How long does carbon stay in a near-pristine central Amazon forest?

An empirical estimate with radiocarbon

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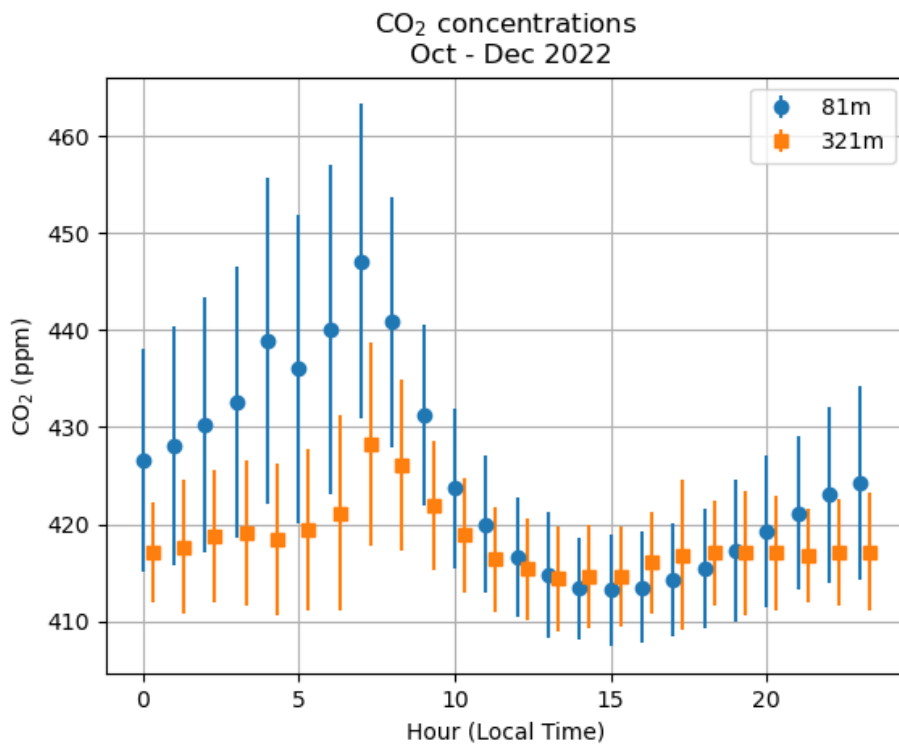
Supporting information

