

Modular Design in a Fish

Bony fish are well-designed for life in the water, with a combination of shared and unique features.

A few bony fish—coelacanth and lungfish—have fins with a pattern of bones similar to the limbs of other vertebrates, except they lack digits. Neither type of fish uses their limbs for walking on the bottom.

Coelacanth (preserved), *Latimeria*

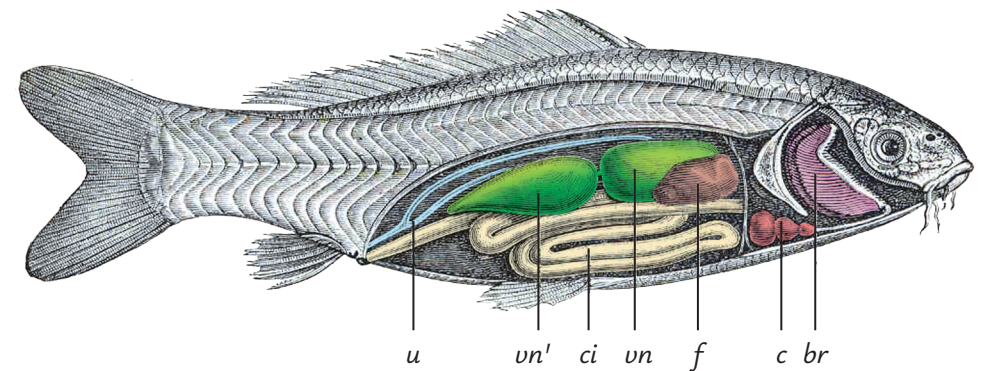
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Most bony fish have fins with a bony structure different from the limbs of other vertebrates, although they share many features with other vertebrates. The swim bladder is a unique feature, usually present in bony fish of both groups. It is usually filled with gas, and controls the buoyancy of the fish. In deep-sea fish it may be filled with oil.

Location of swim bladder (colored green on the figure)

Image: Harry Govier Seeley, Public Domain, via Wikimedia Commons; Color added



Internal anatomy of carp

br: branchiae or gills | c: heart | f: liver | vn, vn': air-bladder | ci: intestinal canal | u: urethra