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## Belowground networking: Biogeography of EcM fungi and species variation at different woodland ages

**Olivia Azevedo**<sup>1</sup>, Sietse van der Linde<sup>2</sup>, Kirsty Park<sup>1</sup>, Frank Ashwood<sup>3</sup>, Elisa Fuentes-Montemayor<sup>1,4</sup>, Clare Wilson<sup>1</sup>, Kevin Watts<sup>5</sup>, and Elena Vanguelova<sup>5</sup>

<sup>1</sup>Biological and Environmental Sciences, University of Stirling, Stirling, FK9 4LA, United Kingdom (olivia.azevedo@stir.ac.uk)

<sup>2</sup>Netherlands Food and Consumer Product Safety Authority, National Reference Centre, Wageningen, 6700 HC, The Netherlands (s.vanderlinde@nvwa.nl)

<sup>3</sup>Forest Research, Northern Research Station, Roslin, Midlothian EH25 9SY, United Kingdom (francis.ashwood@forestresearch.gov.uk)

<sup>4</sup>Scotland's Rural College, Craibstone Estate, Bucksburn, Aberdeen, AB21 9YA, United Kingdom (elisa.fuentes-montemayor@sruc.ac.uk)

<sup>5</sup>Forest Research, Alice Holt Lodge, Farnham, Surrey, England, UK, GU10 4LH, United Kingdom (elena.vanguelova@forestresearch.gov.uk)

Ectomycorrhizae (EcM) are evolved mutualistic associations between soil fungi and plant roots. It has been shown that there can be species-specific differences in the ability to colonise roots. Colonised roots have increased longevity, greater resistance to pathogens, toxic elements in the soil and extreme conditions of temperature, acidity and moisture.

EcM inocula are an essential resource in forest management. Nevertheless, measures being implemented worldwide to promote forest cover recovery to reduce atmospheric CO<sub>2</sub> levels can cause ecological shifts. Shifts to ecological communities take place as species become more or less abundant, are wiped out or colonise new habitats. However, these changes may not be captured by metrics focusing on species richness alone.

The lack of direct evidence of large-scale EcM temporal change in fungal community structure or function over time - commonly used in animal and plant research - is a basic, structural knowledge gap. Understanding temporal changes in community composition, whether via species losses and gains, or alterations to relative abundance and dominance is therefore essential to fathom the performance of terrestrial ecosystems, in particular the soil environment and its functions.

This study will characterise EcM fungi in woodland sites of varying ages. This study uses a space-for-time approach, benefiting from a collection of sites part of a wider study on the biodiversity responses to woodland planting.