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sOilFauna - a global synthesis effort on the drivers of soil macrofauna communities and functioning

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Abstract

Understanding global biodiversity change, its drivers, and its consequences on ecosystems requires to include soil macrofauna, a highly diverse group involved in numerous ecosystem processes. So far, our knowledge of both the factors that shape soil macrofauna communities and the ecosystem effects of these organisms is limited at the global scale, while numerous local studies exist. The project “sOilFauna” fosters the gathering of literature data on macrofauna communities and produced the most comprehensive soil macrofauna database - the MACROFAUNA database - which collates abundance and biomass data of 17 soil invertebrate groups assessed with a standardized method at ~8700 sites around the world. This dataset will allow testing many important theories in macroecology such as latitudinal gradients and productivity/perturbation-diversity relationships), as well as quantifying the responses of functional and trophic groups of soil macrofauna to different climatic, edaphic, and human-induced drivers (e.g. land use type and change). We will display preliminary results on macrofauna abundance, diversity, and biomass, with the identification of their main drivers at a global scale. The sOilFauna project and consortium also aim at encouraging the global community of soil ecologists to use and share standardized data for future research that will allow even further increase of our knowledge on this understudied group.