

Increasing crop richness and reducing field sizes provides higher yields

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Abstract

Working landscapes represent >60% of terrestrial landscapes and thus represent opportunities for biodiversity conservation outside of traditional protected areas. For long, biodiversity conservation and crop productivity have been seen as mutually exclusive options. Here, we use a unique dataset that includes annual monitoring of 12,300 permanent 25 ha-plots over two decades across Spain to assess how working landscapes are changing over time and how these changes affect their ability to ensure high yields. We find that win-win strategies that are good for biodiversity conservation can also lead to increasing crop yields. Specifically, we find that management practices that favor increasing biodiversity values such as maintaining small field sizes and high crop richness values at the landscape scale actually lead to the greatest yield values across 54 crops considered. Win-win scenarios for biodiversity conservation and crop productivity are thus possible, yet not as widespread as they could be.

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