

Life in the Deep Fact File

The Deep Sea



More is known about the moon than about life in the deep ocean.



The deepest a human has ever been able to scuba dive is 318m – but this is extremely dangerous! By comparison, the average depth of the ocean is 3700m.



The deepest part of the ocean, the Mariana Trench, is 11,000m deep. If Mount Everest were placed in the trench, it would still sit 1-2 miles below the surface of the water.



Even in the deepest part of the ocean, plastic has been found by submarines on the seafloor.

Useful definitions:

Adaptation is a change in body shape and behaviour to enable a creature to live in a particular area or in particular conditions.

Habitat is the natural home or environment in which an animal, plant or organism lives. A habitat contains all an organism needs to survive, like food and shelter.

Living conditions

Life in the deep is hard – there is high pressure, no light, little food and cold temperatures. Animals living in the deep have developed fascinating adaptations to survive.



Ghost fish at around 1853m © NOAA Ocean Exploration & Research

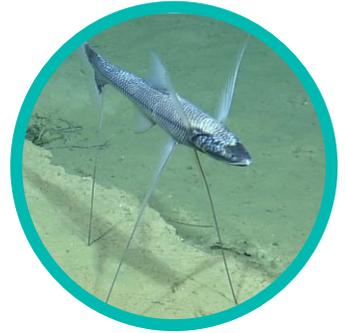
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Dark

Below 200m there's not enough sunlight to allow plants to grow, and below 1000m there's no natural light at all. Some animals have adapted to have huge eyes or produce their own light. At extreme depths, some animals have adapted to have tiny eyes – and even no eyes at all – as there's no need to use them. Instead they use tactile and sensory clues to find food.



Spookfish
© GreenAnswers.com



Tripod fish © Ocean
Exploration Trust

Spookfish have highly sensitive, cylindrical eyes to help them look up as well as forward. **Tripod fish** use their long front fins to feel for food. They then use these fins like hands to guide the food to their mouth. **Anglerfish** have bioluminescence on the end of their dorsal spine. This is positioned near their mouth and used to attract prey.



Anglerfish © Superjoseph
via Shutterstock



Giant isopod © NOAA
Ocean Exploration
& Research

Cold temperatures

The lack of sunlight in the deep means the water temperature is very cold. One adaptation to cold temperatures seen in animals all over the world is to grow larger, which is referred to as the Bergmann's rule. Large animals have greater fat reserves to keep them warm and they have a lower surface to volume ratio to reduce heat loss.

Deep sea isopods are crustaceans that look similar to a woodlouse. A typical isopod in shallower waters can measure up to 5cm, whereas a giant deep sea isopod can measure up to 15cm and a supergiant species up to 50cm. Though this might still sound small, it is a huge size difference between shallow and deep water species.

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High pressure

The deeper in the ocean you travel, the greater the pressure becomes because of the weight of the water above. In the Mariana Trench, the pressure is approximately 1000 times greater than at sea level.

The **Blobfish** has been voted the world's ugliest fish. This is totally understandable when you see images of them out of the water! But footage of them swimming in the deep sea shows a very different looking fish. Their bodies are gelatinous to be able to withstand the high pressure. When the pressure compresses their bodies in the deep, they appear quite fish-like in shape. But if brought to the surface for study purposes, their bodies relax without that pressure, and turn into a gelatinous blob.



Blobfish © James Joel
via Flickr



Gulper eel © NOAA
Photo Library

Little food

The deep is a huge, vast space and therefore it can be hard to find food. Animals have to adapt to eating a variety of food, and eating as much as they can when they have the ability to do so.

The **Gulper eel** has a mouth that can open to 10 times bigger than its own body, which is the biggest mouth to body ratio of any vertebrate. Along with an expandable stomach, this means the gulper eel is able to feed on a range of species and not be restricted by size.