
Spatial and temporal scales of habitat fragmentation effects on genetic diversity in red squirrels

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Résumé

Consideration of scale has been essential in landscape genetic studies since the discipline was first defined. Researchers agree that the choice of scale should be biologically meaningful and based on the species and process of interest, however the scale at which different phenomena operate is not always clear. This is especially true for genetic diversity, which can be an important component in the adaptation and persistence of populations. Genetic diversity may be influenced by many factors, including demographic history and interactions with the surrounding landscape and habitat - processes which are all scale-dependent. In this research we assess how the impacts of habitat amount and fragmentation on genetic diversity vary with both spatial and temporal scale. To do so we deployed over 650 collectors across five 16 x 16 km landscapes in the south of France to gather red squirrel (*Sciurus vulgaris*) hair samples. From these samples we successfully genotyped 362 individuals at 16 microsatellite loci. We will present results from models correlating genetic diversity in groups of individuals to the surrounding habitat amount and arrangement in different time periods and varying spatial scales. Through this research we aim to better understand how habitat loss and fragmentation impact genetic diversity, and the scales at which these processes operate.

Mots-Clés: Genetic diversity, habitat fragmentation, scale, red squirrel

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