FARMING PRACTICE
LANDSCAPE FEATURES

IMPACT: BIODIVERSITY

Reference 23

Batáry, P; Dicks, LV; Kleijn, D; Sutherland, WJ 2015 The role of agri-environment schemes in conservation and environmental management CONSERVATION BIOLOGY, 29(4), 1006-1016. 10.1111/cobi.12536

Background and objective

Since a 2003 review questioned the overall effectiveness of agri-environmental schemes (AES) for biodiversity, there has been a plethora of case studies and meta-analyses examining their effectiveness. There is almost no evidence yet on whether the attraction of wild species to AES land represents a stabilization and increase of plant and animal populations or a local concentration of these populations with concurrent dilution in other nearby areas. Authors reviewed the history, current use, and effectiveness of AES as a conservation tool in Europe to determine whether AES are becoming more effective over time and whether changing management in productive or non-productive areas benefits biodiversity.

Search strategy and selection criteria

Merging the data sets of 3 recent meta-analyses on the effects of AES on species richness (Batáry et al. 2011; Scheper et al. 2013; Tuck et al. 2014). 1) Only studies from the 28 European Member States, Norway, and Switzerland were included; 2) studies were excluded if the number of replicates was fewer than three experimental or control areas; 3) studies performed at plot level (i.e., within-field experiments) were excluded.

Data and analysis

Statistical analyses were carried out in the metafor package of R. Funnel plots, regressions test for funnel plot asymmetry, and fail-safe numbers were calculated.

Number of papers	Population	Intervention	Comparator	Outcome	Quality score
103	Farmlands	Agri-environmental schemes (hedgerows, field margins or lands taken out of production)	No semi-natural habitat features	Metric: Species richness; Effect size: Hedge g (standardized difference) comparing the considered metrics between intervention and control	81.25

Results

- Out-of-production schemes (i.e. hedgerows, field margins or lands taken out of production) were effective at enhancing species richness.

Factors influencing effect sizes

- No factors influencing effect sizes to report

Conclusion

Schemes aimed at areas out of production (such as field margins and hedgerows) are more effective at enhancing species richness than those aimed at productive areas (such as arable crops or grasslands).