

Reasons For Variety – Extreme Environments

All organisms are **adapted** to their **surroundings** and they have **variations** in their characteristics that allow them to **survive** in their **habitat**.

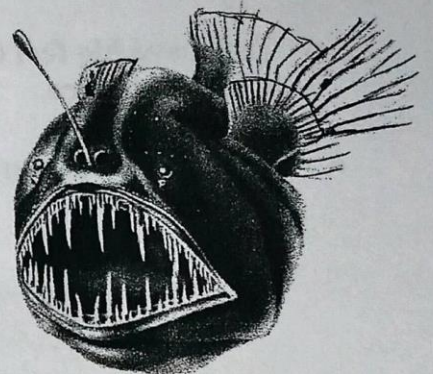
Extreme Environments and Adaptation

1. The deep sea

The deep sea has **no light** meaning **plants can't grow** because they can't photosynthesise. Without plants **food is scarce**, so organisms must survive on scraps that sink down from above.

Deep-sea animals have become adapted to living in the deep ocean in the following ways:

- Some deep-sea fish are able to **emit light** from parts of their body. The light **attracts prey** which the fish eat.
- Deep-sea fish often have **huge mouths**. As they move along the seabed they use their mouths to scoop up particles of food.
- Deep-sea fish often have **huge eyes**, adapted to the dark and **long feelers** to help them locate their prey.
- All deep-sea animals are adapted to withstand the **very high pressure**, found at the bottom of the ocean.



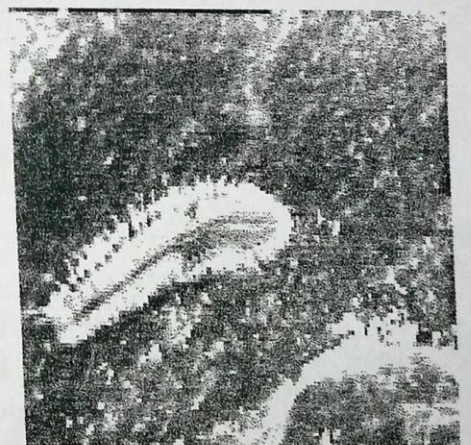
2. Deep-Sea Volcanic Vents

Volcanic vents in the seabed send out hot water at **350°C** and **minerals** into the cold ocean. Some animals have become adapted to living around them, especially bacteria.

- The bacteria are adapted to make their **own food** by using the **chemical energy** contained in the minerals. Using chemical energy to make food is called **chemosynthesis**.

These bacteria are found at the bottom of a food web, so they are **producers**, which sea animals can feed on.

- The bacteria are also **adapted** to cope with the **high temperature** of the hot water and the **high pressure** found at these depths.



Special sense organs to detect high temperature.

deep sea organisms have lots of haemoglobin to help them take oxygen from the water. → oxygen levels are low in sea.