Figure S1. Average CO2 concentrations for the dry-to-wet transition period in 2022 (October to December) as measured at the Tall Tower at 81m (blue circles) and 321m (orange squares). The average daily variation at 81m was ~34 ppm, while the average daily variation at 321m was ~14 ppm.
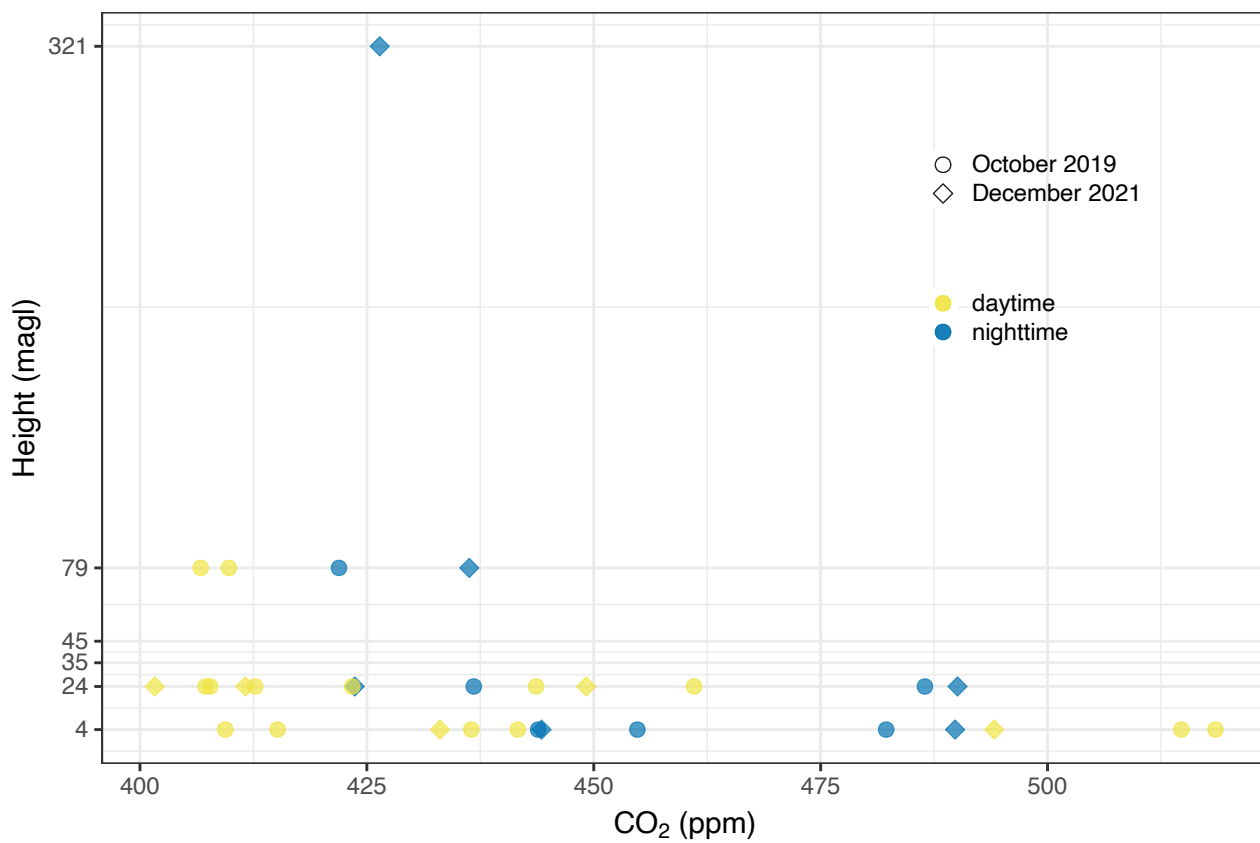
Figure S2. Variation of CO_2 concentrations with height for samples collected during daytime (after 5:45 LT and before 18:00 LT) and nighttime (between 18:00 LT and 5:45 LT). The error of CO_2 concentrations was not higher than 0.3 ppm.

Meteorological data

The values of the variables in 2019 (orange line) have changed a lot compared to 2021 (blue line). The temperature (Temp25 - at 25 m) was lower in 2021, probably because the incident short wave radiation (Sin) was lower. In addition, it rained more on both days in December 2021 and consequently, the soil was wetter (Hsoil). The vertical lines indicate the two days investigated in each experiment. The time indicates 10 days (4 days before and 4 days after the two days investigated).
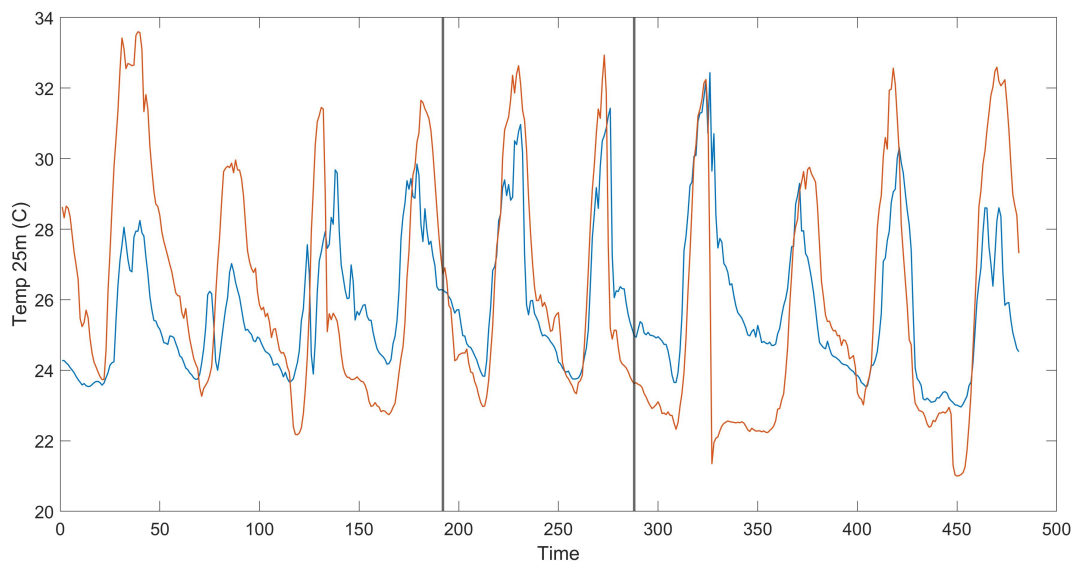

