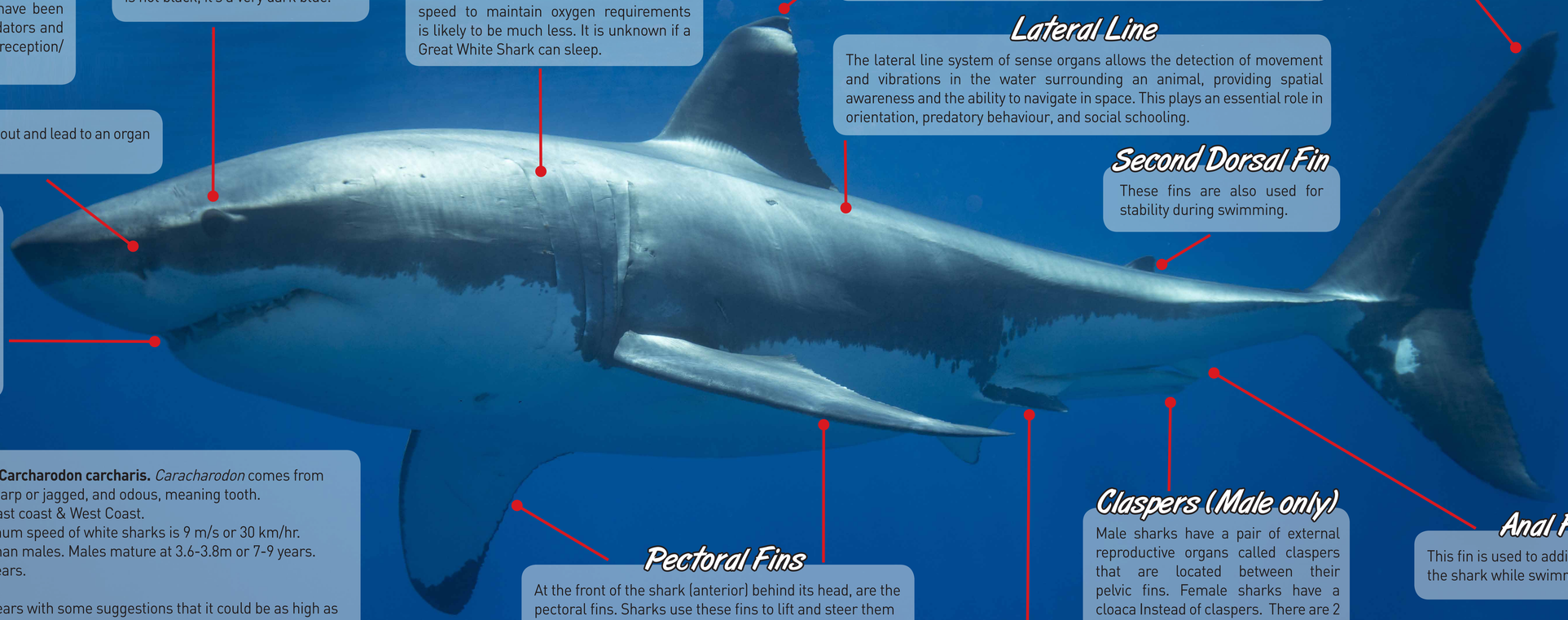
Anatomy of a Great White Shark



Ampullae of Lorenzini

The Ampullae of Lorenzini are special sensing organs that sharks use to detect electric and magnetic fields. Each ampulla consists of a jelly-filled canal opening to the surface by a pore in the skin. Each ampulla functions as an independent receptor that measures the electric potential difference between the ampullary pore opening and the body interior. Although the role of these gel-filled pores is not completely clear, several functions of the ampullary electrosense have been proposed, including detection of prey, predators and mates, social communication, and magnetoreception/ geonavigation.

Eye

White sharks do not have eyelids, instead they roll their eyes back for protection. The iris of a white shark is not black, it's a very dark blue.

5 Gill Slits

Sharks breathe by extracting oxygen from the water as it moves over and past their gills. The normal cruising speed is believed to be 3.5 km/hr. However, the minimum speed to maintain oxygen requirements is likely to be much less. It is unknown if a Great White Shark can sleep.

First Dorsal Fin

The main purpose of the dorsal fin is to stabilize the animal against rolling and to assist in sudden turns. They are like a human finger print, no two are the same and dorsal fins are use in the identifications of individual sharks.

Caudal fin

Otherwise know as the tail fin, sharks use this to propel itself through the water. The tail fin is one of the most important parts of the entire shark anatomy. The nature of this fin does not allow for backwards movement. Therefore, if a shark needs to move away from an object, it is forced to either drift backwards or to turn away from it and continue in a forwards direction.

Lateral Line

The lateral line system of sense organs allows the detection of movement and vibrations in the water surrounding an animal, providing spatial awareness and the ability to navigate in space. This plays an essential role in orientation, predatory behaviour, and social schooling.

Nostrils

Their nostrils are on the underside of the snout and lead to an organ called the olfactory bulb.

Second Dorsal Fin

These fins are also used for stability during swimming.

Teeth

Great white sharks have about 300 teeth arranged in many rows. First two rows of the teeth are used for grabbing and cutting the animals they eat, while the other teeth in the last rows replace the front teeth when they are broken, worn down, or when they fall out. The top row of teeth do not roll forward until it's jaw is extended to bite.

Basic Facts

- The scientific name for White Sharks is **Carcharodon carcharis.** *Caracharodon* comes from the Greek words *karcharos*, meaning sharp or jagged, and odous, meaning tooth.
- Two distinct populations in Australia. East coast & West Coast.
- It is suggested that the predicted maximum speed of white sharks is 9 m/s or 30 km/hr.
- Great White females are larger in size than males. Males mature at 3.6-3.8m or 7-9 years. Females mature at 4.5-5.0m or 12-17 years.
- Pups are born around 1.5m.
- Great Whites can live to be over 30-40 years with some suggestions that it could be as high as 70 or longer.
- What do they eat? Juveniles (less than 2.7m) feed mainly on fish, other sharks and rays. Larger sharks (3.4m+) feed on marine mammals such as seals and whales. These large sharks can also feed on fish and pinnipeds are likely to only form part of their diet.
- Most fish are cold-blooded, but Great Whites can hold some body parts at temperatures greater than the water around them.
- The colouration of the Great White is a form of countershading, disguising the shark from prey from below and above.
- No Great White Sharks live at Neptune Islands, however they can be observed all year round. Studies suggest the average length of visit is 14 days.

Pectoral Fins

At the front of the shark (anterior) behind its head, are the pectoral fins. Sharks use these fins to lift and steer them while they swim.

Claspers (Male only)

Male sharks have a pair of external reproductive organs called claspers that are located between their pelvic fins. Female sharks have a cloaca Instead of claspers. There are 2 claspers as are there are 2 Pelvic Fins.

Anal Fin

This fin is used to additionally stabilize the shark while swimming.

Pelvic Fin

They are on the ventral side (or underneath) of the shark and act as stabilisers to prevent the shark from rolling to the left or right.

Photo by Matt Draper @mattdraperphotography IG