Agricultural intensification and biodiversity partitioning in European landscapes comparing plants, carabids, and birds.
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Sections:
Plant-Biotic Interactions,Community Ecology & Biodiversity,Conservation & Restoration Ecology,Spatial & Landscape Ecology,Theoretical Ecology

Comments:
This study makes a major step towards understanding the spatial organization of farmland biodiversity because it was designed to disentangle the effects of landscape homogenization from agricultural intensification; it included a variety of taxonomic groups (plants, birds, carabid beetles) and examined their species richness at scales from individual farm fields to regions across Europe. The study included 1350 fields on 270 farms in nine regions with a North-South extent from Sweden and Estonia to Spain, and a West-East extent from Ireland to Poland.
Agricultural intensity, an index of pesticide inputs, fertilizer inputs, and mechanical operations, was negatively correlated with species richness of plants and birds, but not carabid beetles, at all spatial scales. However, beta (B)-diversity between farms and regions contributed the most to total diversity, showing that agricultural intensification does not necessarily cause homogenization and that environmental heterogeneity at large spatial extents was hugely important in maintaining overall diversity.