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Review article

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Evidence and attribution of the enhanced land carbon sink

In the format provided by the authors and unedited

Supplementary material

Table S1: Methods of sink enhancement detection and attribution

Method	**Description**
Atmospheric observations	Calculating the residual land sink using observations of atmospheric CO_2 concentrations and isotopic fractionation of $\delta^{13}CO_2$ and O_2.
Atmospheric inversion modeling	Combining available atmospheric CO_2 mole fraction measurements (both surface observations and satellite-based information on the atmospheric column) with inverted atmospheric transport models to infer optimized land-atmosphere fluxes.
Earth system models (CMIP)	Multi-model predictions of historic and future climate changes from natural variability or radiative forcing.
Dynamic Global Vegetation Models (DGVMs)	Models that simulate shifts in vegetation and resulting change in biogeochemical and hydrological cycles in response to climate change and meteorological variability.
Satellite observations	Satellite data estimate key aspects such as rates of photosynthesis, gross carbon uptake, leaf area, biomass, canopy water content, evapotranspiration, biomass and biomass burning over space and time. Despite the plethora of observations, few are available over a long enough period to quantify trends in ecosystem function.
Eddy covariance flux towers	The eddy-covariance technique can directly measure the net exchange of CO_2 between ecosystems and the atmosphere. Of the over 2,000 sites around the world, many are now over three decades in operation, supporting estimates of annual net carbon sinks or sources by ecosystems over multiple years.
Free atmospheric carbon experiments (FACE)	Artificially enhancing the concentration of CO_2 around a natural system to observe effects on ecosystem function.