Elevated CO_2 exacerbates peatland carbon loss under extreme drought and warming

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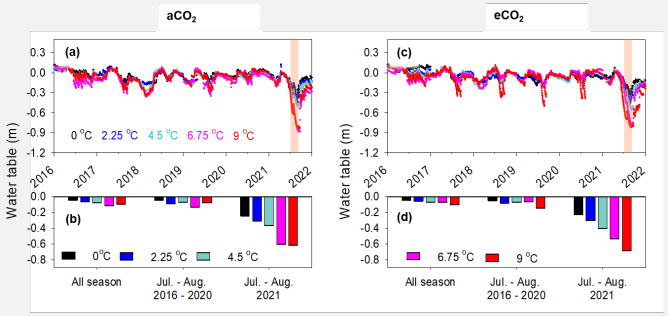
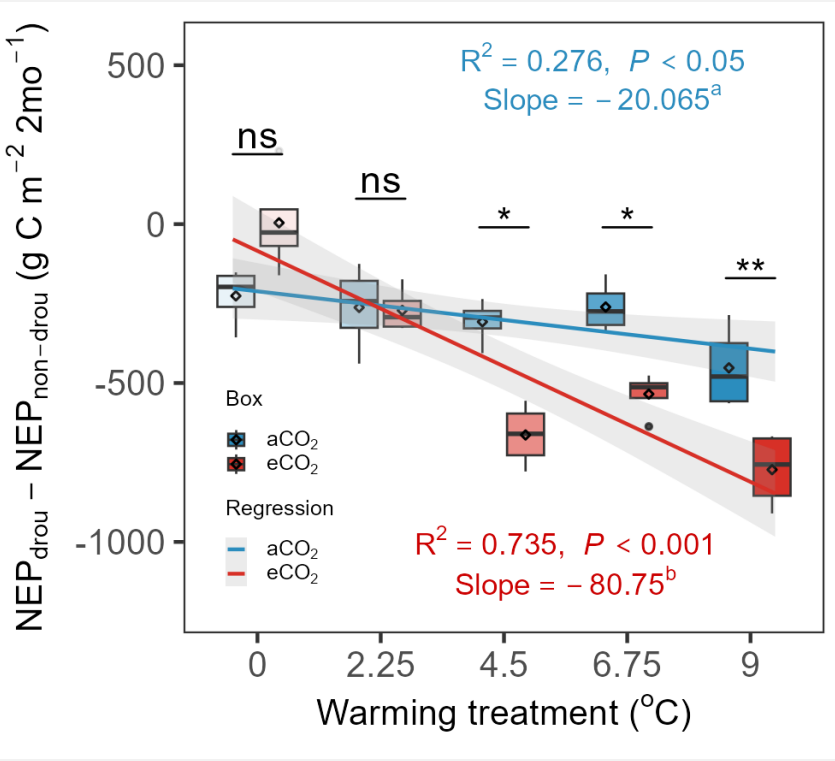
Question: How do extreme drought events influence ecosystem C cycling in a future world with higher temperatures and elevated CO_2 (eCO_2)?

Methods

CO_2: aCO_2, eCO_2 (+500 ppm)
Whole ecosystem warming: +0, +2.25, +4.5, +6.75 and +9°C

Extreme drought event in 2021





Key finding:

Warming and eCO_2 greatly exacerbated drought-induced C loss

Mechanisms

- Warming aggravated water table drawdown
- eCO_2 increased substrate availability