



GHG fluxes in a subtropical European wetland (Southeast Spain)

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Wetlands accumulate a significant portion of the global soil carbon pool and are considered important carbon sinks. However, it is still unknown whether wetlands will convert from long-term carbon sinks to sources due to global warming and other anthropogenic effects. The eddy covariance technique is one of the most commonly used methods worldwide to measure GHG gas exchanges from “flux towers”, forming a FLUXNET community. Several wetland sites are already included in the European FLUXNET community providing continuous information about CO₂, H₂O and CH₄ exchanges over a temperature and precipitation gradient from northern Scandinavia to southern Germany. However, there is a lack of information about the behaviour of wetlands located in the south of Europe. The primary objective of this study is to analyse the ecosystem-scale water and carbon (CO₂ and CH₄) fluxes from a restored wetland located in southern Spain in a sub-humid warm climate. This restored wetland, with *Phragmites australis* as the dominant species, is characterised by a mean annual temperature of 16°C and mean annual precipitation of ca. 470 mm, with a very dry summer. In June 2012, an eddy covariance tower was installed to measure fluxes of H₂O, CO₂ and CH₄ to evaluate possible effects of global warming on the role of such ecosystems as carbon sinks. We also analyse such effects on respiratory and photosynthetic processes through flux partitioning methods, calibrated using independent measurements. Here we present preliminary GHG fluxes at the site together with an evaluation of the dominant processes and their drivers.