

## Jawless Fish and Cartilaginous Fish

### Jawless Fish:

- Cyclostomes: Hagfish (slime eels)  
Lampreys
- Ostracoderms: Ostracoderms † (extinct “shell-skinned”)
- Class Chondrichthyes: Sharks, Skates, and Rays  
Chimaeras (rat fish), rabbit & elephant fish



### Fish – Jawless (Superclass Agnatha)

The simplest, earliest fish had no jaw. Living jawless fish are known as round-mouths. These include the hagfish and lampreys. Hagfish produce large amounts of slime, and will scavenge food. They eat dead carcasses from the inside out. Lampreys (literally “rock lickers”) are sometimes parasites, attaching themselves to fish or other animals in the water.

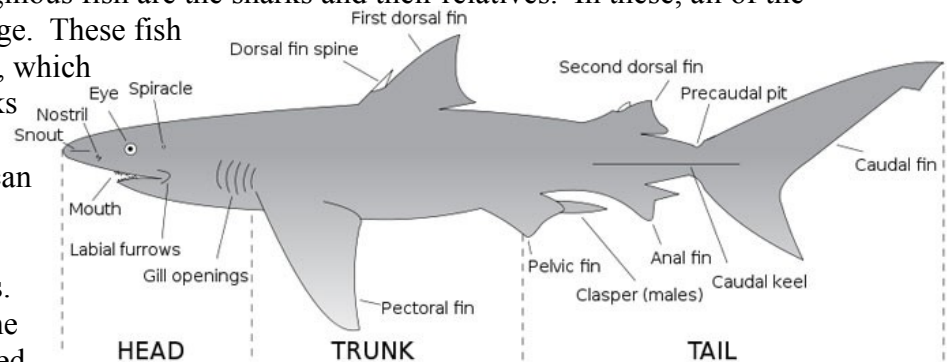


Extinct jawless fish include the *ostracoderms* or shell-skinned fish. These had bony plates that covered their bodies, offering them protection from predators.

### Chondrichthyes: The Cartilage Fish

The most common cartilaginous fish are the sharks and their relatives. In these, all of the skeleton, except the jaw, is cartilage. These fish are covered with dermal denticles, which gives them a rough texture. Sharks have been in the fossil record for about 400 million years. Sharks can be in many forms, including the hammer-head, whale shark, great white, sevengill, and many others.

Similar to the sharks are the skates and rays. These are flattened, kite-shaped fish. Skates lay eggs, while rays have live young, and skates have dorsal (back) fins while it may be absent in the rays. Other cartilage fish include the sawfish and electric rays.



### Holocephali

This strange group includes the chimaeras (rat fish or ghost sharks), elephant fish, and rabbit fish. Be sure to look at these.

### Sharks, Skates and Rays of Tasmania

