

Peacekeeping creatures help maintain woodland diversity

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Common woodland creatures, including woodlice, millipedes and worms, can help ensure the survival of weaker species of woodland fungi, according to new research from Cardiff University.

Huge fungal networks, often stretching over several hectares of woodland, compete with each other for space and resources and, now, findings have shown that invertebrates living on the woodland floor have the potential to govern the outcome of these battles.

Likening what happens in woodlands to the popular Nintendo Wii game, Spore Wars, Ph.D student Tom Crowther's study has just been published in the international journal [Ecology Letters](#). His findings reveal that, by feeding on the most combative fungi, invertebrates ensure that less competitive species are not entirely destroyed or digested.

Tom said, "By not allowing the most dominant fungus to destroy all opponents, fungal diversity is maintained within the woodland. This is an important process as fungi are responsible for maintaining [soil quality](#) and fertility, allowing our native trees and plants to grow, and the woodland itself to function.

"We also know that the diversity of [soil](#) organisms plays a major role in determining [plant diversity](#). In many ways, what happens in the woodland is very much like the game Spore Wars. Without these invertebrates acting as peacekeepers, many important [fungal species](#) would be displaced reducing fungal diversity and ultimately affecting the

cycling and recycling of nutrients within the soil."

Tom, a student at the Cardiff School of Biosciences, based his work on laboratory microcosm studies, developed with his Ph.D supervisors, Professor Lynne Boddy and Dr Hefin Jones.

The study is the first to show how predicted changes in soil fauna, as a result of current climate change, may potentially have major consequences for the functioning of Britain's woodland ecosystems.

Considering the implications of the results, Tom said, "It's possible that what we've seen happen in woodland may also take place in all other soil environments. Soil invertebrates may not only be important in ensuring the health of our forests by maintaining fungal diversity, they may also be crucial for our garden and agricultural soils."

Provided by Cardiff University

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