



Domain	Eukaryota
Kingdom	Animalia
Phylum	Chordata
Subphylum	Vertebrata

VERTEBRATES

Fish

518 MYA – PRESENT

Fish are marine and freshwater vertebrates that breathe through gills. Fish are extraordinarily diverse, and can be divided into jawless and jawed fish, cartilaginous and bony fish, and ray finned and lobe finned fish. Cartilaginous chondrichthyes include

sharks and stingrays, bony osteichthyes include most other fish like tuna, mullet, seahorses, salmon, trout, lungfish, and coelacanths. They vary enormously in size, from the 8 mm long *Paedocypris progenetica*, to the 16 m long whale shark.

Fossils Record

Jawless fish first appear in the fossil record in rocks from the early Cambrian, but it was not until the late Ordovician that the first jawed fish evolved. The clade of fish, lobe-finned sarcopterygii, from which all land vertebrates evolved first appeared in the late Silurian.

Habitat and Lifestyle

Fish live in marine and freshwater environments, some spending time in both environments. Some fish spend parts of their lives on land or in burrows. Their habitats extend from the tropics to the poles and from the surface down to the bottom of the deep ocean trenches at over 10 km.

Many fish are predators, some are herbivores that eat algae, while others are omnivores, and will eat both plants and animals. Some are scavengers, and others filter plankton from seawater.



The striped mandarinfish, *Synchiropus splendidus* has beautiful and vivid colouration. Image from fenkieandreas, iStock.



A small fish, *Cavenderichthys talbragarensis*, Jurassic (about 151 million years old). New South Wales. Image from Jim Frazier.

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DID YOU KNOW

Coelacanths were thought to have become extinct at the end of the Cretaceous (66 million years ago), until one was caught in a fishing net off the east coast of South Africa in 1938. A second living species was discovered in deep water off Sulawesi Indonesia, in 1998.

