

# LOW-INTENSITY SHEEP GRAZING STORES CARBON AND CONSERVES UPLAND SPECIES



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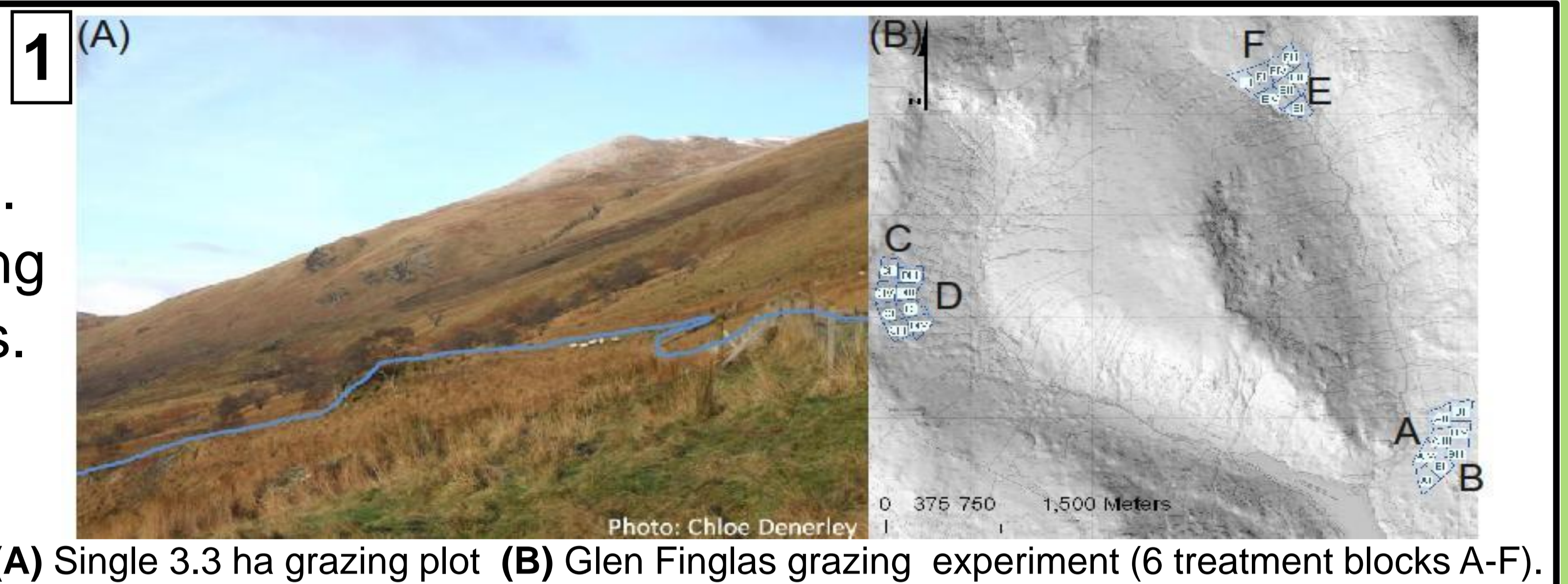
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## Background

