

SHARKS





species of sharks



**whale shark - китовая
акула**

[weɪl ʃɑ:k]



**basking shark -
гигантская акула**

['ba:skɪŋ ʃɑ:k]



white shark - белая акула

[waɪt ʃɑ:k]



**tiger shark - тигровая
акула**

['taɪgə ʃɑ:k]



**blunt-nosed shark -
тупорылая акула**

[blʌnt-nəʊzd ʃɑ:k]



**hammerhead shark -
акула-молот**

['hæməhed ʃɑ:k]



**largemouth shark -
большеротая акула**

['la:dʒməθ ʃɑ:k]



katran - катран

['kɑ:trən]



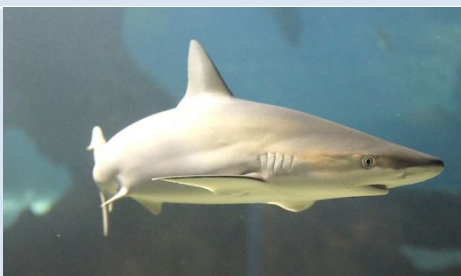
**the dwarf shark -
карликовая акула**

[ði: dwɔ:f ʃɑ:k]



**freshwater shark -
пресноводная акула**

['freʃwɔ:tə ʃɑ:k]



**blacknose shark -
черноносая акула**

[blacknose ʃɑ:k]



narrow-toothed shark -
узкозубая акула

['nærəʊ-tu:θt ʃɑ:k]



reef shark - рифовая акула

[ri:f ʃɑ:k]



yellow-banded shark -
желтополосная акула

['jeləʊ- 'bændɪd ʃɑ:k]



baleen dog shark - усатая
собачья акула

[bə 'li:n dɒg ʃɑ:k]



foxshark – лисья акула

[fɒks ʃɑ:k]



catshark – кошачья акула

[kæt ʃɑ:k]



lemon shark – лимонная акула

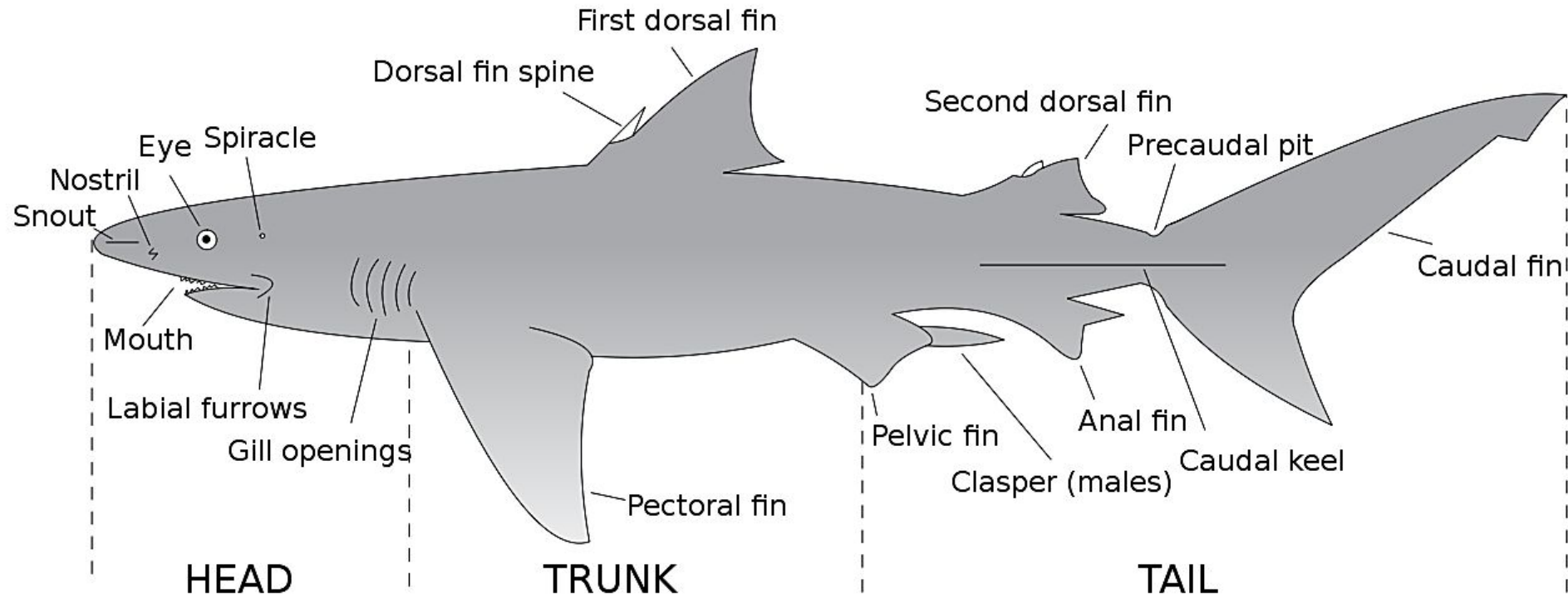
['lemən ʃɑ:k]

