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Assessment of UKs Terrestrial Carbon sequestration potentials: Where do the opportunities lie?

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Management strategies that seek to enhance biospheric Carbon (C) sequestration across terrestrial landscapes should have among its core aims: (1) the protection of existing stores and the reduction of the current rate of C loss from soil and vegetation systems; (2) the restoration of ecosystems and soils to restore areas that have been historically depleted through anthropogenic activities; and (3) creating new stores through greater C storage in areas that currently have little. Thus, policies and management schemes to this effect should be based on considerations of scientific evidence which expresses the potentials and the feasibility of implementation, and the environmental gains that can be achieved across landscapes.
This study presents an assessment of the potential that exists for biospheric C sequestration across UK landscapes and the feasibility of realising these opportunities using a combination of model predictions and spatial analyses. The determination of the sequestration potentials across landscapes is based on the comparison of potentially undisturbed C stocks; estimated from model outputs of Dynamic Global Vegetation Models (DGVMs) and Potential Vegetation distribution; and present day C stocks, determined from the combination of national dataset on soil properties and vegetation cover. The resulting sequestration potential is then subjected to Agricultural Land Classification (ALC) to determine areas across landscapes which present feasible opportunities for implementing sequestration activities. The output of these analyses is a spatial representation of the sequestration potential across landscapes to aid decision-making. The magnitude of the total C sequestration potential relative to UK CO_2 reduction budget is also discussed.