

Earthworm Benefits to Ecosystems



Earthworms are sometimes known as ‘ecosystem engineers’ because they significantly modify the physical, chemical and biological properties of the soil profile.

These modifications can influence the habitat and activities of other organisms within the soil ecosystem.

Earthworms influence & benefit the soil ecosystem in a number of ways

Recycling organic material

Earthworms, along with bacteria and fungi, decompose organic material. Most people know about earthworms and compost, but earthworms do the same in pasture soils, decomposing dung and plant litter and processing 2–20 tonnes of organic matter per hectare each year, and recycling leaf litter under orchards and in other forested areas.

Increasing nutrient availability

This happens in two ways, by incorporating organic materials into the soil and by unlocking the nutrients held within dead organisms and plant matter. Nutrients like phosphorus and nitrogen become more readily available to plants after digestion by earthworms and being excreted in earthworm casts.

Scientists have measured up to five fold increases in nitrogen availability in earthworm casts compared to undigested soil. Earthworms also take nutrients down through the soil profile, bringing them into closer contact with plant roots.

Improving soil structure

Earthworm burrows alter the physical structure of the soil. They open up small spaces, known as pores, within the soil. When earthworms are introduced to soils devoid of them, their burrowing can lead to increases in water infiltration rates of up to 10 times the original amount.

This brings water and soluble nutrients down to plant roots. Burrowing also improves soil aeration (important for both plants and other organisms living in the soil) and enhances plant root penetration.

Providing food for predators

Earthworms, like all creatures, are part of the food chain. Birds are well known predators, along with hedgehogs, badgers, foxes, frogs, toads, insects and many more species.