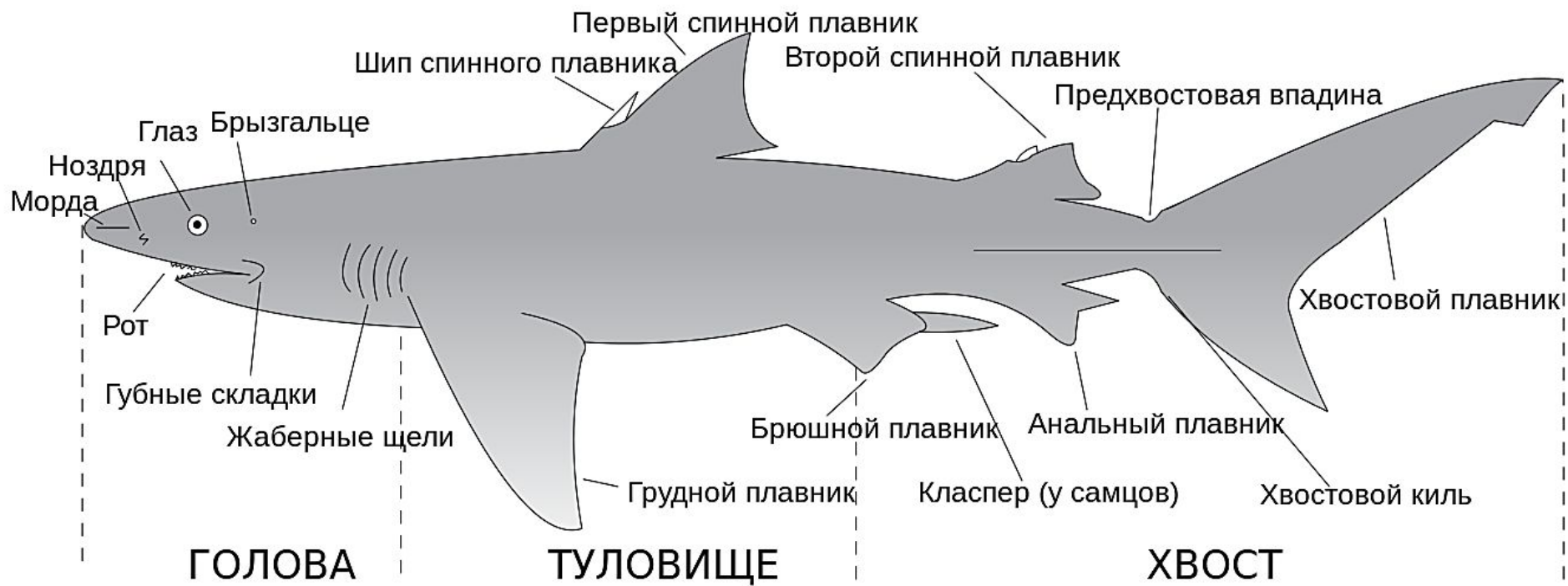


bull shark – акула-бык

[bʊl ʃɑ:k]

