Agnatha - Lamprey, Hagfish

Agnatha are jawless fish. Lampreys and hagfish are in this class. Members of the agnatha class are probably the earliest vertebrates. Scientists have found fossils of agnathan species from the late Cambrian Period that occurred 500 million years ago.

Members of this class of fish don't have paired fins or a stomach. Adults and larvae have a notochord. A notochord is a flexible rod-like cord of cells that provides the main support for the body of an organism during its embryonic stage. A notochord is found in all chordates.

Most agnathans have a skeleton made of cartilage and seven or more paired gill pockets. They have a light sensitive pineal eye. A pineal eye is a third eye in front of the pineal gland. Fertilization of eggs takes place outside the body.

The lamprey looks like an eel, but it has a jawless sucking mouth that it attaches to a fish. It is a parasite and sucks tissue and fluids out of the fish it is attached to. The lamprey's mouth has a ring of cartilage that supports it and rows of horny teeth that it uses to latch on to a fish.

Lampreys are found in temperate rivers and coastal seas and can range in size from 5 to 40 inches. Lampreys begin their lives as freshwater larvae. In the larval stage, lamprey usually are found on muddy river and lake bottoms where they filter feed on microorganisms.

The larval stage can last as long as seven years! At the end of the larval state, the lamprey changes into an eel-like creature that swims and usually attaches itself to a fish. There are around 50 living species of lampreys.

The hagfish is also known as the slime fish. It is eel-like and pinkish in color. It has glands along its sides that produce a thick, sticky slime that it uses as a defense mechanism. The hagfish can also twist its body into knots! It may do this to clean off slime or escape predators. The hagfish may also sneeze to clear its nostrils of slime.

The hagfish is almost completely blind, but it has a good sense of touch and smell. It has a ring of tentacles around its mouth that it uses to feel for food. It has a tongue-like projection that comes out of its jawless mouth. At the end of the projection are tooth-like rasps that close when the "tongue" is pulled back into the hagfish's mouth.
The hagfish eats marine worms and other invertebrates. It has a very low metabolism and can go for as long as seven months without eating. Newly hatched hagfish are miniature copies of the adult hagfish. The hagfish is found in cold ocean waters in the Northern and Southern Hemispheres. It is found on muddy sea floors and may live in very large groups of up to 15,000 individuals. There are about 60 species of hagfish.

Agnatha Photo Gallery

World Status Key

- Least Concern
- Near Threatened
- Vulnerable
- Endangered
- Critically Endangered
- Extinct in Wild
- Extinct
- Not Enough Data

Status and range is taken from IUCN Redlist. You can click on the IUCN status icon to go to the IUCN page about a species.

U.S. Status Key

- Threatened in US
- Endangered in US
- Introduced

Status taken from US Fish and Wildlife. Click on U.S. status icon to go to the U.S. Fish and Wildlife species profile.

New Hampshire Status Key

- Threatened in NH
- Endangered in NH
- Breeds in NH

Status taken from NH Fish and Game. Click on NH status icon to go to the NH Fish and Game species profile.

Location Key

- Africa
- Asia
- Australia/Oceania
- Europe
- North America
- South America
- NH
- Image
- Atlantic Ocean
- Indian Ocean
- Mediterranean/Black Sea
- Pacific Ocean

New Hampshire Species

- American Brook Lamprey - Lampetra appendix
- Sea Lamprey-Petromyzon marinus

North/Central American Species

- Alaskan Brook Lamprey - Lampetra alaskensis
- Arctic Lamprey - Lethenteron japonicum
- Atlantic Hagfish - Myxine glutinosa
- Black Hagfish - Eptatretus deanii
- Caribbean Hagfish - Myxine mcmillanae
- Chesnut Lamprey - Ichthyomyzon castaneus
- Chilean Hagfish - Eptatretus polystrema
- Cortez Hagfish - Eptatretus sinus
- Guadalupe Hagfish - Eptatretus

