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# Examining the impact of alternative climate change adaptation strategies on range shifting ability and persistence in a fragmented landscape

Justin Travis\*<sup>1</sup>

<sup>1</sup>School of Biological and Environmental Sciences, University of Aberdeen – Tillydrone avenue, AB24 2TZ, Aberdeen, Scotland, United Kingdom

## Abstract

Connectivity determines the ability of populations and species to respond to climate change through both local adaptation and range shifting. Newly emerging simulation tools provide excellent opportunities for improving our understanding of how we should best manage landscapes for biodiversity under climate change. Here, we will demonstrate how one such tool, RangeShifter, has provided insights into how alternative plausible approaches, namely the improvement of existing habitat, restoration of low quality habitat and creation of new habitat, impact the likely range shifting of UK forest species. We will also emphasise the potential for simulation approaches that link movement and demography with genetics and evolution to be used to determine how landscape management will influence in-situ adaptive responses to climate change.

**Keywords:** connectivity, dispersal, landscape management, range shifting, local adaptation, population viability

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\*Speaker