# Monitoring grassland biodiversity using farmer-derived data: opportunities and challenges

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## Abstract

Biodiversity in European grasslands has declined due to multiple drivers, including management intensification and over- or under-grazing. Policies in the EU and UK, such as the EU Biodiversity Strategy, aim to restore biodiversity. However, assessing the effectiveness of these policies requires effective biodiversity monitoring, which comes with practical challenges. For example, who should do the monitoring, and what methods should be used? This study evaluates whether farmer-recorded data can be useful in monitoring grassland biodiversity.

We investigated this through literature review, farmer surveys, and field data collection. The review evaluated previous studies on farmer-derived biodiversity data, such as results-based payment schemes. An online survey targeted UK Pasture for Life (PFL) farmers to explore constraints and opportunities. Additionally, we tested simple field protocols in the UK, Sweden, and Romania, to compare farmer-recorded data with expert botanical assessments.

Of our 25 survey respondents, most farmers reported that they monitored biodiversity, but typically on an infrequent or ad-hoc basis, and few used recording schemes or apps. Time constraints were the main barrier, followed by a lack of technical expertise and suitable protocols. When asked about incentives, most farmers favoured an easy monitoring protocol. Our fieldwork tested such protocols and found that farmer-reported counts of non-grass plant species in 5×5m quadrats correlated closely with expert botanical assessments. However, the use of farmer-recorded indicator species was less reliable.

Our findings highlight the need for simple, farmer-friendly biodiversity monitoring protocols. A straightforward metric, such as counting flower species during the appropriate season, could be an effective tool while encouraging greater farmer engagement in biodiversity conservation.

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