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## Primitive Animals

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Primitive animals are ones that have not changed dramatically over the millennia and remain very similar to their ancestors.

If we exclude unicellular animals and those without differentiated organs or organelles, then for the most part they are marine animals that are invertebrates or fish. Despite having survived millions of years virtually unchanged, many of these species are now endangered due to human activity.

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## Trichoplax adhaerans

This is the most primitive of the multicellular organisms and the only living example of Placozoa. It has only a few types of cells and is believed to be a link between the unicellular organisms and more advanced multicellular ones.

## Sponges

The sponge family are extremely old – some estimate them to be 760 million years old. Although existing species today are not the same as those found in the fossil record, many are very similar. Sponges are extremely simple, sessile animals. It is believed that some sponges may have eventually given rise to other multicellular organisms, including possibly

humanity's ancestors.

## Coelenterates (Jellyfish)

Jellyfish have been around over 500 million years. Although some species have changed, many remain extremely simple animals that are not that different from their ancestors. Because of their soft bodies, finding fossilized remains of jellyfish is difficult and it is possible they are even older.

## Horseshoe Crab

Horseshoe crabs [1] are often called living fossils, remaining virtually unchanged 445 million years later. They have an extremely well developed immune system and this is believed to be at least part of the reason they have survived so well. Medical research has focused on them in an attempt to understand new ways of fighting off bacteria.

## Coelacanths

The coelacanth was believed to be extinct for millions of years until one was found in 1938 off the coast of South Africa. A few have been caught since then. Coelacanths have thick bony scales like extinct fish species. They can live 60 years, reaching a length of seven feet and a weight of 200 lbs.

## Nautilus

This animal [2] is over 500 million years old as a species. Like the horseshoe crab, it has survived the extinction of many other species. The nautilus is a species of cephalopod, making it related to squid and octopi. They are long lived but little is known about them in the wild. They are likely threatened by habitat destruction.

## Lampreys

Lampreys are jawless fish. They are considered extremely primitive and virtually unchanged in the last 360 million years. They continue to thrive as a species today and have moved into new territories, creating a nuisance as an invasive species. They are currently in the news as their genome [3] has been decoded and some researchers are looking at them for research into overcoming paralysis [4]

## Sturgeon

This group of fish [5] species has been around for more than 200 million years. Many of them are currently facing extinction. They can live up to 100 years and produce many eggs but few survive and their value as caviar adds humans to the predatory list.

Primitive species offer a glimpse into the roots of many other species and evolution itself. They also hold secrets that have allowed them to survive millions of years unchanged despite the many changes that have occurred in the world around them.

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**Links**

[1] <http://www.sciencedaily.com/releases/2008/02/080207135801.htm>

[2] <http://www.fws.gov/international/animals/nautilus.html>

[3] <http://msutoday.msu.edu/news/2013/ancient-lamprey-dna-decoded/>

[4] <http://scixchange.missouri.edu/article/lamprey-creates-splash-in-paralysis-research/>

[5] <http://www.viu.ca/sturgeon/>