

## Using historical woodland creation to unpick the ecological networks concept

Kevin Watts<sup>1</sup>, Elisa Fuentes-Montemayor<sup>2</sup>, Jonathan Humphrey<sup>3</sup>, Victor Peredo-Alvarez<sup>2</sup> & Kirsty Park<sup>2</sup>

<sup>1</sup> Forest Research, Farnham, England

<sup>2</sup> University of Stirling, Scotland

<sup>3</sup> Forest Research, Edinburgh, Scotland

The concept of ecological networks, and their focus on landscape-scale conservation, is seen by many as an effective response for biodiversity conservation in fragmented landscapes. As a result conservation activities, such as habitat restoration and creation, are being targeted towards the establishment of ecological networks. These are typically conceptualised as a suite of core areas connected by buffer zones, corridors and smaller stepping stone patches that allow species or their propagules to move between them. Although this is a very appealing concept, based on a number of sound scientific principles, it is supported by limited empirical data. This has resulted in much debate on the relative merit of, and balance between, alternative conservation actions. In a time of budget cuts and limited resources, it is important to ensure that such conservation actions are implemented in the most effective areas to ensure real biodiversity benefits and underpinned by the best available evidence.

Many landscape-scale conservation projects aimed at implementing the ecological network concept are underway throughout the UK (e.g. Nature Improvement Areas (NIAs)) it may be many years/decades until biodiversity benefits are realised. However, we plan to identify equivalent settings/landscape assemblages and draw out the necessary evidence from historical woodland creation sites, which will have inadvertently created the components of ecological networks (or mini NIAs) in many locations across the UK. We use digital spatial datasets of woodland cover in the UK to systematically identify a range of woodland patches of different character (e.g. age, size, degree of connectivity and spatial arrangement) to represent the different components of ecological networks. These sites will be surveyed for a range of woodland-dependent species with different life-history traits (e.g. habitat specificity and dispersal abilities). A literature review has also been carried to inform site selection, species selection and fieldwork tasks. We will present some general guiding principles from this review, highlight the knowledge gaps and discuss our plans and work in progress.