Article:

Cook, P.A., Betts, R.A., Burke, E.J. et al. (Accepted: 2026) Improving the representation of tropical peatland processes in the JULES land surface model using data from the Central Congo Basin. Philosophical Transactions of the Royal Society B: Biological Sciences. ISSN: 0962-8436 (In Press)

Representation of tropical peatland processes for the JULES land surface model Using data from the Central Congo Basin: Supplementary Information

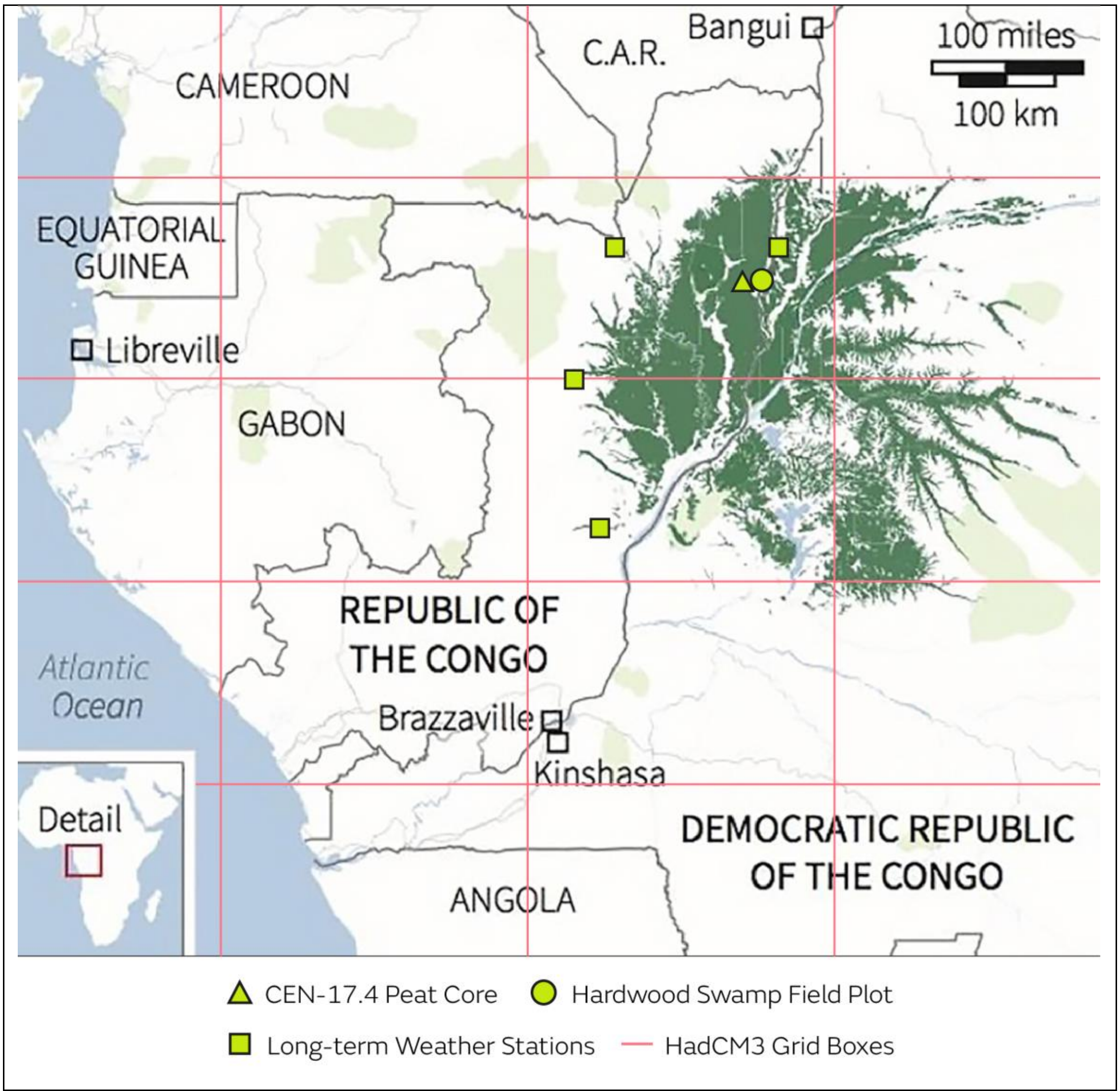

Figure S1: *The Cuvette Centrale swamp forest in the Central Congo Basin (CBB), the light green areas are those presently protected (left). With a simple map showing the locations of the CEN-17.4 peat core, the hardwood swamp field plot and the four long-term weather stations in relation to the swamp forest with peatlands, plus the grid of the HadCM3 palaeoclimate model (right).*

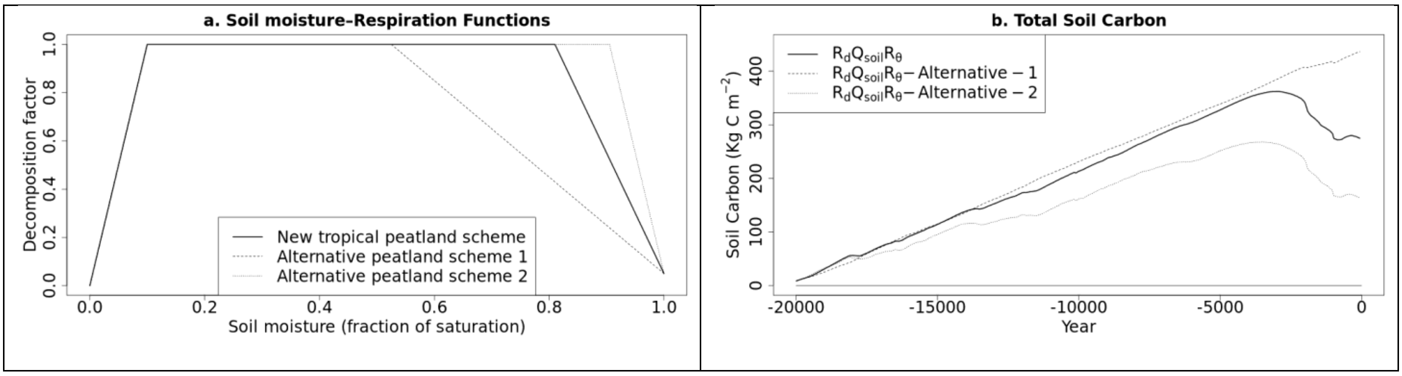

Figure S2: *Sensitivity of soil carbon accumulation to alternative decomposition functions. (a) Two alternative relationships between the decomposition factor and soil saturation fraction, compared to the relationship used in this study; (b) the effect of these different relationships on the evolution of total soil carbon.*

