

TITLE	WARMING INDUCES UNEXPECTEDLY HIGH SOIL RESPIRATION IN A WET TROPICAL FOREST
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ABSTRACT	<p>Tropical forests are a dominant regulator of the global carbon cycle, exchanging more carbon dioxide with the atmosphere than any other terrestrial biome. Climate models predict unprecedented climatic warming in tropical regions in the coming decades; however, in situ field warming studies are severely lacking in tropical forests. Here we present results from an in situ warming experiment in Puerto Rico, where soil respiration responses to +4 °C warming were assessed half-hourly for a year. Soil respiration rates were 42-204% higher in warmed relative to ambient plots, representing some of the highest soil respiration rates reported for any terrestrial ecosystem. While respiration rates were significantly higher in the warmed plots, the temperature sensitivity (Q_{10}) was 71.7% lower, pointing to a mechanistic shift. Even with reduced Q_{10}, if observed soil respiration rates persist in a warmer world, the feedback to future climate could be considerably greater than previously predicted or observed.</p>
LINK	https://www.nature.com/articles/s41467-025-62065-6