

Soil biodiversity monitoring in the EU: towards linking national initiatives of member states

Wim van der Putten, Rachel Creamer, Jasper Wubs

The recently proposed Soil Monitoring and Resilience Soil Directive by the European Commission requires reasonable indicators for soil biodiversity assessment, while what is ultimately needed are potential thresholds for soil health. There are already numerous pan-European and national initiatives where soil biological data is being collected in the different European regions, and within countries, which enables to monitor soil biodiversity, and relate soil biological information to ecosystem services. In this workshop we will discuss how we can align the information that is available across Europe to better deliver the soil monitoring information, and what thresholds can we already define or how should we define in order to improve soil health?

Since the publication of the European Atlas of Soil Biodiversity, the Global Soil Biodiversity Atlas, and the first Global Soil Biodiversity Assessment, there has been a strong emphasis on including soil biological indicators in the wider assessment of soil functions/ecosystem services. These Atlases also helped to bring the biological scientific community closer together to discuss better identification and harmonisation of indicators for soil biology. The time is ripe to start actually measuring soil biodiversity in a systematic way. Indeed, several European countries and the JRC have started such soil biodiversity assessments, and also global programs such as SoilBon and NETSOB, as well as various EU projects such as Benchmarks and SOB4ES are doing so.

During this Special Session at the Wageningen Soil Conference, we will discuss the various initiatives and approaches with the aim to standardize approaches and make results comparable. The soil and its biodiversity are highly complex and monitoring it in a meaningful and effective way represents a significant challenge. Therefore, we would like to bring together the scientific leaders on soil biodiversity to discuss how we can work together to further strengthen the voice of the soil biological community in defining the role of biological indicators in the assessment of ecosystem services and, ultimately, soil health across Europe. To do this we will need to agree definitions, sample strategies, frequencies, benchmarking methods, etc. We realise that for several decades the search for effective soil biological indicators has resulted in much debate and argumentation across the scientific community. In this workshop, we will establish what can we agree on and how can we collectively work together to change the narrative on this topic at policy level for both national and European perspectives.

The objective of this Special Session is to outline a no regret monitoring strategy across Europe, including novel approaches such as biobanking. The ultimate aim is to provide information to a growing community of land managers and other end users that wish to improve the health of soils on which we all depend.