

CP14A-1030 - Aquatic Ecosystems are the Largest Source of Methane on Earth



Monday, 17 February 2020



16:00 - 18:00



SDCC - Poster Hall C-D

Abstract

Methane concentrations in the atmosphere have almost tripled since the industrial revolution, contributing 16% of the additional radiative forcing by anthropogenic greenhouse gas emissions. Aquatic ecosystems are an important but poorly constrained source of methane (CH₄) to the atmosphere. Here, we present the first global methane emission assessment from all major natural, impacted and human-made aquatic ecosystems including streams and rivers, freshwater lakes and reservoirs, aquaculture ponds, estuaries, coastal vegetated wetlands (mangroves, salt-marshes, seagrasses), tidal flats, continental shelves and the open ocean, in comparison to recent estimates from natural wetlands and rice paddies. We find that aquatic systems are the largest source of methane globally with contributions from small lakes and coastal ocean ecosystems higher than previously estimated. We suggest that increased biogenic methane from aquatic ecosystems due to a combined effect of climate-feedbacks and human disturbance, may contribute more than expected to rising methane concentrations in the atmosphere.

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