

## Sharks in Galapagos

The Humboldt and Cromwell currents and the cooler waters of Galapagos draw sharks to feed in the Galapagos Marine Reserve. Even though shark fishing is prohibited, illegal fishing continues to threaten their existence. Scientists at the Charles Darwin Foundation (CDF) recognize that improved understanding of sharks is the key to providing adequate protection.

### *Native to Galapagos*

27 species of sharks are native to Galapagos. These fit into three groups:

- Whale sharks (*Rhincodon typus*): Grey-brown fading to pale underside, white spotted pattern. These sharks are rare throughout Galapagos, and mainly found in open water. They are the largest fish in the world, reaching up to 18 meters in length.
- Hammerhead sharks (*Sphyrna* species): Silver-grey to grey-brown in color, and white on the underside. Their distinctive heads are flattened, extended to each side, with the eyes set on the outer edges. They are most common near Wolf and Darwin Islands in the north of the archipelago. Galapagos is one of the last remaining places where large schools of scalloped hammerhead sharks can be observed. They cruise over reefs and boulder-strewn slopes
- "Pointy-nosed" sharks - including Galapagos sharks (*Carcharinus galapagensis*), Silky sharks (*C. falciformis*), white tipped (*Triaenodon obesus*) and black tipped (*C. limbatus*) reef sharks: Generally silvery-grey or grey-brown fading to pale underneath, depending on species. Galapagos and white tipped reef sharks have rounded snouts and are more common throughout Galapagos than the other species. Silky shark skin is smooth to touch. They are mainly found in open water, whereas the other species are found near rocky reefs and boulder-strewn slopes.

Sharks feed on fish, including other smaller sharks, and rays. Sharks are important to marine ecosystems because they are the top predator in the food chain. They drive natural selection processes by feeding on weaker and slower fish, including other sharks. Ecosystems lacking large sharks are often imbalanced. Smaller sharks increase in number causing a decrease in smaller bony fish prey. Whale sharks are the general exception, eating plankton, baitfish, tuna, and squid sieved from the water.

Sharks are frequently accompanied by remoras, cleaning fish that attach themselves to large marine animals and remove parasites.

### CDF FOCUS: RESTORATION



### Key Facts

**Species:** 27 species native to Galapagos

**Common names:** Galapagos, silky, hammerhead, white tipped reef, black tipped reef, whale etc

**Size:** The whale shark is the largest shark found in Galapagos (up to 18m in length)

**Habitat:** Dependent on species; open sea or rocky reefs, boulder strewn slopes

**Diet:** Fish, other sharks, rays

**Range:** Throughout islands

**Status:** Galapagos and white tipped reef sharks are most common

## *Vulnerability*

Although all sharks have been fully protected within the Galapagos Marine Reserve (GMR) since 1994, they are still under constant threat. Many sharks are illegally fished for their fins which are used to make shark fin soup. Hammerheads, Galapagos sharks, reef sharks and silky sharks are among the eleven species of sharks fished for their fins. Often the fins are cut off and the bleeding fish are thrown back into the water. Fins are delivered to floating processing factories located just outside the GMR.

Sharks also die as by-catch in gillnets and longline fishing, which are banned in Galapagos. Large scale fishing has been identified as the single greatest threat to the GMR; however there is pressure from national and foreign fishing interests to legalize shark fishing.

Sharks, particularly hammerheads, are a tourist attraction and thus a source of income for the local community. However, there is concern about their current status. There is a general perception among dive guides that numbers of sharks have declined in recent years. Growth rates for hammerhead sharks are slow, sexual maturity is late, and reproduction rates are low. Together, these factors make it unlikely that the populations of hammerheads will survive if illegal fishing continues. Sustainable shark fishing has not been achievable elsewhere in the world.

Although sport fishing is illegal in Galapagos, there are reports of it being promoted and carried out. Sharks are a likely target for sport fishers.

## *CDRS research activities*

The CDF was instrumental in achieving a complete ban on longline fishing within the GMR. CDF helps the Galapagos National Park Service (GNPS) by providing taxonomic advice to identify sharks from impounded fins.

Researchers and park marine staff from the Charles Darwin Research Station (CDRS) and the GNPS are working with visiting scientists to track and study the distribution and migration of sharks in Galapagos. This is part of a larger study of the region between the Galapagos, Cocos and Malpelo Islands. The study will include Galapagos and hammerhead sharks in the first instance, and be extended to include whale sharks in the future.

The results from these studies will enable the CDF to give the best possible technical advice to the GNPS, and help them to protect the sharks of Galapagos.