Parts of a shark





Sharks are a group of elasmobranch fish characterized by a cartilaginous skeleton, five to seven gill slits on the sides of the head, and pectoral fins that are not fused to the head. Modern sharks are classified within the clade Selachimorpha and are the sister group to the rays. However, the term "shark" has also been used for extinct members of the subclass Elasmobranchii outside the Selachimorpha, such as Cladoseleache and Xenacanthus, as well as other Chondrichthyes such as the holocephalid eugenedontidans.

Under this broader definition, the earliest known sharks date back to more than 420 million years ago. Acanthodians are often referred to as "spiny sharks"; though they are not part of Chondrichthyes proper, they are a paraphyletic assemblage leading to cartilaginous fish as a whole.

Since then, sharks have diversified into over 500 species. They range in size from the small dwarf lanternshark, a deep sea species of only 17 centimetres in length, to the whale shark, the largest fish in the world, which reaches approximately 12 metres in length.

Sharks are found in all seas and are common to depths of 2,000 metres. They generally do not live in freshwater although there are a few known exceptions, such as the bull shark and the river shark, which can be found in both seawater and freshwater.[4] Sharks have a covering of dermal denticles that protects their skin from damage and parasites in addition to improving their fluid dynamics. They have numerous sets of replaceable teeth.

Well-known species such as the tiger shark, blue shark, great white shark, mako shark, thresher shark, and hammerhead shark are apex predators—organisms at the top of their underwater food chain. Many shark populations are threatened by human activities.

Teeth

Shark teeth are embedded in the gums rather than directly affixed to the jaw, and are constantly replaced throughout life. Multiple rows of replacement teeth grow in a groove on the inside of the jaw and steadily move forward in comparison to a conveyor belt; some sharks lose 30,000 or more teeth in their lifetime. The rate of tooth replacement varies from once every 8 to 10 days to several months. In most species, teeth are replaced one at a time as opposed to the simultaneous replacement of an entire row, which is observed in the cookiecutter shark.

Tooth shape depends on the shark's diet: those that feed on mollusks and crustaceans have dense and flattened teeth used for crushing, those that feed on fish have needle-like teeth for gripping, and those that feed on larger prey such as mammals have pointed lower teeth for gripping and triangular upper teeth with serrated edges for cutting. The teeth of plankton-feeders such as the basking shark are small and non-functional.

Skeleton

Shark skeletons are very different from those of bony fish and terrestrial vertebrates. Sharks and other cartilaginous fish (skates and rays) have skeletons made of cartilage and connective tissue. Cartilage is flexible and durable, yet is about half the normal density of bone. This reduces the skeleton's weight, saving energy. Because sharks do not have rib cages, they can easily be crushed under their own weight on land.

Jaw

The jaws of sharks, like those of rays and skates, are not attached to the cranium. The jaw's surface (in comparison to the shark's vertebrae and gill arches) needs extra support due to its heavy exposure to physical stress and its need for strength. It has a layer of tiny hexagonal plates called "tesserae", which are crystal blocks of calcium salts arranged as a mosaic. This gives these areas much of the same strength found in the bony tissue found in other animals.

Generally sharks have only one layer of tesserae, but the jaws of large specimens, such as the bull shark, tiger shark, and the great white shark, have two to three layers or more, depending on body size. The jaws of a large great white shark may have up to five layers. In the rostrum (snout), the cartilage can be spongy and flexible to absorb the power of impacts.

