Establishing Baseline Monitoring at a Landscape-Scale Nature Recovery Project Flowering Plants and Pollinators

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Summary

Sapperton Wilder, a nature recovery project in the Cotswolds established in 2021, consists of 380 acres split into 19 fields. This research took place in its first year lying fallow after coming out of decades of conventional arable production. The project is looking to shift land management to include grassland restoration, regenerative agriculture, and agroforestry. To measure how these different land management techniques effect change, a biodiversity baseline must first be taken.

The aim of this research was to develop methods for long-term monitoring of flowering plants and pollinators at Sapperton Wilder. The resulting data has added to the growing baseline for the project which began in Autumn 2021. A Phase 1 Habitat Survey and desk study were conducted, with field surveys undertaken between May and September 2022.

Over 100 quadrats were surveyed for flowering plants, and over 14km of transects were repeatedly walked for pollinators. The results found over 88 species of flowering plants throughout the site. The Northern Block had higher species diversity than the other two blocks. 17 butterfly species and 6 bumblebee species were observed during the transects. No significant difference was found between blocks for pollinators.

Methods

Locations for quadrats were randomly selected in QGIS. Margins and mid-field were equally represented. Six quadrats were surveyed per field. DOMIN scale was used to represent percent cover.

Pollinator transects covered the margin and middle of each field. The transect was used to simultaneously count and identify both butterflies and bumblebees.

1m x 1m quadrat

Most prevalent: Great Willowherb

Most prevalent: Common Blue Butterfly

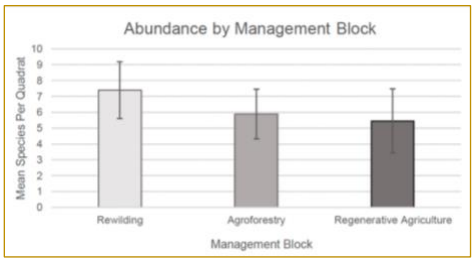
Most prevalent: Buff-tailed Bumblebee

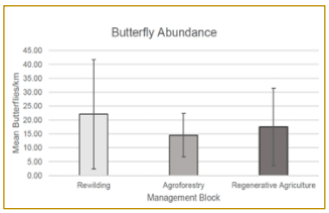
Results – Flowering Plants

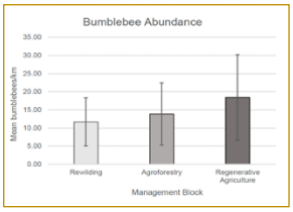
88 total species were found within the quadrats, with the northern block having significantly higher species abundance. Great Willowherb, Spiny Sow Thistle, Dandelion, Field Pansy, and Creeping Thistle most abundant species.

Results – Pollinators

17 of the 43 resident and migrant butterflies of Gloucestershire were observed. Most prevalent butterflies were Common Blue, Meadow Brown, Large White, and Ringlet. The 6 bumblebee species observed were in alignment with time of year and local records, with Buff-tailed and Common Carder most prevalent species.







Conclusion

Positive result for flowering plants, especially for recently coming out of conventional arable production. Possibly due to maintenance of wildflower margins in the past. Plant surveys should be repeated every 2 years.

A solid starting baseline for pollinators, however as most of the surveys were done between July and September, a number of earlier emerging species were missed. Pollinator transects should be repeated yearly.

Sapperton Wilder's aim of matching crop production with improving biodiversity will likely produce influential results when comparing future monitoring to these baseline data.

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sapperton wilder

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