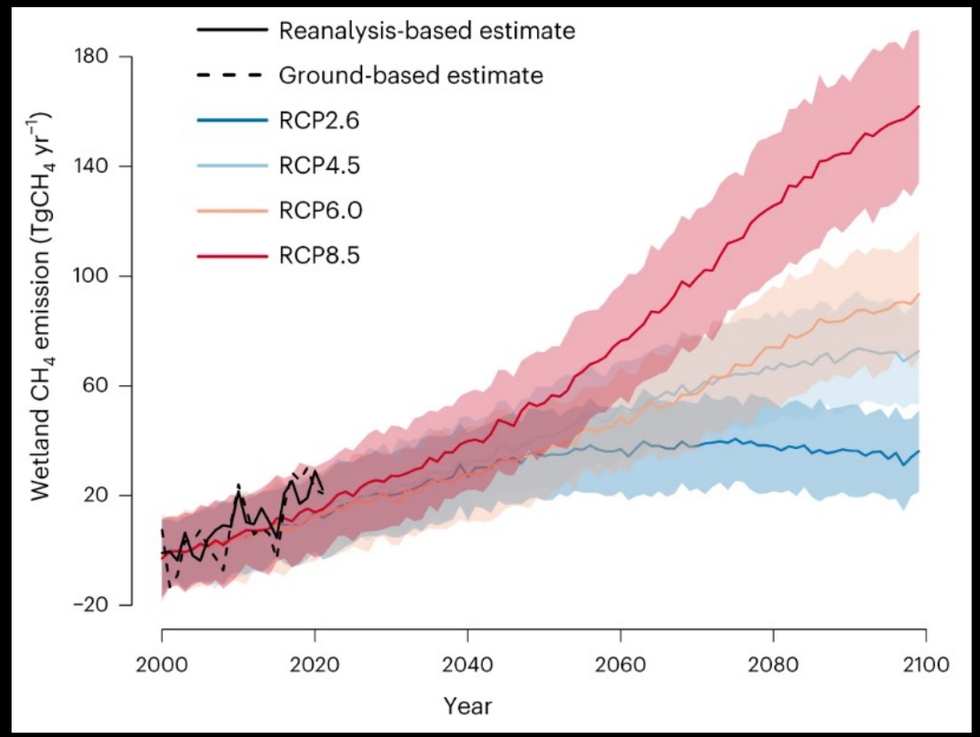
Climate: Recent Intensification of Wetland Methane Emission and Effects on Global Warming

Methane concentrations are more than 150% higher than 100 years ago, and in 2020 the growth rate of methane surprisingly doubled. Methane (CH_4) is a potent greenhouse gas with a warming potential that is 84 times stronger than CO_2 on a 20-year horizon. Because of its relatively short lifetime (~10 years) in the atmosphere, methane emission reductions are an important climate mitigation option.

NASA GSFC scientists, using a wetland model, found intensified wetland methane emissions during 2000–2021, corresponding with 2020 and 2021 being exceptional years of growth.The work suggests that a wetland-methane climate feedback may be emerging from from anthropogenic climate change and increased precipitation from the 2020-2022 La Nina. Their results highlight the need for sustained monitoring and observations of global wetland methane fluxes to document emerging trends, variability and underlying drivers.

The wetland model is providing methane emissions data to the U.S. Greenhouse Gas Center & in visualizations used for the NASA Earth Information Center.



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