Table S 1. Annual mean values of climatic variables recorded by Eddy Towers for the temperate rainforest (TRF) and anthropogenic peatland (AP) and average values for the study period (2015-2022).

Year	R_n W m^{-2} TRF; AP	Albedo fraction TRF; AP	U m s^{-1} TRF; AP	RH % TRF; AP	VPD kPa TRF; AP	SWC m^3 m^{-3} TRF; AP	WTD m TRF; AP	Ts °C TRF; AP
2015	85.6; 67.8	0.14; 0.17	3.2; 1.6	83.0; 84.9*	0.25; 0.25	0.43; 0.37	0.33; 0.16	10.8; 11.2
2016	90.9; 70.9	0.13; 0.16	3.0; 1.4	82.8; 85.9	0.27; 0.25	0.43; 0.34	0.33; 0.16	10.8; 11.3
2017	83.2; 61.8	0.14; 0.17	3.3; 1.7	81.3; 84.7	0.27; 0.26	0.54; 0.46	0.16; 0.10	10.5; 11.4
2018	82.0; 63.3	0.14; 0.17	3.1; 1.6	83.6; 84.4	0.28; 0.33	0.42; 0.45	0.13; 0.11	10.1; 10.7
2019	82.0; 66.2	0.14; 0.18	3.1; 1.6	81.0; 83.5	0.28; 0.29	0.40; 0.44	0.18*; 0.15	10.2; 10.7
2020	87.6; 65.9	0.14; 0.18	3.2; 1.6	81.9; 85.3	0.27; 0.27	0.48; 0.45	0.23; 0.09	10.5; 10.8
2021	96.9; 76.4	0.14; 0.19	3.0; 1.5	82.1; 80.9	0.28; 0.32	0.43; 0.40	0.41*; 0.25*	10.6; 11.0
2022	80.0; 63.8	0.13; 0.17	3.1; 1.6	84.3; 76.7	0.23; 0.29	0.44; 0.39	-; 0.11	10.1; 10.4
Mean	86.1; 67.0	0.14; 0.17	3.1; 1.6	82.2; 78.9	0.27; 0.28	0.45; 0.41	0.25; 0.14	10.4; 11.0

R_n = net radiation; U = maximum wind speed in 30-minute data; RH = relative humidity; VPD = vapor pressure deficit; SWC = soil water content; WTD = water table depth; Ts = soil temperature. * Years that have several missing data, which long gaps could not be reliably filled by the MDS methodology, these years are not used to calculate the average and standard error of each variable.
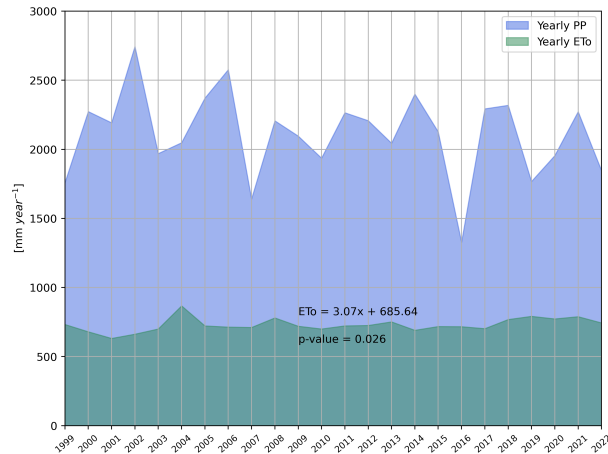
Figure S 1. Annual cumulative precipitation (PP) and Hargreaves potential evapotranspiration (ETo) measured at Senda Darwin meteorological station for the period 1999-2022. Significant increasing trend (P=0.026) for PET of about 3 mm per year, tested with Mann Kendall seasonal test.
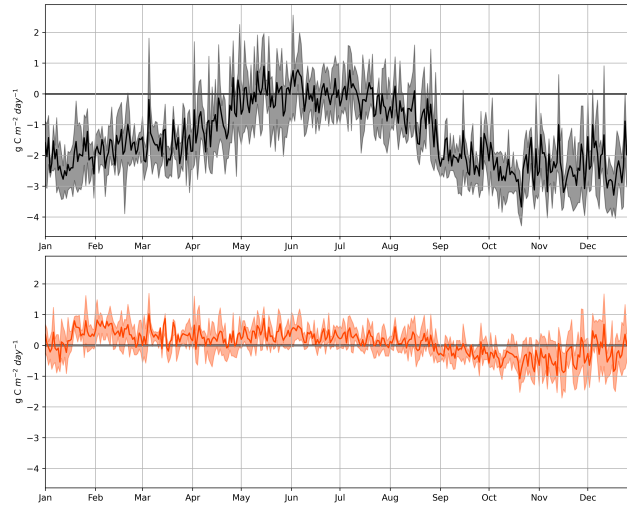
Figure S 2. Annual cycle of daily NEE at Senda Darwin Forest (black) and Senda Darwin Peatland (orange) for the period 2015-2022. The solid line indicates the daily mean, while the shadows show the daily values between percentiles 25 and 75.
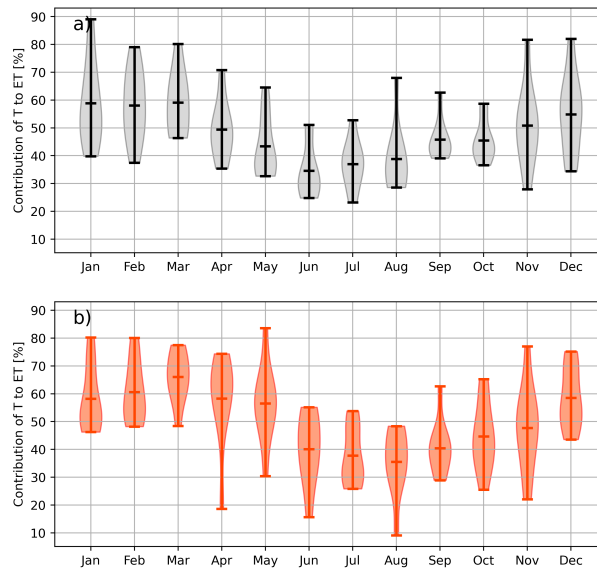
Figure S 3. Monthly contribution of transpiration to ET as a percentage in a) temperate rainforest and b) anthropogenic peatland, during the study period.