

iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 a.m. CDT, 9 a.m. EDT, 1 p.m. GMT, 9 p.m. China
Wednesday, Sept. 6, 2023



RICHARD D BARDGETT

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<https://research.manchester.ac.uk/en/persons/richard.bardgett>

Richard D. Bardgett is a British ecologist and professor of ecology at the University of Manchester, England. Bardgett's research focuses on ecological interactions between plants and below-ground communities and their role in regulating the structure and functioning of terrestrial ecosystems, with a focus on grasslands. Bardgett has published over 350 scientific papers on topics related to plant and soil ecology, and several books, including *Earth Matters: How Soil Underlies Civilization* (2016), *Aboveground-Belowground Linkages* (2010) and *The Biology of Soil* (2005). He is recognized as a highly cited researcher and has a long-standing commitment to promoting awareness of the importance of soils and their biodiversity. He served as president of the British Ecological Society from 2017 to 2019 and was a co-founder of the Global Soil Biodiversity Initiative, and currently serves on the UK's Department for Environment, Food and Rural Affairs Science Advisory Council and as executive editor of *Journal of Ecology*. Richard was appointed Commander of the Order of the British Empire in King Charles III 2023 New Year's Honors for services to soil ecology and climate change science.

Aboveground-belowground linkages, ecosystem processes, and global change

Research statement: Human activities are rapidly changing the world's ecosystems. The most obvious human impact is through the conversion of land for agriculture, but terrestrial ecosystems are also affected by other global change phenomena, including climate change. This has led to a groundswell of research aimed at improving understanding of the impact of global changes on biodiversity and ecosystem function, and on management strategies to mitigate them. Whilst this topic has received much attention, scientists have only recently become aware that understanding the consequences of global change for ecosystem functioning requires consideration of highly complex communities that live belowground and their interactions with plants. This is because the impact of global changes on the functioning of terrestrial ecosystems is often indirect: they operate via changes aboveground that cascade belowground to the soil biological community, which drives biogeochemical processes and feedbacks to the Earth's climate system. In this talk, I will highlight some recent developments in this area that illustrate how consideration of linkages between aboveground and belowground communities can improve understanding of the consequences of global change for the functioning of terrestrial ecosystems as well as their sustainable management. Richard D Bardgett.



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