Fins

Fin skeletons are elongated and supported with soft and unsegmented rays named ceratotrichia, filaments of elastic protein resembling the horny keratin in hair and feathers. Most sharks have eight fins. Sharks can only drift away from objects directly in front of them because their fins do not allow them to move in the tail-first direction.

Dermal denticles

Unlike bony fish, sharks have a complex dermal corset made of flexible collagenous fibers and arranged as a helical network surrounding their body. This works as an outer skeleton, providing attachment for their swimming muscles and thus saving energy. Their dermal teeth give them hydrodynamic advantages as they reduce turbulence when swimming.

Tails

Tails provide thrust, making speed and acceleration dependent on tail shape. Caudal fin shapes vary considerably between shark species, due to their evolution in separate environments. Sharks possess a heterocercal caudal fin in which the dorsal portion is usually noticeably larger than the ventral portion. This is because the shark's vertebral column extends into that dorsal portion, providing a greater surface area for muscle attachment. This allows more efficient locomotion among these negatively buoyant cartilaginous fish. By contrast, most bony fish possess a homocercal caudal fin.

Tiger sharks have a large upper lobe, which allows for slow cruising and sudden bursts of speed. The tiger shark must be able to twist and turn in the water easily when hunting to support its varied diet, whereas the porbeagle shark, which hunts schooling fish such as mackerel and herring, has a large lower lobe to help it keep pace with its fast-swimming prey. Other tail adaptations help sharks catch prey more directly, such as the thresher shark's usage of its powerful, elongated upper lobe to stun fish and squid.

teeth – зубы

[ti:θ]

fin – плавник

[fin]

**first dorsal fin – первый
спинной плавник**

['dɔ:səl]

**second dorsal fin – второй
спинной плавник**



**pectoral fin – грудной
плавник**

['pektərəl]

**pelvic fin – тазовый
плавник**

['pelvɪk]

**anal fin – анальный
плавник**

['eɪnəl]

**caudal fin – хвостовой
плавник**

[kəːdl]



jaw – челюсть	[ɔʃə:]
dermal denticles – кожные зубчики	['dʒ:məl denticles]
tail – хвост	[teɪl]
head – голова	[hed]



trunk – туловище

[trʌŋk]

eye – глаз

tail – хвост

[teɪl]

head – голова

[hed]



dorsal fin spine – шип спинного плавника	['dɔːsəl fɪn spaɪn]
mouth – рот	
spiracle – брызгальце	['sp(a)ɪrək(ə)l]
snout – морда	[snaʊt]



nostril – ноздря	['nɒstrɪl]
labial furrows – губные борозды	['leɪbiəl 'fʌrəʊz]
gill openings – жаберные щели	[gɪl ˈoʊnɪŋz]
clasper(males) – класпер (у самцов)	[ˈklɑːspər]/[ˈmeɪls]