- Kern Brook Lamprey - Lampetra hubbsi
- Klamath Lamprey - Lampetra similis
- Lake Lamprey - Lampetra macrostoma
- Least Brook Lamprey - Lampetra aepyptera
- Mexican Lamprey - Lampetra spadicea
- Miller Lake Lamprey - Entosphenus minimus
- Mountain Brook Lamprey - Ichthyomyzon greeleyi
- Northern Brook Lamprey - Ichthyomyzon fossor
- Ohio Lamprey - Ichthyomyzon bdellium
- Pacific Hagfish - Eptatretus stoutii
- Pacific Lamprey - Entosphenus tridentatus
- Patagonian Hagfish - Myxine affinis
- Pit-Klamath Brook Lamprey - Lampetra lethophaga
- Shorthead Hagfish - Eptatretus mconnaugheyi
- Silver Lamprey - Ichthyomyzon unicuspis
- Southern Brook Lamprey - Ichthyomyzon gagei
- Western Brook Lamprey - Lampetra richardsoni
<table>
<thead>
<tr>
<th>Species Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Goose Lake Lamprey</td>
<td>Lampetra tridentata</td>
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<tr>
<td>Gulf Hagfish</td>
<td>Paramyxine springeri</td>
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<tr>
<td>Inshore Hagfish</td>
<td>Eptatretus burgeri</td>
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<tr>
<td>Broadgilled Hagfish</td>
<td>Eptatretus cirrhatus</td>
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<tr>
<td>Brook Lamprey</td>
<td>Lampetra planeri</td>
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<tr>
<td>Brown Hagfish</td>
<td>Paramyxine atami</td>
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<tr>
<td>Cape Hagfish</td>
<td>Myxine capensis</td>
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<td>Carpathian Lamprey</td>
<td>Eudontomyzon danfordi</td>
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<tr>
<td>Dwarf Hagfish</td>
<td>Myxine pequenoi</td>
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<td>Eightgilled Hagfish</td>
<td>Eptatretus octatrema</td>
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<td>Fivegill Hagfish</td>
<td>Eptatretus profundus</td>
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<tr>
<td>Goliath Hagfish</td>
<td>Eptatretus goliath</td>
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<tr>
<td>Greek Brook Lamprey</td>
<td>Eudontomyzon hellenicus</td>
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<tr>
<td>Lombardy Brook Lamprey</td>
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<td>Longfin Hagfish</td>
<td>Eptatretus longipinnis</td>
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<td>Lulua River Lamprey</td>
<td>Aplocheilichthys katanga</td>
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<td>Non-parasitic Lamprey</td>
<td>Mordacia praecox</td>
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<td>River Lamprey</td>
<td>Lampetra fluviatilis</td>
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<tr>
<td>Sixgill Hagfish</td>
<td>Eptatretus hexatrema</td>
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<tr>
<td>Southern Hagfish</td>
<td>Myxine australis</td>
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<td>Strickrott's Hagfish</td>
<td>Eptatretus strickrotti</td>
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<td>Ukranian Brook Lamprey</td>
<td>Eudontomyzon mariae</td>
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<td>Vladykov's Lamprey</td>
<td>Eudontomyzon vladykovi</td>
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<tr>
<td>White-headed Hagfish</td>
<td>Myxine ios</td>
</tr>
</tbody>
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American Brook Lamprey - *Lampetra appendix*  
The American brook lamprey is found in the eastern U.S. and southeastern Canada.  
**Source:** US Geological Survey  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** No

Atlantic Hagfish - *Myxine glutinosa*  
The Atlantic hagfish is found on both sides of the north Atlantic Ocean.  
**Source:** Sea and Sky  
**Intended Audience:** Student  
**Reading Level:** Middle School  
**Teacher Section:** No

Atlantic Hagfish - *Myxine glutinosa*  
The Atlantic hagfish preys on shrimp, worms, and small crabs  
**Source:** NOAA  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** No

Brook Lamprey - *Lampetra planeri*  
The brook lamprey is found in small brooks, streams, lakes, and rivers across Europe.  
**Source:** Arkive  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** Yes

Northern Brook Lamprey - *Ichthyomyzon fossor*  
Northern brook lamprey are found in many areas of the midwestern and northeastern United States.  
**Source:** Animal Diversity Web  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** Yes

Southern Brook Lamprey - *Ichthyomyzon gagei*  
Southern brook lampreys are found in the Mississippi River basin, the Tennessee River drainage, and Gulf of Mexico drainages.  
**Source:** Animal Diversity Web  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** Yes

River Lamprey - *Lampetra fluviatilis*  
The river lamprey is found in western Europe from Sweden and Finland south to France and east to Russia.  
**Source:** Arkive  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** Yes

Sea Lamprey - *Petromyzon marinus*  
The sea lamprey is found on both sides of the North Atlantic.  
**Source:** Arkive  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** Yes

Sea Lamprey - *Petromyzon marinus*  
In North American the sea lamprey is found on the east coast of United States and Canada.  
**Source:** EEK - Environmental Education for Kids  
**Intended Audience:** Students  
**Reading Level:** Elementary School  
**Teacher Section:** Yes

Pacific Hagfish - *Eptatretus stoutii*  
The Pacific hagfish is found on muddy bottoms in cold ocean waters along the Pacific Coast from Vancouver, Canada south to Baja California, Mexico.  
**Source:** Animal Diversity Web  
**Intended Audience:** General  
**Reading Level:** Middle School  
**Teacher Section:** Yes
Pacific Hagfish - *Eptatretus stoutii*  📁 📚 🕵️
The Pacific hagfish is also known as the slime eel.
**Source:** Monterey Bay Aquarium **Intended Audience:** General **Reading Level:** Middle School **Teacher Section:** Yes

Pacific Hagfish - *Eptatretus stoutii*  📁 📚 🕵️
The hagfish can tie itself into a knot.
**Source:** Aquarium of the Pacific **Intended Audience:** General **Reading Level:** Middle School **Teacher Section:** Yes

Pacific Hagfish - *Eptatretus stoutii*  📁 📚 🕵️
Hagfish eat worms and invertebrates, but they also enter both dying and dead fish and eat them from the inside out.
**Source:** Oregon Coast Aquarium **Intended Audience:** General **Reading Level:** Middle School **Teacher Section:** Yes

Pacific Hagfish - *Eptatretus stoutii*  📁 📚 🕵️
Hagfish have been around, mostly unchanged, since the Paleozoic era 450 million years ago.
**Source:** California Department of Fish and Wildlife **Intended Audience:** General **Reading Level:** Middle School **Teacher Section:** Yes

Pacific Lamprey - *Entosphenus tridentatus*  📁 📚 🕵️
The Pacific lamprey is born in fresh water, matures in the ocean, and returns to fresh water to reproduce. It dies after reproduction.
**Source:** U.S. Fish and Wildlife **Intended Audience:** General **Reading Level:** Middle School **Teacher Section:** Yes