



Alex Hofford/Greenpeace

# Considering Shark Biology in Management

The population growth of any species depends on its life-history characteristics. With many of the world's shark populations declining, it is important to examine how these characteristics differ from other fish to identify the most effective management approaches.

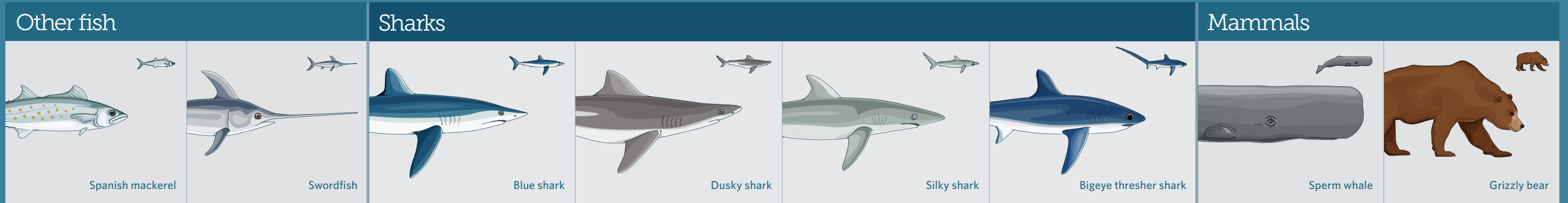
In most cases, bony fish achieve sexual maturity at an early age, reproduce often, and have many offspring (Poisson and Fauvel 2009). In comparison, sharks grow slowly, mature later in life, and have few offspring (Simpfendorfer et al. 2008). For example, a female shark that produced 10 pups every two years for 20 years would add only about 100 individuals to the population. In contrast, a female swordfish could produce millions of offspring in her lifetime, and thousands could survive (Poisson and Fauvel 2009).

The life histories of many sharks are actually more similar to those of large mammals than to other fish. For example, the age at sexual maturity and gestation period of many shark species approximate that of large mammals.

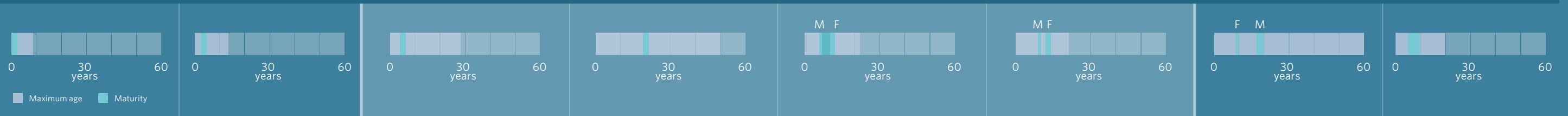
Owing to their similar life histories, management approaches used for large mammals that have undergone steep population declines could hold promise for sharks. For example, trade in sperm whale and brown bear products are strictly regulated under Appendices I and II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Additionally, the global moratorium on commercial whaling and the listing of sperm whales on Appendices I and II of the Convention on Migratory Species assisted in this species' recovery.

Because of the life-history characteristics of sharks, conventional fisheries management approaches, such as reaching maximum sustainable yield, may not be sufficient to rebuild depleted shark populations. Some of the more stringent approaches used to reverse declines in large mammals, however, may be appropriate for sharks, including prohibitions on the retention of the most vulnerable species and CITES Appendixes I and II listings that regulate international trade.

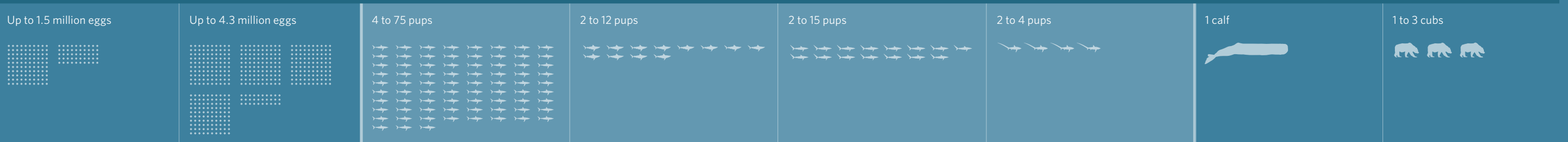
# Sharks: Not Like Other Fish



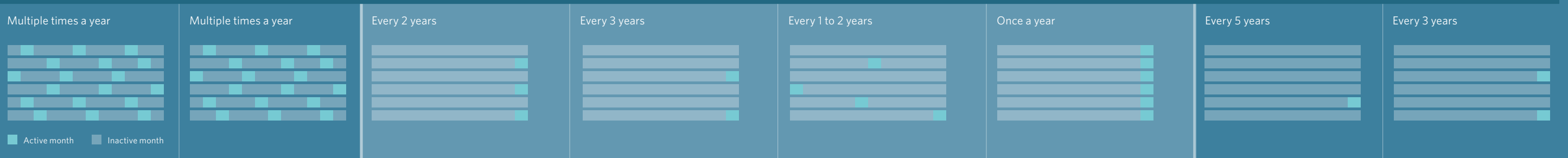
**Life span:** Many shark species live longer than other fish and reproduce later in their lives.



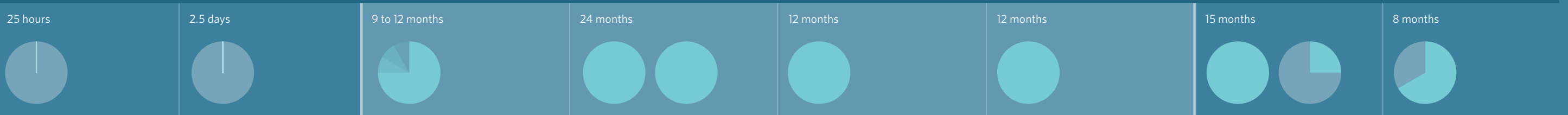
**Offspring:** Sharks produce far fewer young than other fish do.



**Capacity to reproduce:** Sharks reproduce infrequently compared with other fish.



**Gestation length:** Sharks carry their young longer than some mammals do.



Note: For list of sources, please visit [pewtrusts.org/sharks-mammals](https://www.pewtrusts.org/sharks-mammals)

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