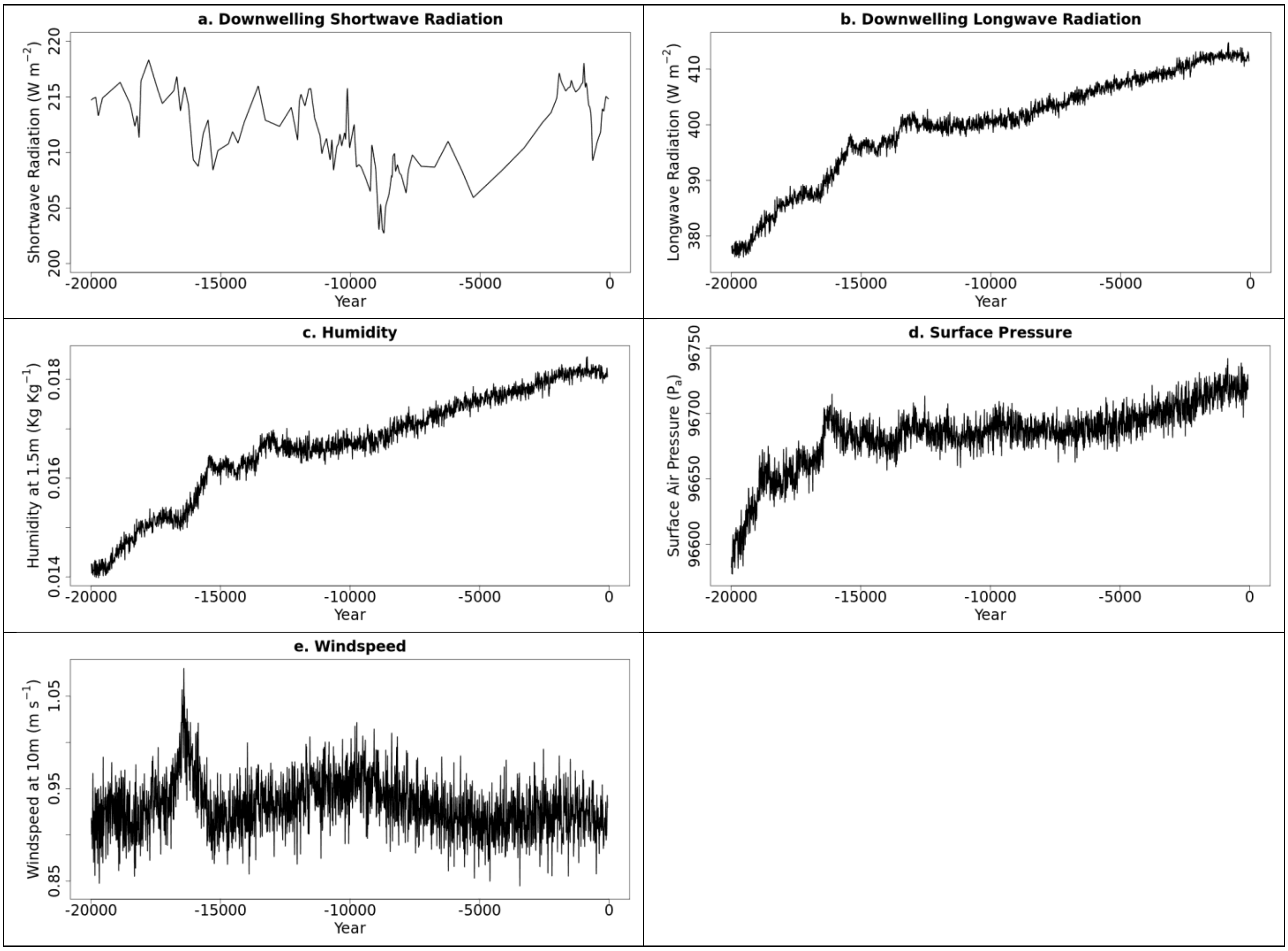

Figure S3: *Further palaeoclimatic driving variables used for all simulations: (a) downwelling shortwave radiation, (b) downwelling longwave radiation, (c) air humidity, (d) surface pressure and (e) windspeed at 10 m.*

