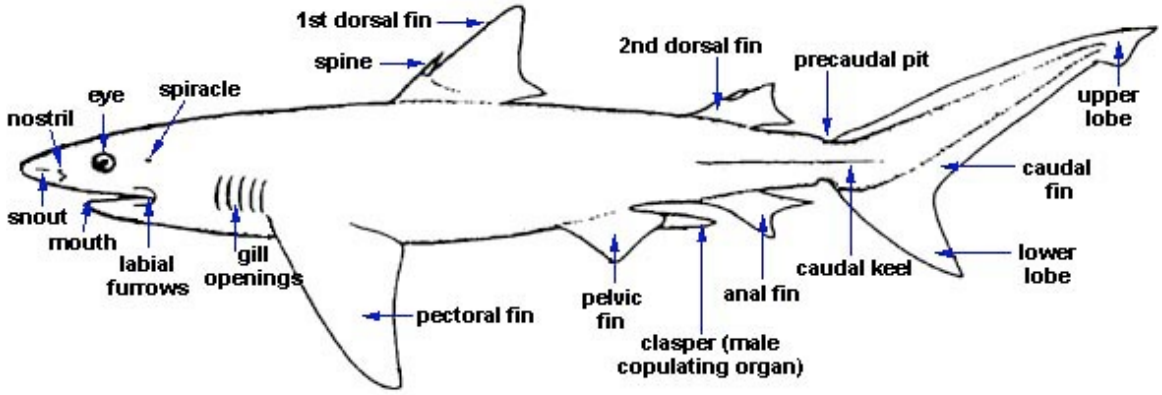
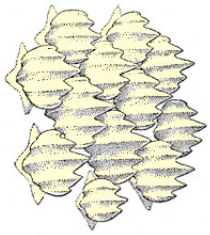
Department of Planning and Natural Resources
Division of Fish and Wildlife

U.S.V.I. Animal Fact Sheet #30
Sharks



General Description

Shark species comprise 1% of all living fishes. They are a member of the Chondrichthyes class and are collectively known as elasmobranchs. There are approximately 350 species of shark found worldwide and they occur in both tropical and temperate regions.



Their skin is covered with denticles, which are tooth-like projections from the skin. These denticles make the skin rough and give it the texture of sandpaper. They have five to seven gill slits and gill arches per side. They have no swim bladder. To maintain their position in the water column, sharks have an asymmetrical tail fin and flattened pectoral fins to propel them forward and upward in the water column. A very oily liver also provides buoyancy to compensate for the lack of a swim bladder. Elasmobranchs also have a cartilaginous skeleton rather than bones, making it difficult to find fossilized records of their existence.

In the Virgin Islands, 11 species of shark may be found. Of those 11, only two species have been recorded to attack man. Those species are the tiger shark (*Galeocerdo cuvier*) and the bull shark (*Carcharhinus leucas*). However, there have only been 3 recorded shark attacks in the Virgin Islands with the last one occurring in 1992. With one exception, these attacks were caused by harassing the shark. The incidence of shark attacks are globally so low that it is 900 times more likely for a person in New York to be bitten by another person than for someone to be attacked by a shark.

Feeding

Sharks have adapted to eating a wide variety of organisms. One of the most important adaptations is the loosely attached lower jaw. The jaw of a shark can be unhinged to open very wide while feeding. They also can have as many as 8 rows of teeth. Whenever a shark loses a tooth, another one moves up to take its place. A shark can go through up to 2,400 teeth a year.

Some shark species have adapted to bottom feeding and they are able to use their lower jaw to pick up prey from the floor bottom. Others such as the basking shark (*Cetorhinus maximus*) and the megamouth shark (*Megachasma pelagios*) are filter feeders. They strain plankton from the water using gill rakers. The largest shark in the world, the whale shark (*Rhincodon typus*), also filter feeds but


Whale Shark

does not use gill rakers. They instead strain plankton though spongy tissue supported by cartilaginous rods between the gill arches.

Most sharks are predators and, as such, most of them feed on other fish. Large sharks, such as the tiger shark and the great white shark (*Carcharodon carcharias*) feed on marine mammals such as seals, dolphins, sea-lions, turtles, birds and other fish.

Sharks are generally not very selective in the type of food that they eat. However, there are some exceptions. Hammerhead sharks seem to prefer eating stingrays, while bull sharks eat other sharks. Tiger sharks, on the other hand, will eat both live and dead animals and are known as the "garbage cans of the sea", since they will eat just about anything. This includes bony fishes, other sharks, marine mammals, sea birds and invertebrates.

Reproduction

Depending on the shark, reproduction may occur in one of three ways, they may lay eggs (oviparity), bear live young (viviparity), or the young may hatch from eggs within the mother (ovoviparity).

Oviparity

If the shark is oviparous, it means that the shark will lay eggs like birds and the sharks will develop within the egg. None of the sharks found in the US Virgin Islands are oviparous.


Great Hamerhead

Viviparity

In this reproductive method, sharks give birth to live young. Several of the sharks found in the US Virgin Islands reproduce using this method. They include the Silky (*Carcharhinus falciformis*), Bull (*C. leucas)*, Blacktip (*C. limbatus*), Oceanic Whitetip (*C. longimanus*), Reef (*C. perezi*), Lemon (*Negaprion brevirostris*), Great Hammerhead (*Sphyrna mokarran*) and the Dusky Smooth-hound (*Mustelus canis*) sharks.

Ovoviparity

Ovoviparity occurs when young hatch from eggs while still inside the mother. The embryos are nourished by a yolk sac. As they develop the young sharks will eat unfertilized eggs and other embryos. Ovoviparous species found within the USVI are the bluntnose six gill (*Hexanchus griseus*), the nurse (*Ginglymostoma cirratum*), and the tiger


Tiger shark

(*Galeocerdo cuvier*) shark.

Threats

Sharks are very vulnerable to overfishing and to shark fining (where the fins are cut off and the shark is thrown back into the water) sharks do not regenerate their fins.. Since sharks take between 8-20 years to reach sexual maturity, they take a long time to reproduce. Also, some species only produce a litter every two years. This reproductive strategy makes sharks vulnerable to overfishing, which can occur fairly easily and cause disastrous effects on the shark population. Harvesting more sharks than are actually being produced will eventually cause the extinction of shark species being harvested. Already several shark species are listed as being either endangered, critically endangered or vulnerable in several countries.

Shark attacks

While shark attacks are very rare, there are a few precautions that can be taken in order to reduce the risk of any attacks. They are:

- Do not swim, dive or surf where dangerous sharks congregate.
- Always swim, dive or surf with other people.
- Do not swim in dirty or turbid water.
- If schooling fish are behaving strangely or are grouping together in large numbers, leave the water.
- Do not swim near people line fishing or spear fishing.
- If a shark is sighted in the area, leave the water as quickly and calmly as possible.

For more information on sharks and other local species please refer to our website at: www.vifishandwildlife.com

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REFERENCES FURNISHED UPON REQUEST
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