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tel: +44 1970 62 2400
email: is@aber.ac.uk

Farmland biodiversity and agricultural management on 237 farms in 13 European and two African regions

GISELA LÜSCHER, YOUSSEF AMMARI, ALJONA ANDRIETS, SIYKA ANGELOVA, MICHAELA ARNDORFER, DEBRA BAILEY, KATALIN BALÁZS, MARION BOGERS, ROBERT G. H. BUNCE, JEAN-PHILIPPE CHOISIS, PETER DENNIS, MARIO DÍAZ, TETYANA DYMAN, SEBASTIAN EITER, WENDY FJELLSTAD, MARIECIA FRASER, JÜRGEN K. FRIEDEL, SALAH GARCHI, ILSE R. GEIZZENDORFFER, TIZIANO GOMIERO, GUILLERMO GONZÁLEZ-BORNAY, YANA GUTEVA, FELIX HERZOG,¹ PHILIPPE JEANNERET, ROB H. G. JONGMAN, MAX KAINZ, NORMAN KWIKIRIZA, MARÍA LOURDES LÓPEZ DÍAZ, GERARDO MORENO, PIP NICHOLAS-DAVIES, CHARLES NKWIINE, JULIUS OPIO, MAURIZIO G. PAOLETTI, LÁSZLÓ PODMANICZKY, PHILIPPE POINTEREAU, FERNANDO PULIDO, JEAN-PIERRE SARTHOU, MANUEL K. SCHNEIDER, TAHAR SGHAIER, NORMAN SIEBRECHT, SIYKA STOYANOVA, SEBASTIAN WOLFRUM, SERGIY YASHCHENKO, HARALD ALBRECHT, ANDRÁS BÁLDI, MÁRTA BELÉNYESI, JACINTO BENHADI-MARIN, THEO BLICK, SERGE BUHOLZER, CSABA CENTERI, NORMA CHOISIS, GÉRARD CUENDET, HENDRIKA J. DE LANGE, SYLVAIN DÉJEAN, CHRISTO DELTSHEV, DARIÓ J. DÍAZ COSÍN, WENCHE DRAMSTAD, ZOLTÁN ÉLEK, GUNNAR ÉNGAN, KONSTANTIN ÉVTUSHENKO, ESZTER FALUSI, OLIVER-D. FINCH, THOMAS FRANK, FEDERICO GAVINELLI, DAVID GENOUD, PHILLIPA K. GILLINGHAM, VIKTOR GRÓNÁS, MÓNICA GUTIÉRREZ, WERNER HÄUSLER, XAVER HEER, THOMAS HÜBNER, MARCO ISAIA, GERGELY JERKOVICH, JUAN B. JESUS, ESEZAH KAKUDIDI, ESZTER KELEMEN, NÓRA KONCZ, ESZTER KOVACS, ANIKÓ KOVÁCS-HOSTYÁNSZKI, LUISA LAST, TOSHO LJUBOMIROV, KLAUS MANDERY, JOSEF MAYR, ATLE MJELDE, CHRISTOPH MUSTER, JURI NASCIMBENE, JOHANN NEUMAYER, FRODE ØDEGAARD, FRANCISCO JAVIER ORTIZ SÁNCHEZ, MARIE-LOUISE OSCHATZ, SUSANNE PAPAIA-HÜLSBERGEN, MAURO PASCHETTA, MARK PAVETT, CÉLINE PELOSI, KÁROLY PENKSZA, REIDUN POMMERESCHE, VICTOR POPOV, VOLODYMYR RADCHENKO, NINA RICHNER, SUSANNE RIEDEL, JOHN SCULLION, DANIELE SOMMAGGIO, OTTÓ SZALKOVSKI, ERICH SZERENCITS, DOLORES TRIGO, JIM VALE, RUUD VAN KATS, ANGEL VASILEV, ANDREW E. WHITTINGTON, JERYLEE WILKES-ALLEMANN AND TOMMASO ZANETTI

Abstract. Farmland is a major land cover type in Europe and Africa and provides habitat for numerous species. The severe decline in farmland biodiversity of the last decades has been attributed to changes in farming practices, and organic and low-input farming are assumed to mitigate detrimental effects of agricultural intensification on biodiversity. Since the farm enterprise is the primary unit of agricultural decision making, management-related effects at the field scale need to be assessed at the farm level. Therefore, in this study, data were collected on habitat characteristics, vascular plant, earthworm, spider, and bee communities and on the corresponding agricultural management in 237 farms in 13 European and two African regions. In 15 environmental and agricultural homogeneous regions, 6–20 farms with the same farm type (e.g., arable crops, grassland, or specific permanent crops) were selected. If available, an equal number of organic and non-organic farms were randomly selected. Alternatively, farms were sampled along a gradient of management intensity. For all selected farms, the entire farmed area was mapped, which resulted in total in the mapping of 11 338 units attributed to 194 standardized habitat types, provided together with additional descriptors. On each farm, one site per available habitat type was randomly selected for species diversity investigations. Species were sampled on 2115 sites and identified to the species level by expert taxonomists. Species lists and abundance estimates are provided for each site and sampling date (one date for plants and earthworms, three dates for spiders and bees). In addition, farmers provided information about their management practices in face-to-face interviews following a standardized questionnaire. Farm management indicators for each farm are available (e.g., nitrogen input, pesticide applications, or energy input). Analyses revealed a positive effect of unproductive areas and a negative effect of intensive management on biodiversity. Communities of the four taxonomic groups strongly differed in their response to habitat characteristics, agricultural management, and regional circumstances. The data has potential for further insights into interactions of farmland biodiversity and agricultural management at site, farm, and regional scale.

Key words: *agricultural management; arable crop; bee; BioBio; earthworm; grassland; habitat diversity; permanent crop; spider; Tunisia; Uganda; vascular plant.*

The complete data sets corresponding to abstracts published in the Data Papers section of the journal are published electronically as Supporting Information in the online version of this article at <http://onlinelibrary.wiley.com/doi/10.1890/15-1985.1/supinfo>.

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