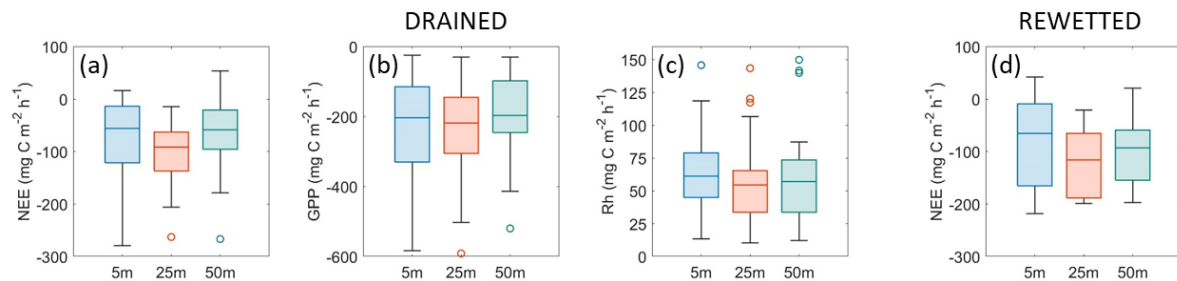
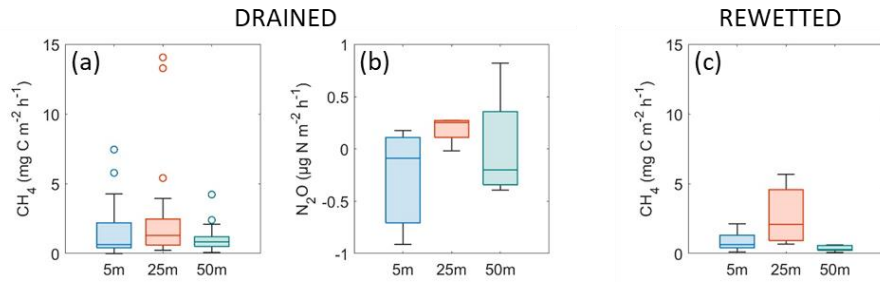


## APPENDIX

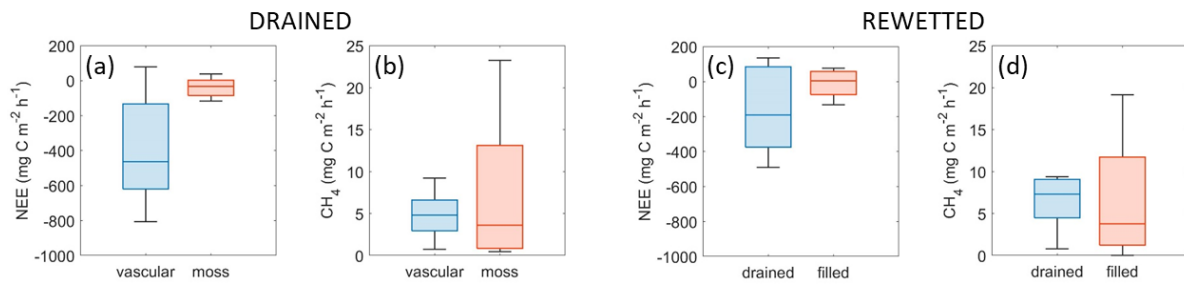
### Towards climate-responsible forestry: Assessing the greenhouse gas balances of drained and restored peatland forests in boreal Sweden



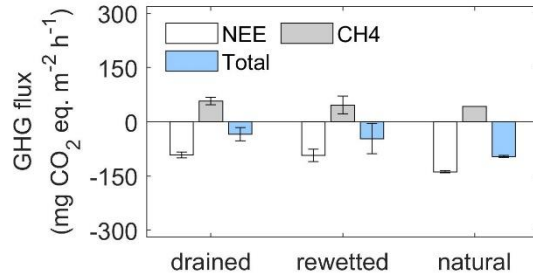
**Figure 1.** (a-c) Daytime measured net ecosystem CO<sub>2</sub> exchange (NEE), gross primary production (GPP) and heterotrophic respiration (Rh) at the drained peatland forest and (d) daytime measured NEE at the rewetted peatland forest site. Measurements were conducted along transects with sampling locations at 3 distances from the main drainage ditch (i.e. 5, 25 and 50 m) and the data shown are covering the period Aug 2018 to Aug 2021. Symbol clarification as follows: Line - median; Box - 25-75 percentile; Whiskers - min-max; Symbols - outliers. Negative values denote uptake by the ecosystem. (*unpublished data*)



**Figure 2. (a-b)** Daytime measured methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) fluxes at the drained peatland forest and **(c)** daytime measured CH<sub>4</sub> fluxes at the rewetted peatland forest site. Measurements were conducted along transects with sampling locations at 3 distances from the main drainage ditch (i.e. 5, 25 and 50 m) and the data shown is covering the period Aug 2018 to Aug 2021. Symbol clarification as follows: Line - median; Box - 25-75 percentile; Whiskers - min-max; Symbols - outliers. Negative values denote uptake by the ecosystem. (*unpublished data*)



**Figure 3.** Daytime measured net ecosystem  $\text{CO}_2$  exchange (NEE) and methane ( $\text{CH}_4$ ) emissions from vascular plants and moss plots in the main drainage ditch at the drained site in 2020 (a-b) and a comparison of NEE and  $\text{CH}_4$  fluxes in drained and filled ditches following rewetting in 2021 (c-d). Symbol clarification as follows: Line - median; Box - 25-75 percentile; Whiskers - min-max; Symbols - outliers. Negative values denote uptake by the ecosystem. (*unpublished data*)



**Figure 4.** Total greenhouse gas (GHG) balance based on daytime measured net ecosystem CO<sub>2</sub> exchange (NEE) and methane (CH<sub>4</sub>) emissions at the drained, rewetted and natural peatland sites when converted into CO<sub>2</sub> equivalents using the Global Warming Potential (GWP) metric (GWP of CO<sub>2</sub> = 1 CO<sub>2</sub>eq; GWP of CH<sub>4</sub> = 34 CO<sub>2</sub>eq over a 100-year time frame including carbon-climate feedbacks). Negative values denote uptake by the ecosystem. (*unpublished data*)