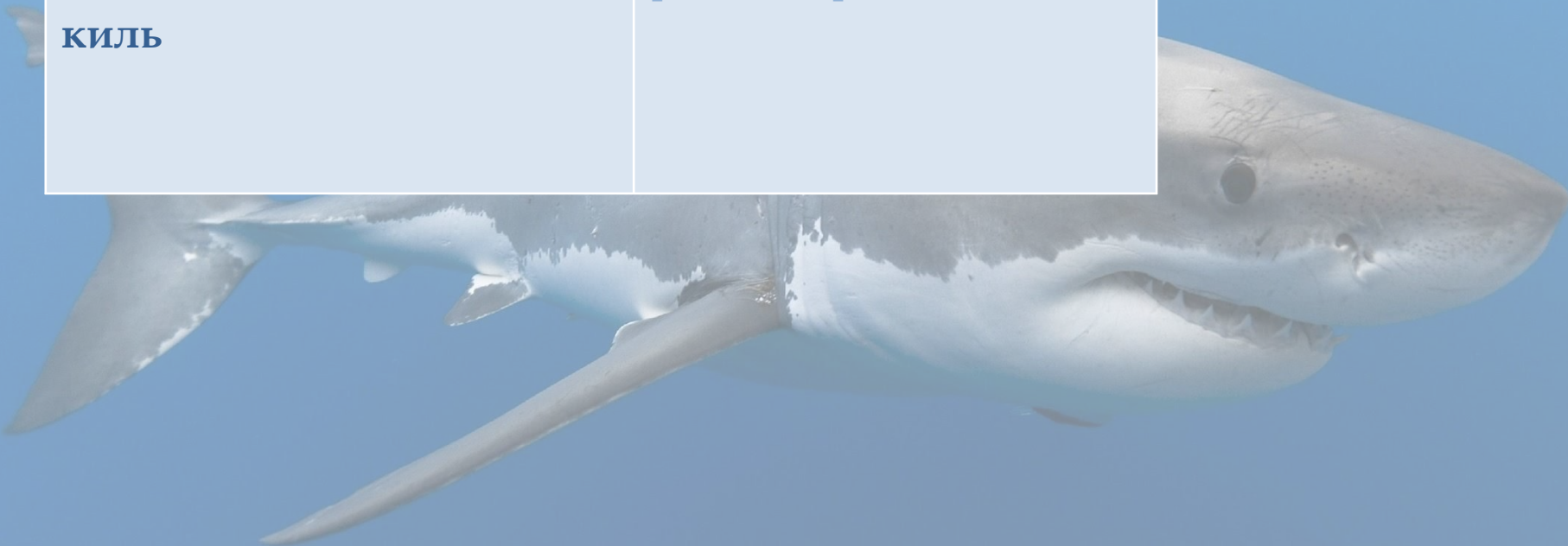


precaudal pit –
предхвостовая впадина

[precaudal pɪt]

caudal keel – хвостовой
киль

[kəːdl kiːl]



Whale shark

The whale shark is a slow-moving, filter-feeding carpet shark and the largest known extant fish species. The largest confirmed individual had a length of 18.8 m. The whale shark holds many records for size in the animal kingdom, most notably being by far the largest living nonmammalian vertebrate.

The whale shark is found in open waters of the tropical oceans and is rarely found in water below 21 °C (70 °F). Studies looking at vertebral growth bands and the growth rates of free-swimming sharks have estimated whale shark lifespans at 80–130 years. Whale sharks have very large mouths and are filter feeders, which is a feeding mode that occurs in only two other sharks, the megamouth shark and the basking shark.

Basking shark

The basking shark is the second-largest living shark, after the whale shark, and one of three plankton-eating shark species, along with the whale shark and megamouth shark. Adults typically reach 7.9 m in length. It is usually greyish-brown, with mottled skin. The caudal fin has a strong lateral keel and a crescent shape.

The basking shark is a cosmopolitan migratory species, found in all the world's temperate oceans. A slow-moving filter feeder, its common name derives from its habit of feeding at the surface, appearing to be basking in the warmer water there. It has anatomical adaptations for filter-feeding, such as a greatly enlarged mouth and highly developed gill rakers. Its snout is conical and the gill slits extend around the top and bottom of its head. The gill rakers, dark and bristle-like, are used to catch plankton as water filters through the mouth and over the gills. The teeth are numerous and very small, and often number 100 per row. The teeth have a single conical cusp, are curved backwards, and are the same on both the upper and lower jaws. This species has the smallest weight-for-weight brain size of any shark, reflecting its relatively passive lifestyle.

White shark

The great white shark, also known as the great white, white shark or "white pointer", is a species of large mackerel shark which can be found in the coastal surface waters of all the major oceans. It is notable for its size, with larger female individuals growing to 6.1 m in length and 1,905–2,268 kg in weight at maturity. However, most are smaller; males measure 3.4 to 4.0 m and females measure 4.6 to 4.9 m on average. According to a 2014 study, the lifespan of great white sharks is estimated to be as long as 70 years or more, well above previous estimates, making it one of the longest lived cartilaginous fishes currently known. According to the same study, male great white sharks take 26 years to reach sexual maturity, while the females take 33 years to be ready to produce offspring. Great white sharks can swim at speeds of 25 km/hr for short bursts and to depths of 1,200 m.

