



The Gaia hypothesis

Some scientists argue that all living things have an equal importance because they all play a part in regulating the planet. This idea was first made popular by Dr James Lovelock in the 1960s with his Gaia hypothesis. The world can be seen as a complex interacting system, behaving in some ways, like a single organism.



Small, but mighty

Removing what seems like some pretty inconspicuous organisms, could result in changes across the whole system. Only very recently, researchers discovered a group of micro-organism called crenarchaea, which are playing a major role in helping to support life on Earth. By carrying out genetic analysis of soil samples, we now know that these organisms are responsible for most of the world's oxidation of ammonia in soil, a process which provides vital nutrients for plants.

There could be many species that we simply don't know enough about their biology and ecology to anticipate what the effects of their extinction might be. For example, marine life might play a bigger role than we think in regulating the circulation of water in the oceans, which in turn, influences the global climate. Some scientists have suggested that the movement of big shoals of fish and large marine life, such as whales, could help to circulate warm and cold water in the oceans. Not everyone might agree with such ideas, but we need to test them if we are to truly appreciate the extent that biodiversity influences our planet.

Keystone species

Every species depends on other species for survival; however, there are some plants and animals where an extremely large number of other species are dependent on them. These are known as key-stone species. An example is the fruiting fig tree, which is important for maintaining biodiversity in tropical forests as the figs are the main food source for a large variety of animals. Also, there is a mutual relationship between figs and fig wasps which pollinate them. Without one, the other cannot survive. If figs disappear, so do many species of animal, jeopardising entire ecosystems.

Further Reading

- [Bacteria may get demoted as a key player in the nitrogen cycle in soil](#)
- [Causing a stir](#): Are we ignoring the influence of life on ocean mixing?