
Finding the balance: food production and biodiversity conservation in Europe

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Abstract

Reconciling the conflict between agriculture and biodiversity conservation is one of the greatest challenges we face this century, and the focus of major debate within the conservation community. Whilst this debate touches on broader issues of food security and food sovereignty, the question of how a particular landscape could theoretically be managed to produce food at the least cost to biodiversity has an important role to play in informing conservation policy and practice. Two alternative directions have been proposed to address this question: ‘land sharing’ (integrating food production and nature conservation on the same land through low-yield farming, requiring a relatively greater area under cultivation) and ‘land sparing’ (segregating the two aims, using high-yield agriculture to minimise the area needed for food production and thus maximise the land area that can be set aside for conservation).

In order to critically assess these two approaches (and intermediates between the two) empirical data are needed on the changes in population densities of individual species across a gradient of agricultural yield. My PhD research, based in eastern Poland and focussing on birds, aims to assess the relative merits of these different strategies in Europe for the first time. Here it might be reasonable to expect that glaciation plus a prolonged exposure to agriculture may have filtered out those species most sensitive to habitat disturbance, yielding a more resilient biota potentially favoured by land sharing. However, my preliminary results indicate that more species will benefit from a land sparing approach, where ‘spared’ land may be used for both the protection or restoration of natural habitats (forests and wetlands), and for the conservation of mixed-habitat mosaics that include some extremely low-yielding farmland but contribute very little in terms of food production.

This raises many questions about the mechanisms by which these different strategies can be delivered within the EU, in landscapes with a complex system of land-ownership and multiple objectives underlying all land management decisions. Alongside my preliminary results, I will highlight on-going work on a case-study and workshop that explore how landscape-scale land-use strategies might be delivered in practice in eastern Poland.

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