The great white shark has no known natural predators other than, on very rare occasions, the killer whale. It is arguably the world's largest-known extant macropredatory fish, and is one of the primary predators of marine mammals, up to the size of large baleen whales. This shark is also known to prey upon a variety of other marine animals, including fish, and seabirds.

Tiger shark

The tiger shark is a species of requiem shark and the only extant member of the genus *Galeocerdo*. It is a large macropredator, capable of attaining a length over 5 m. Populations are found in many tropical and temperate waters, especially around central Pacific islands. Its name derives from the dark stripes down its body, which resemble a tiger's pattern, but fade as the shark matures.

The tiger shark is a solitary, mostly nocturnal hunter. It is notable for having the widest food spectrum of all sharks, with a range of prey that includes crustaceans, fish, seals, birds, squid, turtles, sea snakes, dolphins, and even other smaller sharks. It also has a reputation as a "garbage eater", consuming a variety of inedible, man-made objects that linger in its stomach. Though apex predators, tiger sharks are sometimes taken as prey by groups of killer whales. It is considered a near threatened species due to finning and fishing by humans.

The tiger shark is second only to the great white in recorded fatal attacks on humans.

Hammerhead shark

The hammerhead sharks are a group of sharks that form the family Sphyrnidae, so named for the unusual and distinctive structure of their heads, which are flattened and laterally extended into a "hammer" shape called a cephalofoil. Most hammerhead species are placed in the genus *Sphyrna*, while the winghead shark is placed in its own genus, *Eusphyra*. Many, but not necessarily mutually exclusive, functions have been postulated for the cephalofoil, including sensory reception, manoeuvring, and prey manipulation. Hammerheads are found worldwide in warmer waters along coastlines and continental shelves. Unlike most sharks, some hammerhead species usually swim in schools during the day, becoming solitary hunters at night. Some of these schools can be found near Malpelo Island in Colombia, the Galápagos Islands in Ecuador, Cocos Island off Costa Rica, near Molokai in Hawaii, and off southern and eastern Africa.

Reef shark

The reef shark is a species of requiem shark, which can be easily identified by the prominent black tips on its fins (especially on the first dorsal fin and its caudal fin). Among the most abundant sharks inhabiting the tropical coral reefs of the Indian and Pacific Oceans, this species prefers shallow, inshore waters. Its exposed first dorsal fin is a common sight in the region. The reef shark is usually found over reef ledges and sandy flats, though it has also been known to enter brackish and freshwater environments. It typically attains a length of 1.6 m.

The reef shark has extremely small home ranges and exhibits strong site fidelity, remaining within the same local area for up to several years at a time. It is an active predator of small bony fishes, cephalopods, and crustaceans, and has also been known to feed on sea snakes and seabirds. Accounts of the reef shark's life history have been variable and sometimes contradictory, in part reflecting geographical differences within the species. Like other members of its family, this shark is viviparous, with females giving birth to two to five young on a biennial, annual, or possibly biannual cycle. Reports of the gestation period range from 7–9, through 10–11, to possibly 16 months. Mating is preceded by the male following closely behind the female, likely attracted by her chemical signals.

Foxshark

Thresher sharks are large lamniform sharks of the family Alopiidae found in all temperate and tropical oceans of the world; the family contains three extant species, all within the genus *Alopias*.

