**Tailor agricultural policies to meet local conservation concerns**

Grassland bird species of European conservation concern are potentially threatened by changes in land use in the Iberian cereal-steppes. However, a recent study suggests not all bird species respond in the same way to similar management guidelines and agri-environmental schemes need to be adjusted to local conditions.

It is important to understand the ecological consequences of landscape fragmentation and changes to grazing regimes caused by farmers abandoning land or switching livestock, from sheep to cattle, for example.

In this study, partly funded by the EU’s LACOPE project, the researchers investigated how numbers of five grassland birds varied according to grazing regimes and the effects of land use change on habitats in open agricultural land in the cereal-steppes of southern Portugal. Cereal steppes are extensive areas of flat grassland, which are important habitats for birds of conservation status in the EU. They are farmed using low-impact, traditional practices in Portugal and Spain, but land use changes fragment or break-up these farmland habitats, as shrub and woodland moves onto the land or forests are planted. Fragmentation can deprive bird species from migrating between breeding, feeding or wintering habitats, or impede their movement to meet other populations for genetic exchange.

The study counted the number of breeding pairs of birds in 10 hectare samples of fallow fields, which are important habitats for grassland bird species but vulnerable to changes in farming methods. Overall, the total number of breeding territories for the five grassland bird species fell significantly, from 327 territories in 2000-2001, to 189 territories in 2004.

At the landscape scale the study found:
- Thekla larks appeared to benefit from smaller patch sizes, a result of higher landscape diversity which arises from unmanaged areas intruding into the steppe landscape. High numbers were found in landscapes with small grassland patches as these birds prefer to breed in grassland edges.
- Calandra larks avoid breeding in grassland edges and high numbers were found only in large areas of unfragmented open farmland.
- Little bustards and short-toed lark numbers fell in landscapes highly broken-up by shrublands and forests, but benefited from moderate levels of smaller habitat patches.
- Corn buntings were the most abundant species, as they tolerate a wide range of habitat conditions.

At the field scale, agricultural management strongly affected bird densities:
- Little bustard and corn bunting numbers were greatest in fields grazed by cattle, where the grass is taller than in sheep pastures.
- Short-toed larks were mainly found in sheep pastures, where the grass is short from intensive grazing.
- Short-toed larks and thekla larks were found predominantly in older fallow fields where cattle were largely absent.
- Corn buntings were not found in old fallow fields.

These results demonstrate that the same agricultural policies may positively affect some grassland bird species of concern, but may be damaging to other species. The researchers caution that European agri-environmental schemes should therefore be tailored to meet local conservation objectives.

1. LACOPE (Landscape Development, Biodiversity and co-operative Livestock Systems in Europe) was supported by the European Commission under the Fifth Framework Programme. See: [http://144.41.253.33/lacope/index.html](http://144.41.253.33/lacope/index.html)


Contact: luis.reino@mail.icav.up.pt and luisreino@isla.utl.pt

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