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Review [Ecol Lett.](#) 2006 Jul;9(7):870-86. doi: 10.1111/j.1461-0248.2006.00931.x.

The influence of biotic interactions on soil biodiversity

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Abstract

Belowground communities usually support a much greater diversity of organisms than do corresponding aboveground ones, and while the factors that regulate their diversity are far less well understood, a growing number of recent studies have presented data relevant to understanding how these factors operate. This review considers how biotic factors influence community diversity within major groups of soil organisms across a broad spectrum of spatial scales, and addresses the mechanisms involved. At the most local scale, soil biodiversity may potentially be affected by interactions within trophic levels or by direct trophic interactions. Within the soil, larger bodied invertebrates can also influence diversity of smaller sized organisms by promoting dispersal and through modification of the soil habitat. At larger scales, individual plant species effects, vegetation composition, plant species diversity, mixing of plant litter types, and aboveground trophic interactions, all impact on soil biodiversity. Further, at the landscape scale, soil diversity also responds to vegetation change and succession. This review also considers how a conceptual understanding of the biotic drivers of soil biodiversity may assist our knowledge of key topics in community and ecosystem ecology, such as aboveground-belowground interactions, and the relationship between biodiversity and ecosystem functioning. It is concluded that an improved understanding of what drives the diversity of life in the soil, incorporated within appropriate conceptual frameworks, should significantly aid our understanding of the structure and functioning of terrestrial communities.

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