



Agri-environment schemes: call for more landscape connectivity

A popular way to improve biodiversity is to provide financial rewards for environmentally friendly methods of managing farmland. A recent study investigates how the benefits of these schemes can be optimised and made more cost-effective. The findings highlight the importance of hedgerow trees in the survival of farmland wildlife.

By 2010, the European Commission aims to halt the decline of biodiversity in the EU¹. Agri-environment schemes are considered to be one of the most realistic policy instruments to reverse biodiversity decline within Europe. This study investigates two ways of making such schemes more effective:

- the provision of fine-tuned financial incentives for the maintenance of specific agricultural landscape features, such as hedgerows
- targeting agri-environment schemes for larger areas on a landscape level, rather than applying them to small areas, plot by plot

The study used larger moths as an indicator group for biodiversity. This is a diverse and species-rich group that provides an important food resource for other animals. The effects of two key landscape features - grassy field margins and hedgerow trees - were assessed for both the number and species diversity of larger moths. Both features provide habitat for moths, and the restoration and management of field margins is rewarded financially in the EU.

In addition, the study investigated the effects of these two features when they were part of a wider landscape with a high uptake of agri-environment schemes (the result of targeted efforts to assist farmers in the application process) compared to when they were part of a wider landscape characterised by a standard, scattered uptake of schemes.

The number and diversity of the moths were recorded on 16 arable farms in two targeted and two non-targeted agricultural landscapes. Overall, the presence of wide field margins had a positive impact on the number and diversity of moths. However, hedgerows had a greater impact, but only significantly so in the targeted areas. In these areas, the number of moths was 60 per cent greater than in non-targeted areas, and diversity was 38 per cent greater.

The results indicate that the shelter provided by hedgerow trees is probably the main reason for their beneficial effects on moth numbers and diversity. Hedgerow trees provide food resources and structural diversity as well as a more sheltered microclimate. The authors suggest that hedgerow trees may act as 'stepping stones' for some species. They could therefore be important in adaptation to climate change as they might provide more opportunity for movements through typically exposed, open agricultural landscapes in search of resources. Planting and retaining hedgerow trees should form an important part of agri-environment schemes.

The authors recommend that it is important to move forward from field- and farm-scale implementation of agri-environment schemes towards connective landscape-scale conservation. While hedgerow trees were found to benefit moths, this was only the case for trees in landscapes where there was a high proportion of targeted agri-environment scheme areas. Thus the context of the trees and the relationship of protected targeted areas to each other within a landscape is very important. The study also recommends that it could be beneficial to complement the entry-for-all approach to agri-environment schemes with a system that targets specific areas and/or landscapes in high nature conservation value farmland. This system would focus on those valuable areas and would be open to beneficiaries ready to undertake agri-environment specific commitments on their land.

¹ See http://ec.europa.eu/environment/nature/biodiversity/comm2006/index_en.htm

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Contact: thomas.merckx@zoo.ox.ac.uk

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