# FACTSHEET **SHARKS**







# **SPECIES**

Nearly 500 worldwide

Smallest: 18-20 cm, 7-8 in, (Dwarf lantern shark) Largest: over 18 m, 60 ft (Whale shark)

## **HABITAT**

Shallow, coastal regions to deep water; ocean floor to open ocean

# **TAXONOMY**

Class: Chondrichthyes Subclass: Elasmobranchii

### LIFE SPAN

Avg. 20-30 years, up to 100 years (Whale Shark)

# **GEOGRAPHIC** DISTRIBUTION

Worldwide



## **DESCRIPTION**

Flexible cartilaginous skeletons, 5-7 gill slits, elongated counter-shaded bodies. Tooth-like scales (dermal denticles). Excellent sight, smell, and hearing. Additional receptive sensory system (Ampullae of Lorenzini).



# **BEHAVIOR**

Varying degrees of social interactions. Some species migrate far distances for feeding and breeding. When threatened, display aggressive movements, arched backs, and lowered pectoral fins.



# REPRODUCTION

Sexually maturity: 7-25 years. Live young (viviparous) and lay eggs (oviparous). Gestation up to 22 months. Offspring range from 1-2 pups (Sand Tiger Sharks) to about 300 (Whale Sharks).



### DIET

Fish, crustaceans, mollusks, plankton, krill, marine mammals, marine birds, reptiles, and other sharks.



### **PREDATORS**

Humans, other sharks, killer whales.



# **MAIN THREATS**

# Overfishing and finning

- 97 million sharks killed annually (266,000/day) for fins, meat, cartilage, liver, and skin.
- 90% declines in the last 50-100 years.
- 46% of migratory sharks and 25% overall are threatened with extinction.

Loss of habitat, pollution, and lack of management Bycatch: ~50% of high seas fisheries catch.





# **SOLUTIONS**

- Ban the catch of sharks and shark finning
- Enforce existing laws
- Improve species management
- Establish no-take marine reserves
- Obtain biological & stock assessment data
- Advise communities, policymakers, fishers, and consumers on shark importance, and the extremely low shark attack numbers

Chances of getting attacked by a shark: 1 in 11.5 million

# **SPECIES IMPORTANCE**

### **ECOLOGICAL VALUE**

Sharks are dominant (apex) predators, and are vital for maintaining biodiversity and healthy ecosystems in all ocean communities.

### SOCIOECONOMIC VALUE

• Globally: shark tourism \$314 million annually

• Whale Shark tourism: \$47.5 million

• Reef tourism: \$9.6 billion

• Single shark's value: \$1.9 million (\$179,000 annually)









Sharks are definitely at the top of the list for marine fishes that could go extinct in our lifetimes."

Dr. Julia Baum



# **KEY WEBSITES**

### SHARKS OF THE ATLANTIC RESEARCH AND **CONSERVATION CENTRE (SHARCC)**

www.atlanticsharks.org

THE SHARK RESEARCH INSTITUTE www.sharks.org

### PEW GLOBAL SHARK CONSERVATION

www.pewtrusts.org/en/projects/global-sharkconservation

#### **END OF THE LINE: WILDAID & OCEANA**

oceana.org/sites/default/files/o/fileadmin/ oceana/uploads/Sharks/EndoftheLine\_Spread\_

#### REEFQUEST CENTRE FOR SHARK

RESEARCH: www.elasmo-research.org/index.

#### SOS: SUPPORT OUR SHARKS:

www.supportoursharks.com/default

#### TIME MAGAZINE: SHARK FIN SOUP:

content.time.com/time/magazine/

# VIDEO

### PEW: ECONOMIC VALUE OF SHARKS

www.pewtrusts.org/en/research-and-analysis/ reports/2011/05/02/milliondollar-reef-sharks

