

(41-240329-C) **Descriptive Statistical Analysis of Non-Wetland Methane (CH₄) Fluxes to Inform Modeling of the Global CH₄ Soil Sink**

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Natural wetlands constitute roughly one-third of the annual global methane (CH₄) sources while uplands constitute the largest biological CH₄ sink. Previous analyses of the FLUXNET-CH₄ Community Product, the largest yet compilation of surface CH₄ fluxes, have improved our empirical understanding and models of wetland CH₄ emissions, but non-wetland sites have not been investigated as thoroughly. To better quantify regional and global CH₄ emissions, including net uptake across uplands, we explore the statistical properties of non-wetland CH₄ fluxes in the FLUXNET-CH₄ Community Product, including analysis of trends across biomes, seasons, and ecosystem types. These analyses will assist in the development of a knowledge-guided machine learning model with collaborators at NOAA and DOE.

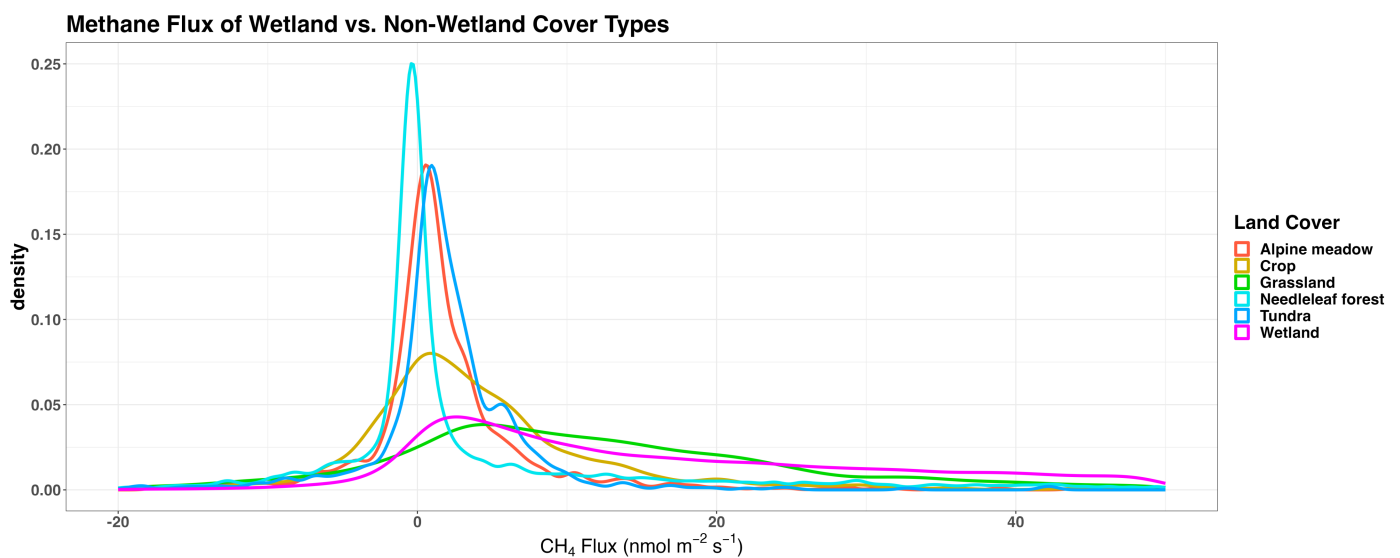


Figure 1. Methane fluxes across non-wetland sites organized by land cover type included in the FLUXNET-CH₄ Community Product v1. Fluxes for all upland cover types are distinct from wetland cover due to a larger share of data near 0 nmol m⁻² s⁻¹ and slightly more negative for forests.