Figure S3. Variation of temperature (ºC) at 25 m above ground level at the 80-m walk-up tower, ATTO site. In 2019 data is represented in orange and in 2021 it is in blue. Vertical grey lines cover the 2 days of sampling plus and minus 4 days.
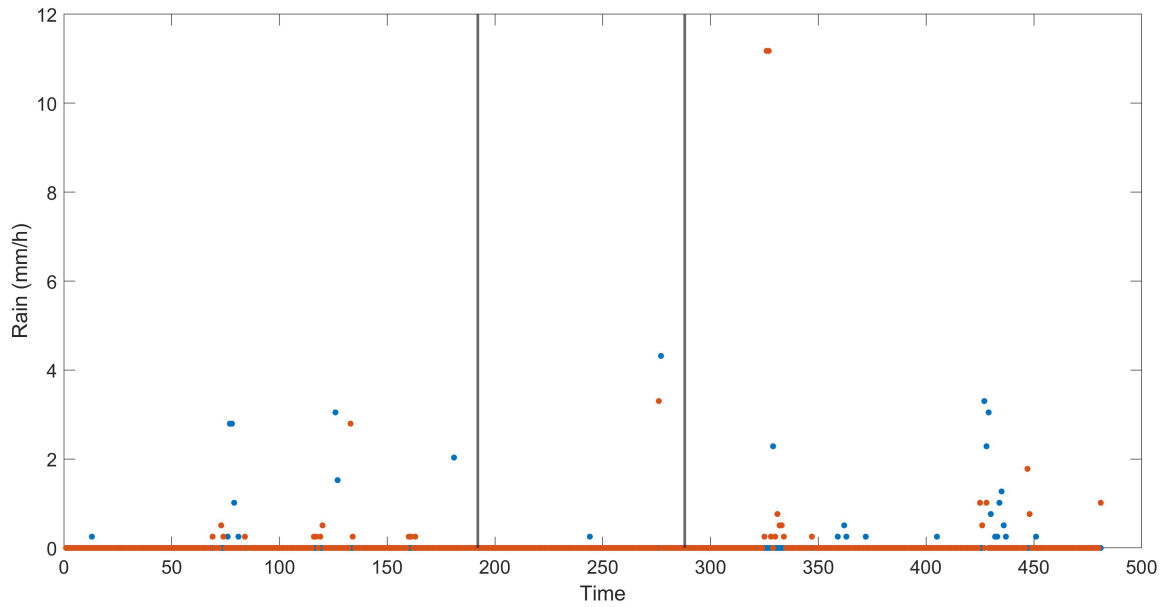
Figure S4. Precipitation patterns (mm/h) at ATTO site in 2019 (orange) and in 2021 (blue). Vertical grey lines cover the 2 days of sampling plus and minus 4 days.
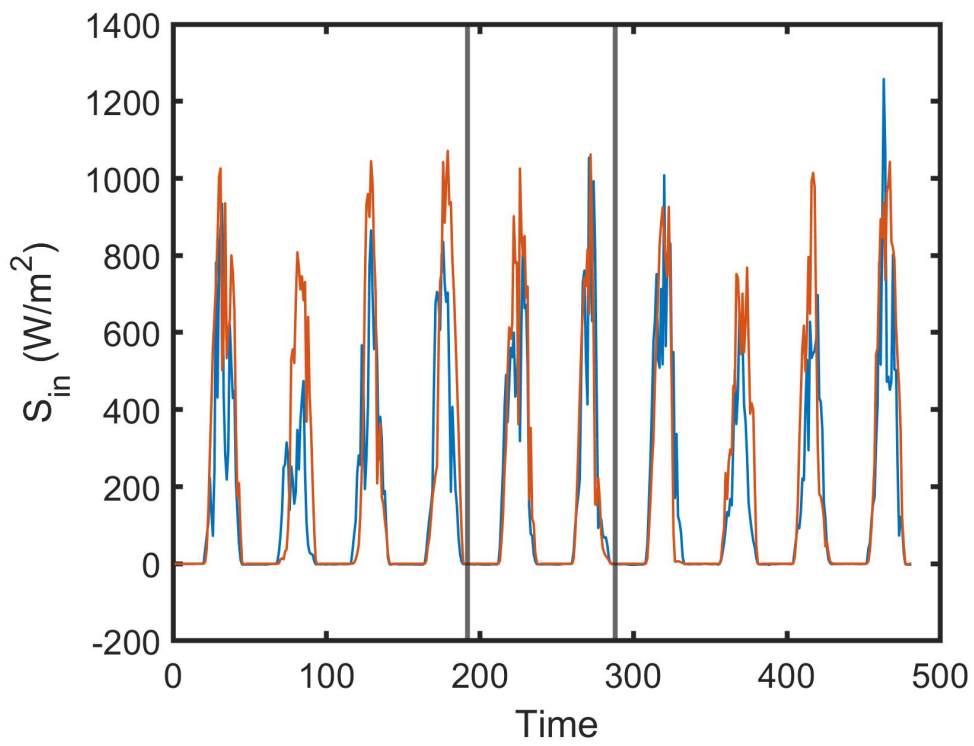

