



ECOSYSTEMS OF ALL SIZES!

When we understand how a natural environment – an ecosystem – works, however big or small it might be, when we discover the multitude of species that live on Earth and the ways in which they interact with one another, then it's easier to understand the various factors both protecting and threatening these fragile balances. Every living thing belongs to a larger group than just itself. It doesn't take much to protect the nature around us. Taking a moment to find out what's involved – and to observe – is always the best starting point!



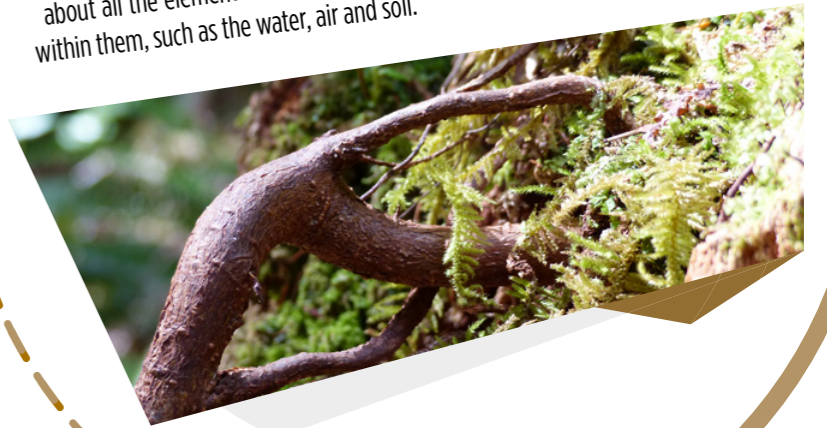
Ecosystems are specific environments that have very particular characteristics, like their climate, for example. Scientists call them biotopes. Every biotope brings together a group of living things. Some are very big, while others are absolutely tiny. These living things are all interrelated with one another. When they all live alongside each other in harmony, we say the ecosystem is established.

It was British botanist Arthur George Tansley who first used the term 'ecosystem' in 1935 to refer to groups of living things that interact with and within specific environments.



WHAT IS AN ECOSYSTEM?

An ecosystem can be any size. A pond, a tree trunk, a forest, a meadow, a rock pool at low tide... they're all ecosystems. The Earth is one giant ecosystem. To understand how they work, what balances them and, on the contrary, what can threaten or destroy them, we need to know about all the elements involved, the living things and all the essentials to life within them, such as the water, air and soil.



The balance of every ecosystem depends on all the living things that make it up. And all the living things that live there depend on one another. If one of them disappears, the balance is upset and all the living things in that ecosystem become threatened.





THE ECOSYSTEM OF A POND

A pond is a small body of water that gets filled with rainwater and surface water. The dimensions of ponds can vary, but they're typically relatively shallow (around 1.5 metres deep). At this depth, the sun's rays can reach the bottom, which provides the perfect conditions for many plants to take root and grow. A pond is a small ecosystem where the living conditions are right for an enormous diversity of species, including aquatic plants and amphibians (species that live under the surface of the water), molluscs, aquatic insects, frogs, newts...

Plants are spread out based on the depth of the water, the amount of light, soil quality and water composition. Microscopic algae (phytoplankton), as well as both rooted and non-rooted plants, whose leaves are either submerged or floating, such as water lily, can also be found here. Different animal groups find a fully-stocked pantry here, but also a fertile breeding ground.



MANGROVES

A mangrove is a type of forest mainly made up of mangrove trees. It's a rare, spectacular ecosystem that joins the sea to the land. Every mangrove is home to very rich biodiversity. They also protect homes on land from storms, tsunamis and rising sea levels. The mangrove trees that make up these forests are incredible. They grow on soil that the tide floods every day. As such, they're able to resist salt and the muddy, unstable and oxygen-poor environment. Mangrove trees have adapted to develop aerial roots that capture the oxygen they need from the air. Their roots filter out some of the salt from the soil, while their leaves reject the rest. To reproduce, they don't emit seeds that could be washed away, instead, they keep their seeds attached to the mother tree, which drops seedlings into the water, which then sink vertically into the sand or mud and take root from there.

Mangroves prefer seagrass environments (the kinds of plants found in shallow coastal waters) and coral reefs, and vice versa. Mangrove forests need calm waters with very few waves and weak currents. This way, their roots can settle, collect sediment and therefore take root. Offshore coral reefs absorb the energy of the waves, creating calm conditions in lagoons where mangroves can thrive. Because of their dense and very tangled roots, mangroves act as filters. Water flowing out to sea is slowed down when it reaches a mangrove forest. Any sediment that manages to pass through the mangroves is more likely to be trapped in seagrass roots. Both these filters working together produce purified water that flows into the lagoon. And that's exactly what coral reefs need to thrive. They need clear water so the sun's rays can pass through, which is essential for photosynthesis and therefore their survival.