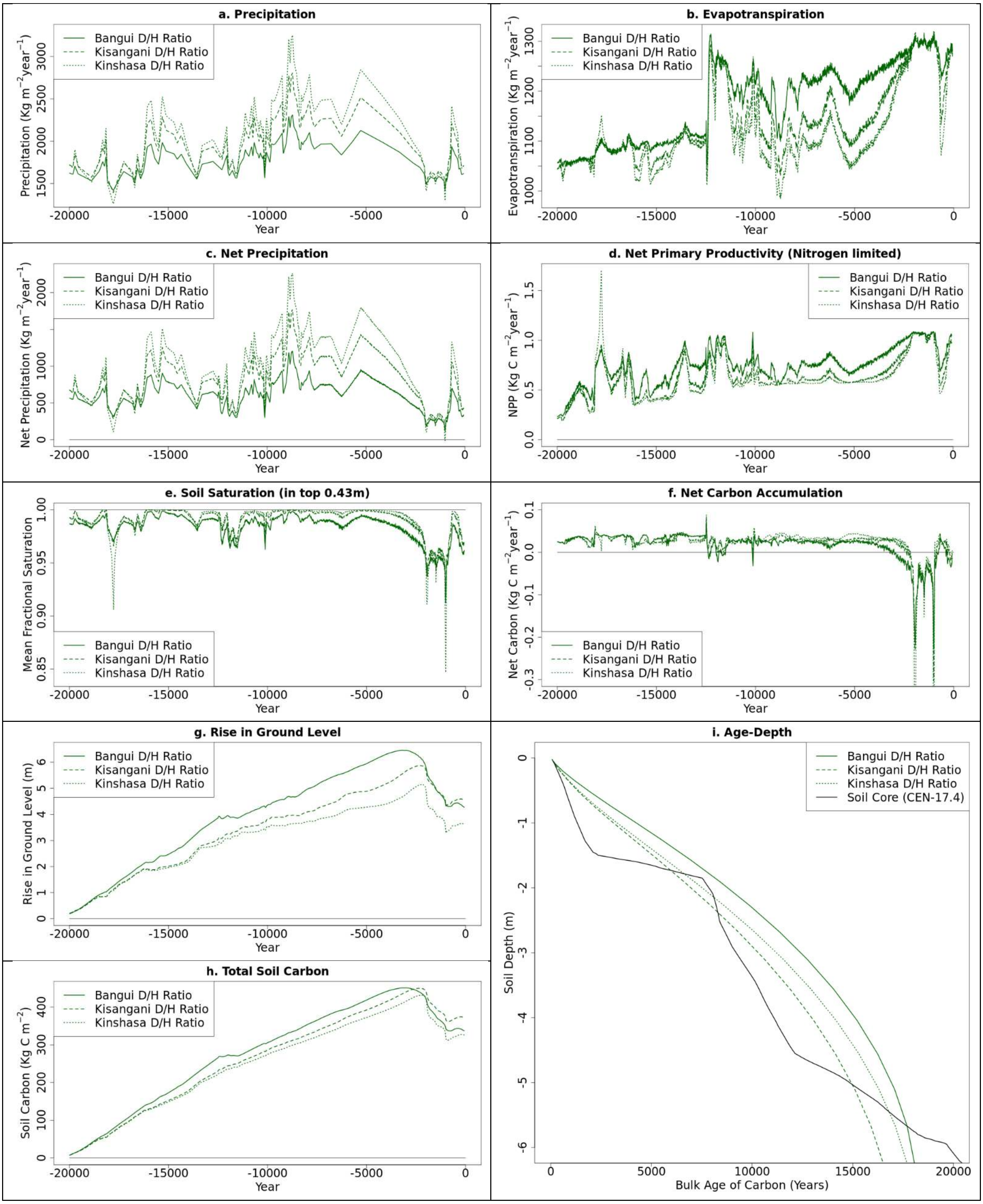

Figure S4: *(a) precipitation, (b) evapotranspiration, (c) net precipitation (precipitation minus evapotranspiration), (d) net primary productivity, (e) fractional soil saturation (top 0.43m), (f) net annual increase in soil carbon, (g) rise in the ground level and (h) total carbon in the soil from simulations using three different reconstructions of the paleo annual rainfall based on isotope ratio timeseries from the CEN-17.4 core and modern precipitation isotope values (D/H) from three locations: Bangui, Kisangani and Kinshasa (Garcin et al. (2022). Other aspects of the model setup were as in simulation $R_dQ_{soil}R_\theta$-grass. Also, (i) carbon bulk age profiles at the end of the three simulations, with radiocarbon dates obtained from the CEN-17.4 core.*