#### **SHARK AWARENESS EDUCATION**

www.voutube.com/watch?v=Lma5bzeWaI4

### NATIONAL GEOGRAPHIC | SHARKS IN THE **BAHAMAS**

nam.nationalgeographic.com/2007/03/ bahamian-sharks/video-interactive

#### **CARTOONIST JIM TOOMEY ON HEALTHY**

REEFS: www.youtube.com/watch?v=pZ-517dM1lc

#### SHARKS' IMPORTANCE TO HEALTHY REEFS:

www.youtube.com/watch?v=RxtzVYBIC08

#### PEW: SHARKS' ROLE IN OCEAN FOODWEB

www.youtube.com/watch?v=yDqzGOa-adc



# **EXPERTS**

#### ROBERT HUETER, PH.D.

Associate Vice President for Research, Senior Scientist, Director of the Center for Shark Research, Mote Marine Lab

#### TRISTAN GUTTRIDGE, PH.D.

Director, Bimini Biological Field Station, Research Associate, Cardiff University

#### DAVID A. EBERT, PH.D.

Program Manager, Adjunct faculty, Pacific Shark Research Center -Moss Landing Marine Laboratories

#### JULIA BAUM, PH.D.

Assistant Professor of Biology, University of Victoria

#### **NEIL HAMMERSCHLAG, PH.D.**

R.J. Dunlap Marine Conservation Program; Research Assistant Professor, Rosenstiel School University of Miami



# **REFERENCES**

- 1. Bigelow, H.B. and Schroeder, W.C. 1948. Fishes of the western North Atlantic, Part I: Lancelets, Cyclostomes, Sharks. Memoirs of the Sears Foundation for Marine Research, 1 (1): 59-576.
- 2. Castro, J. I, Woodley, C. M, and Brudek, R. L. 1999. A preliminary evaluation of the status of shark species. Rome: Food and Agricultural Organization of the United Nations.
- Compagno, L.J.V. 2001. Sharks of the world. An annotated and illustrated catalogue of shark species known to date. Volume 2. Bullhead, mackerel and carpet sharks (Heterodontiformes, Lamniformes and Orectolobiformes). FAO Species Catalogue for Fishery Purposes. No. 1, Vol. 2. Rome, FAO. 2001. 269p.
- 4. Kyne, P.M., Carlson, J.K., Ebert, D.A., Fordham, S.V., Bizzarro, J.J., Graham, R.T., Kulka, D.W., Tewes, E.E., Harrison, L.R., and Dulvy, N.K. (eds). 2012. The Conservation Status of North American, Central American, and Caribbean Chondrichthyans. IUCN Species Survival Commission Shark Specialist Group, Vancouver, Canada. https:// portals.iucn.org/library/efiles/documents/2012-046.pdf
- Straube N., Iglesias S.P., Sellos D.Y., Kriwet J., and Schliewen UK. 2010. Molecular phylogeny and node time estimation of bioluminescent lantern sharks (Elasmobranchii: Etmopteridae) Molecular Phylogenetics and Evolution 56(3): 905-17.

- Hoenig, J.M.; Gruber, S.H. 1990. Life-history patterns in the elasmobranchs: implications for fisheries management. In: Pratt, H.L., Jr.; Gruber, S.H.; Taniuchi, T., eds. Elasmobranchs as living resources: advances in biology, ecology, systematics and status of the fisheries. NOAA Tech. Rep. NMFS 90:1-16.
- National Aquarium Education Department Shark Fact Sheet: http://www.agua.org/learn/~/media/Files/Learn/Education%20 Baltimore%20PDFs/Education%20Fact%20Sheets/Sharks\_ EdFactSheet\_Middle.pdf
- Joung, S.J., Chen, C.T., Clark, E., Uchida, S. and Huang, W.Y.P. 1996. The whale shark, Rhincodon typus, is a livebearer: 300 embryos found in one mega mamma supreme. Environmental Biology of Fishes 46: 219-223.
- Worm B., Davis B., Kettermer L., Ward-Paige C.A., Chapman D., Heithaus M.R., Kessel S.T., and Gruber S.H. 2013. Global catches, exploitation rates, and rebuilding options for sharks. Marine Policy 40: 194-204
- 10. Myers R. A., and B. Worm. 2005. Extinction, survival, or recovery of large predatory fishes. Proceedings of the Royal Society B.

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Overfishing, IUU, Tourism, Coral Reefs, Sustainable Seafood

Available: WaittInstitute.org/factsheets



