Hagfish

Hagfish, the class [Myxini](https://en.wikipedia.org/wiki/Cyclostomata" \o "Cyclostomata) (also known as Hyperotreti), are [eel](https://en.wikipedia.org/wiki/Eel)-shaped, slime-producing marine [fish](https://en.wikipedia.org/wiki/Fish) (occasionally called slime eels). They are the only known living animals that have a [skull](https://en.wikipedia.org/wiki/Skull) but no [vertebral column](https://en.wikipedia.org/wiki/Vertebral_column), although hagfish do have rudimentary vertebrae.[[3]](https://en.wikipedia.org/wiki/Hagfish#cite_note-:0-3) Along with [lampreys](https://en.wikipedia.org/wiki/Lampreys), hagfish are jawless; they are the sister group to jawed vertebrates, and living hagfish remain similar to hagfish from around 300 million years ago.[[4]](https://en.wikipedia.org/wiki/Hagfish#cite_note-4)

The classification of hagfish had been controversial. The issue was whether the hagfish was a degenerate type of vertebrate-fish that through evolution had lost its vertebrae (the original scheme) and was most closely related to lampreys, or whether hagfish represent a stage that precedes the evolution of the vertebral column (the alternative scheme) as is the case with [lancelets](https://en.wikipedia.org/wiki/Lancelets). Recent DNA evidence has supported the original scheme.[[5]](https://en.wikipedia.org/wiki/Hagfish#cite_note-r3-5)

The original scheme groups hagfish and lampreys together as [cyclostomes](https://en.wikipedia.org/wiki/Cyclostomata) (or historically, [Agnatha](https://en.wikipedia.org/wiki/Agnatha" \o "Agnatha)), as the oldest surviving class of [vertebrates](https://en.wikipedia.org/wiki/Vertebrates) alongside [gnathostomes](https://en.wikipedia.org/wiki/Gnathostomes) (the now-ubiquitous jawed vertebrates). The alternative scheme proposed that jawed vertebrates are more closely related to lampreys than to hagfish (i.e., that vertebrates include lampreys but exclude hagfish), and introduces the category [craniata](https://en.wikipedia.org/wiki/Craniata" \o "Craniata) to group vertebrates near hagfish.