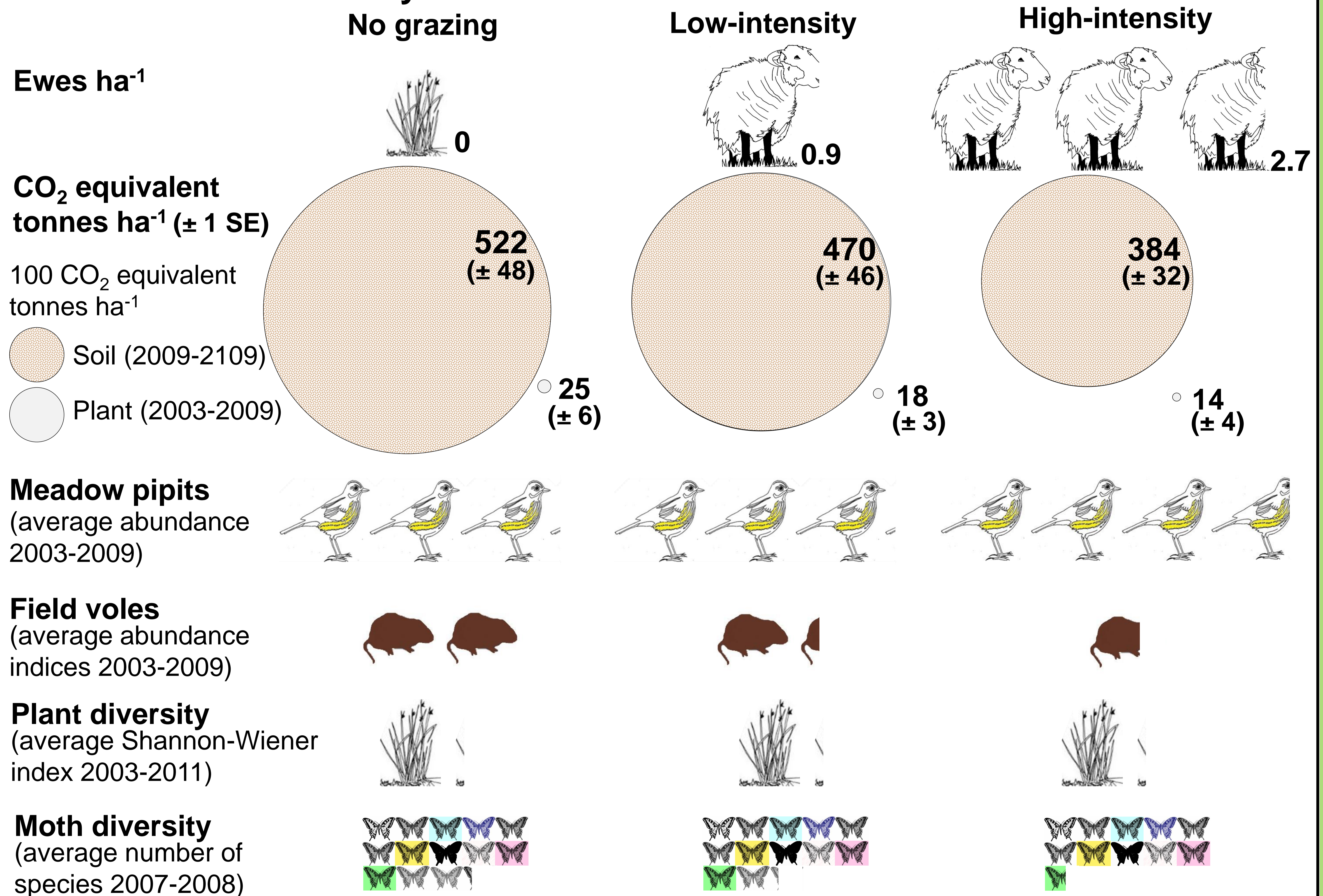
Upland soils in the UK hold approximately one-third of the national terrestrial carbon (C) stores. It is vital to manage upland ecosystems so that soil C loss is avoided. Livestock grazing dominates upland land use, yet our understanding of the impact of grazing on C storage has been dogged by presence vs. absence (exclosure) studies. Using a long-term (est. 2003) and large-scale grazing experiment (Fig. 1) we provide evidence of the impact of different sheep grazing intensities on upland C storage and species abundance and diversity.

## Approach

- Quantify C stored in dominant plant community – *Molinia caerulea* (purple moor grass) after 7 years.
- Predict soil C storage based on plant C inputs using an organic turnover model (RothC) over 100 years.
- Compare long-term plant and soil C storage with long-term surveys quantifying the abundance and diversity of animal and plant species.



## How does sheep grazing intensity impact upland C storage and species abundance and diversity?



**Conclusion** Our findings suggest that to minimise trade-offs between multiple upland land-use objectives low-intensity sheep grazing is a better upland management practice than high-intensity sheep grazing and/or a cessation of grazing altogether.