Figure S5. Incoming radiation S_{in} (W/m²) at ATTO site in 2019 (orange) and in 2021 (blue). Vertical grey lines cover the 2 days of sampling plus and minus 4 days.
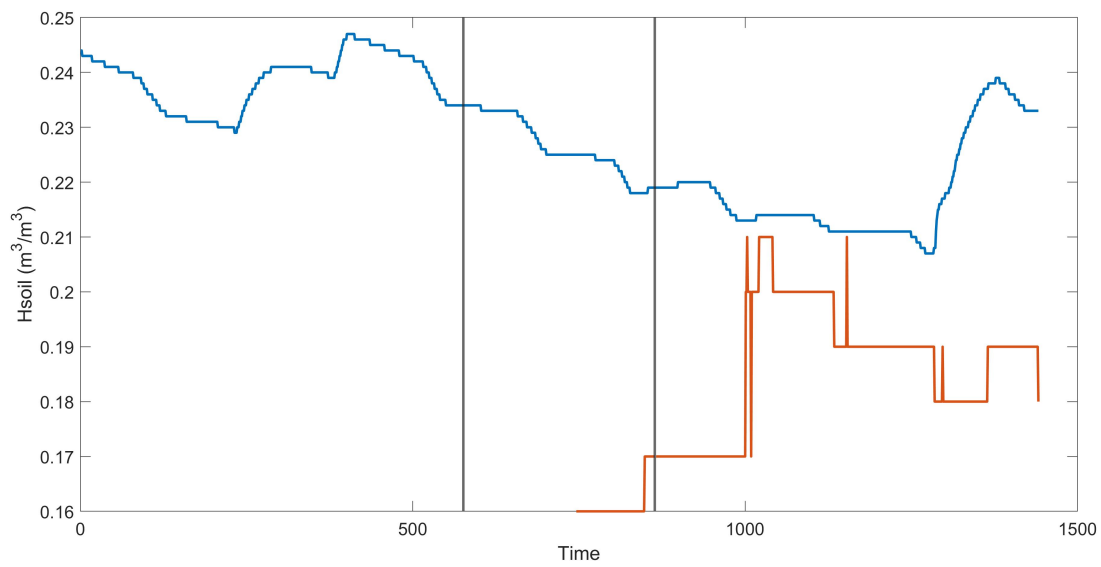
Figure S6. Soil moisture Hsoil (m³/m³) at ATTO site in 2019 (orange) and in 2021 (blue). Vertical grey lines cover the 2 days of sampling plus and minus 4 days.