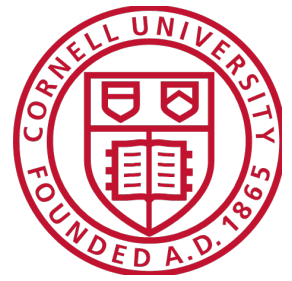




Elevated CO₂ alleviates positive feedback between warming and methane emissions in a peatland

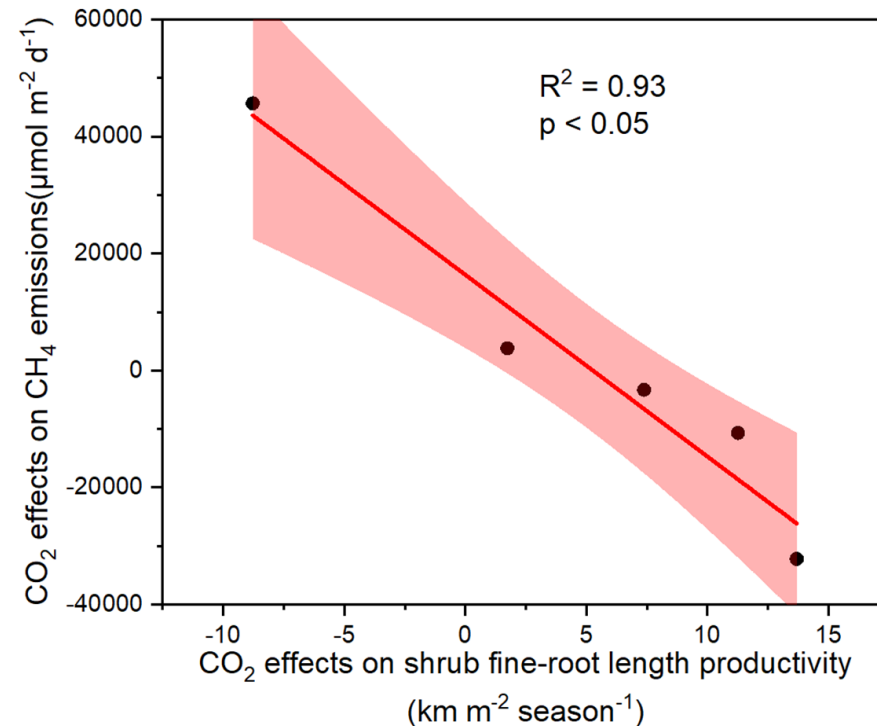
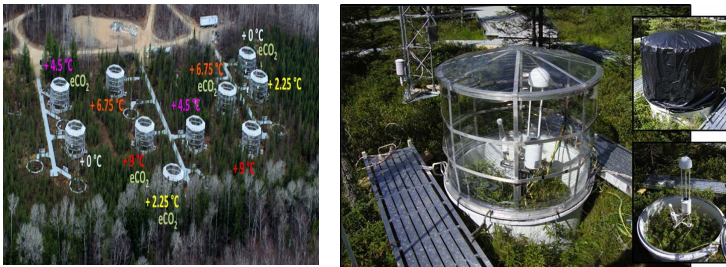


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□ Question: How do plant–microbe feedbacks regulate responses of peatland methane emissions to warming and eCO₂?

Methods

CH₄ flux: large-collar chamber
CO₂: aCO₂, eCO₂ (+500 ppm)
Whole ecosystem warming: +0, +2.25, +4.5, +6.75 and +9 °C



Key findings

Elevated CO₂ combined with warming reduced peatland CH₄ emissions but depend on fine-root length productivity.

Potential mechanism

Root traits modulate methane's response to global change by influencing soil redox conditions, which in turn regulate rhizosphere CH₄ oxidation processes.