

# SHARK FISHERIES

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## Introduction

- ❖ "Sharks" is the common noun given to the Selachimorpha subdivision
- ❖ There are approximately 500 shark species
- ❖ Most studied sharks have slow growth, late maturity and low fecundity, which make them vulnerable to uncontrolled fishing activity

## Fishing methods

### Gillnet and driftnet

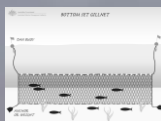


Fig. 1 Set gillnet

### Longline

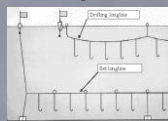


Fig. 2 Longline

### Purse seine



Fig. 3 Purse seine

### Trawling

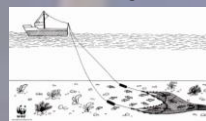


Fig. 4 Demersal trawling

## Exploitation reasons

### Fins



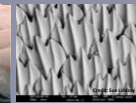
Fig. 5 Shark fins

### Meat



Fig. 6 Shark meat

### Skin

Fig. 7 *Carcharhinus obscurus* denticles

### Liver



Fig. 8 Shark liver oil capsules

### Cartilage



Fig. 9 Shark cartilage capsules

### Other uses

### Jaws and other curios

Fig. 10 Jaws of *Isurus paucus*

### Aquarium exhibition

Fig. 11 *Rhincodon typus* in Okinawa Churaumi Aquarium

### Fishmeal



Fig. 12 Fishmeal

### Medical research



Fig. 13 Medical research

## Total captures from 1950 to 2011

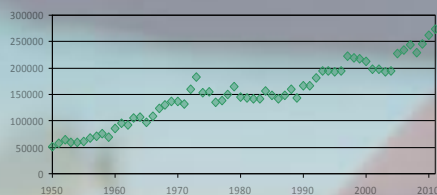


Fig. 14 Total shark catches (in tonnes)

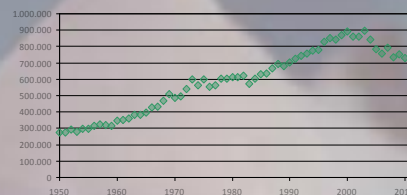


Fig. 15 Total chondrichthyan (sharks, rays and chimaeras) catches (in tonnes)

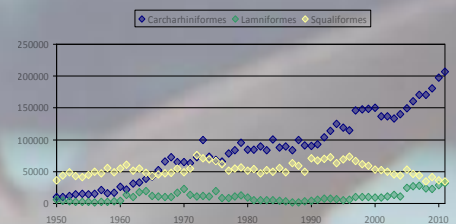


Fig. 16 Catches of the three most exploited shark orders (in tonnes)

## Conservation and management measures

### International legal regime applicable to sharks

- Binding fisheries instruments
- Binding non-fisheries instruments
- Non-binding fisheries instruments

### IPOA\* Sharks

- ❖ Aims: ensure the conservation and management of sharks and their long-term sustainable use and facilitate the implementation of NPOAs
- ❖ It applies to all species of sharks, skates, rays and chimaeras, and to all types of catches and waters

❖ Its implementation is voluntary

### NPOA\* Sharks

- ❖ 48 of 143 reporting shark catches countries (and 18 of the 26 top-shark fishing countries) have adopted an NPOA Sharks
- ❖ Not all countries explain how the plan is integrated or linked to their already existing legal and fisheries management systems

### Shark fin measures

- ❖ It is not allowed to dump shark carcasses into the sea
- ❖ Fins cannot exceed 5% of sharks' weight on board until the first point of landing
- ❖ Sharks must be landed with their fins attached

Effectiveness of MCS\* schemes changes greatly from country to country

15 of the 26 top shark-fishing countries, areas, territories and entities have adopted shark fin measures

### Other shark measures

- ❖ Protected species
- ❖ TACS\*
- ❖ Licenses and permits
- ❖ Reporting and research requirements
- ❖ MCS measures
- ❖ Promotion of public awareness for shark conservation issues

The type of measures applied changes considerably among countries

20 of the 26 top shark-fishing countries, areas and territories have adopted specific shark conservation measures other than fin regulations

## Most exploited sharks in 2011

In 2011 we can find data from catches of 55 species, 7 genera and 6 families. 11 species, 3 genera and 1 family are greater than 1000 tonnes

