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Comparison of carbon sequestration and methane emissions in different hydrologic and disturbance conditions in subtropical wetlands

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Wetlands are among the best ecosystems for long-term sequestration of carbon from the atmosphere yet they continue to be viewed by many as primarily sources of greenhouse gas emissions, particularly methane. While these carbon fluxes have been compared extensively in boreal and temperate zone wetlands, there are relatively few summaries of field studies of the relative importance of these two carbon fluxes in tropical and subtropical wetlands This study summarizes a half-decade of studies in south Florida where methane emissions and carbon sequestration are compared in in different hydrologic and disturbance conditions using similar field and laboratory methods. A previously published model is updated and used to compare the relative importance of these fluxes for net radiative forcing. Implications of the combined effects of continued human development causing wetland disturbance along with climate-change-induced sea level rise in south Florida will be discussed.