

Reducing carbon footprints with carbon storage

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Control of carbon emissions is an important component in the bid to address global climate change. However destruction of wildland habitats to make way for agriculture continues to erode the amount of carbon stored in the biomass and soil. New research published in BioMed Central's open access journal *Carbon Balance and Management* shows that maintenance of wildlands in and among vineyards significantly increases carbon storage. Policies which include improving carbon storage by increasing vegetation and biodiversity, along with reduction in carbon emissions, will help to balance global atmospheric carbon.

Across the Mediterranean, vineyard expansion poses a threat to loss of natural habitat and [species diversity](#). A study in Northern California looked at the biodiversity and [carbon storage](#) at five ranches with a range of soil types and farming methods. Ranches varied in the amount and variety of wildland - from having only five species of mostly very young trees, to having 18 different species of tree, ranging from saplings to established, closed canopy forest. Most of the carbon was stored in the top metre of soil (not including roots) however the variation in carbon content was most noticeable for aboveground woody biomass where wildlands had 12 times the carbon content of vineyards. Overall, forest areas contained 45% more carbon than vineyard but variation between ranches was extreme depending on the amount, and type, of vegetation present.

Prof Louise Jackson from the University of California whose team performed the research, explained, "Maintenance of natural wildland in

agriculture sites can improve water control, pest management, retention of nutrients, and prevent erosion. Our results show that integration of wildland and vineyards can also improve the amount of carbon stored in [woody biomass](#) and in the soil compared to more strictly farmed land and that organically based methods appear to further minimize the winegrower's carbon footprint."

More information: Assessment of carbon in woody plants and soil across a vineyard-woodland landscape, John N Williams, Allan D Hollander, A Toby O'Geen, L Ann Thrupp, Robert Hanifin, Kerri Steenwerth, Glenn McGourty and Louise E Jackson. *Carbon Balance and Management* (in press)

Provided by BioMed Central

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