Fig. 25 *Prionace glauca*

IUCN\* Red List status: near threatened

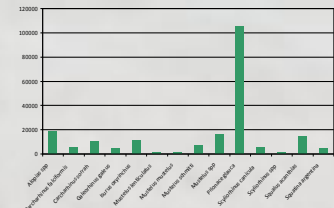
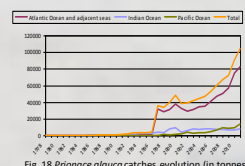


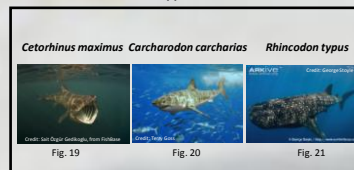
Figure 17. Exploited sharks with catches over 1000 tonnes in 2011

Fig. 18 *Prionace glauca* catches evolution (in tonnes)

## Protected species by CITES\*

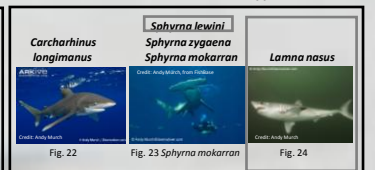
(to ensure that international trade does not threaten wild species survival)

### In appendix II



Appendix II: species that are not necessarily threatened with extinction but may become so unless trade is closely controlled

### New additions to appendix II (from 14 September 2014)



Appendix III: species included at the request of a country that already regulates trade in the species and that needs the cooperation of other countries to prevent unsustainable or illegal exploitation

## Conclusions

- ❖ Shark catches increase every year
- ❖ An intense type of fishing activity proves to be specially damaging for sharks due to their biological features
- ❖ It is difficult to control effectively the compliance of management measures, and moreover they change from country to country
- ❖ Shark fisheries have an announced future: a depletion in shark populations, which take time to recover – if they do. Given this situation, it would most likely entail negative effects on ecosystems

### \*Abbreviations

CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora  
 CMS: the 1979 Convention on Migratory Species  
 IPOA Sharks: International Plan of Action for the Conservation and Management of Sharks  
 IUCN: International Union for Conservation of Nature  
 MCS (Monitoring, Control and Surveillance)  
 NPOA Sharks: National plans of action for the conservation and management of sharks  
 TAC: Total Allowable Catch

### References

Figure 1: <http://www.afna.gov.au/resource-centre/teachers-and-students/aboutfishing-methods-and-devices/gillnets/>  
 Figure 2: <http://www.fao.org/fishery/geotype/232/en/>  
 Figure 3, 4: fishing methods: <http://www.wvhs.co.za/?m=4&c=1>  
 Figure 5: [http://www.underwatertimes.com/news.php?article\\_id=01478592106](http://www.underwatertimes.com/news.php?article_id=01478592106)  
 Figure 6: [http://blogs.miaminewtimes.com/shortorder/2013/02/public\\_sells\\_shark\\_meat\\_\\_eat.php](http://blogs.miaminewtimes.com/shortorder/2013/02/public_sells_shark_meat__eat.php)  
 Figure 7: <http://australianmuseum.net.au/images/Dusky-Shark-denticles-Carcharhinus-obscurus/>  
 Figure 8: <http://www.mothersnature.com.au/shark-liver.html>  
 Figure 9: <http://www.greenhealth.co.nz/sharkcartilage.html>  
 Figure 10: <http://www.sealifeffits.net/Mako-Shark-Jaw-1947.html>  
 Figure 11: <http://www.flickr.com/photos/ianaprica/206022172/>  
 Figure 12: <http://www.paradisefishmeal.org/fishmeal.html>  
 Figure 13: <http://www.leinberg.northwestern.edu/research/services/give.html>  
 Figures 14, 15, 16, 17, 18: Data extracted from FAO – Fisheries and Aquaculture Information and Statistics Service: <http://www.fao.org/fishery/statistics/en/>  
 Figure 19, 23, 24: [www.fishbase.org](http://www.fishbase.org)  
 Figure 20: <http://shark-references.com/post/552/>  
 Figure 21, 22, 25: [www.arkive.org](http://www.arkive.org)  
 Background: *Carcharhinus plumbeus* at the Newport Aquarium, Kentucky, USA. Credit: Jeff Kubina