

Carbon Sink in Peninsular Malaysia Affected by Extreme Drought Events

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Abstract

Tropical forests serve as an important biome in the regulation of climate globally by exchanging atmospheric water and carbon. It is estimated that tropical forests contained 141–159 bil. tonnes C and sequester 0.47–1.3 bil. tonnes Pg C yr⁻¹ which is 8–13 % of anthropogenic CO₂ emitted globally. We found that the unlogged forests in Peninsular Malaysia gained 0.7 tonnes C ha⁻¹ yr⁻¹ (CI: 0.4 – 1.1), which decreased with the occurrence of the extreme drought event. However, there were no differences in total above-ground carbon density before and during/after extreme drought events. Our study showed that unlogged forests are vulnerable to extreme drought events by temporarily halting tree growth and increasing tree mortality.

Keywords: unlogged forest, drought effect, aboveground carbon density