning industry. Scientific studies have carried out genetic and market surveys to determine which species are for sale but this has only been in certain markets in certain areas of the world. For more information click on the following link: <http://www.iucnssg.org/index.php/finning>



*To promote the long-term conservation of the world's sharks and related species, effective management of their fisheries and habitats, and, where necessary, the recovery of their populations.*

### 3. HOW MANY SHARKS A YEAR ARE KILLED FOR THEIR FINS?

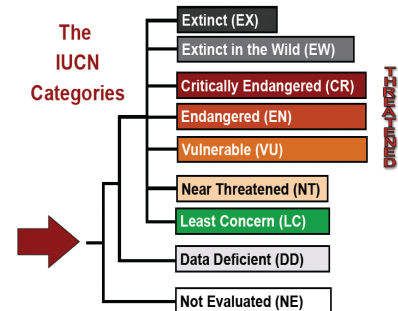
This number is hard to estimate, however a study released by Clarke *et al.* (2002) estimates that between 26 and 73 million sharks are killed each year.

### 3. HAVE ANY SPECIES OF SHARK BECOME EXTINCT THROUGH THE IMPACTS OF FISHING?

To our knowledge, no sharks have become extinct globally due to industrial scale fishing. However, there are some populations of species that have become locally extinct. For examples see Dulvy *et al.* (2003), [http://www.iucnssg.org/tl\\_files/Assets/pdf/SN/Dulvy\\_2003\\_FishFisheries.pdf](http://www.iucnssg.org/tl_files/Assets/pdf/SN/Dulvy_2003_FishFisheries.pdf); Dulvy and Forrest (2009), [http://www.iucnssg.org/tl\\_files/Assets/pdf/SN/Dulvy\\_and\\_Forrest\\_2009.pdf](http://www.iucnssg.org/tl_files/Assets/pdf/SN/Dulvy_and_Forrest_2009.pdf)

### 4. HOW DOES THE IUCN CLASSIFICATIONS SCHEME WORK?

The IUCN Red List uses the following classifications (must be capitalized) to describe the threat status of a species: Critically Endangered, Endangered, Vulnerable - these three are the categories people talk about when they say a species is 'Threatened'. The other three classifications are: Near Threatened, Least Concern and Data Deficient. These classifications follow strict IUCN Red List guidelines – rate of population decline, numbers in the wild, size of area that they are present in and threats that the species may face. Please go to [www.iucnredlist.org](http://www.iucnredlist.org) for more information.



Nearly half of all Chondrichthyan species are Data Deficient - we don't have enough information on them to make a classification. However, there is quite a large chance that these species are threatened to some degree as many are described from only one specimen!

**Table: Threat status of sharks, rays, skates and chimaeras (1,041 described Chondrichthyan species) and the sharks (465 described Elasmobranch species)**

Red List Category	Chondrichthyans (Sharks and their relatives)	Elasmobranchs (Sharks)
Critically Endangered	25	11
Endangered	43	15
Vulnerable	113	48
Near Threatened	132	67
Least Concern	241	115
Data Deficient	487	209

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