Although occasionally sighted in shallow, inshore waters, thresher sharks are primarily pelagic; they prefer the open ocean, characteristically preferring water 500 metres and less. Common threshers tend to be more prevalent in coastal waters over continental shelves. Common thresher sharks are found along the continental shelves of North America and Asia of the North Pacific, but are rare in the Central and Western Pacific. In the warmer waters of the Central and Western Pacific, bigeye and pelagic thresher sharks are more common. A thresher shark was seen on the live video feed from one of the ROVs monitoring BP's Macondo oil well blowout in the Gulf of Mexico. This is significantly deeper than the 500m previously thought to be their limit. A bigeye has also been found in the western Mediterranean, and so distribution may be wider than previously believed, or environmental factors may be forcing sharks to search for new territories.

Catshark

They are one of the largest families of sharks with around 160 species placed in 17 genera. Although they are generally known as catsharks, many species are commonly called dogfish or gato. Like most bottom feeders, they feed on benthic invertebrates and smaller fish. Catsharks are not harmful to humans.

Catsharks are found around seabeds in temperate and tropical seas worldwide, ranging from very shallow intertidal waters to depths of 2,000 m. The Red spotted catshark lives in the shallower rocky waters ranging from Peru to Chile and migrate to deeper waters during the winter months. They are usually restricted to small ranges. Juvenile and adult chain dogfish live on the soft or rocky bottom of the Atlantic from Massachusetts to Nicaragua. Adults tend to live on the soft sandy bottoms possibly due to their need of egg deposition sites.

Some catsharks do not undergo long distance migrations because they are poor swimmers. Due to being nocturnal, some species sleep close together in crevices throughout the day and then go hunting at night. Some species such as the small spotted catshark, *Scyliorhinus canicula*, are sexually monomorphic and exhibit habitat segregation, where males and females live in separate areas; males tend to live in open seabeds, while females tend to live in caves. Some species of catsharks may deposit egg cases in structured habitats, which may also act as nurseries for the newly hatched sharks.

Lemon shark

The lemon shark is a species of shark from the family Carcharhinidae and is classified as a near-threatened species by the International Union for the Conservation of Nature. Lemon sharks can grow to 3.4 metres in length. They are often found in shallow subtropical waters and are known to inhabit and return to specific nursery sites for breeding. Often feeding at night, these sharks use electroreceptors to find their main source of prey: fish. Lemon sharks enjoy the many benefits of group living such as enhanced communication, courtship, predatory behavior, and protection. This species of shark gives birth to live young, and the females are polyandrous and have a biennial reproductive cycle. Lemon sharks are not thought to be a large threat to humans. The lemon shark's life span is unknown, but the average shark is 25 to 30 years old.

The shark's yellow colouring serves as an excellent camouflage when swimming over the sandy seafloor in its coastal habitat. The lemon shark commonly attains a length of 2.4 to 3.1 m and a weight up to 90 kg by adulthood, although sexual maturity is attained at 2.24 m in males and 2.4 m in females. The maximum recorded length and weight is 3.43 m and 183.7 kg, respectively. It has a flattened head with a short, broad snout, and the second dorsal fin is almost as large as the first. Lemon sharks, as any other species of shark, have electroreceptors concentrated in their heads, called the ampullae of Lorenzini. These receptors detect electrical pulses emitted by potential prey and allow these nocturnal feeders to sense their prey in the dark.

Bull shark

The bull shark, also known as the "Zambezi shark" (informally "zambi") in Africa, and "Lake Nicaragua shark" in Nicaragua, is a requiem shark commonly found worldwide in warm, shallow waters along coasts and in rivers. It is known for its aggressive nature, and presence in warm, shallow brackish and freshwater systems including estuaries and rivers.

Bull sharks can thrive in both salt and fresh water and can travel far up rivers. They have been known to travel up the Mississippi River as far as Alton, Illinois, about 700 miles (1100 km) from the ocean. However, few freshwater human-shark interactions have been recorded. Larger-sized bull sharks are probably responsible for the majority of near-shore shark attacks, including many bites attributed to other species.

Unlike the river sharks of the genus *Glyphis*, bull sharks are not true freshwater sharks, despite their ability to survive in freshwater habitats.