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Aquatic greenhouse gas fluxes in a landscape perspective – a drop in the bucket or a tipping point?

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It is becoming increasingly clear that inland waters are not passive conduits to the oceans but rather environments with extensive production, consumption, and exchange of greenhouse gases (GHGs). There is increasing concern that freshwater GHG emissions in fact offsets large parts of the terrestrial net uptake of CO_2 equivalents that are commonly reported. This presentation will review what we (think we) know about inland water GHG exchange addressing magnitudes and variability of various fluxes, measurement methods, implications for landscape GHG balances, and discuss future challenges. Methane (CH4) and nitrous oxide (N2O) will be in focus, while carbon dioxide (CO_2) will be mentioned as well, although more briefly.