

Fog induced suppressed photosynthetic water demand and foliar water uptake help the tropical cloud forest escape from drought stress

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Abstract

The importance of fog for the survival and growth of tropical cloud forests is receiving increasing interest in the context of climate change. Current knowledge on this topic is almost entirely based on studies at the species level, which can hardly reflect the response of the whole ecosystem to climate change. We evaluated community-level responses of trees and epiphytes to seasonal drought in Hainan tropical cloud forest ecosystem. We found that fog induced suppressed photosynthetic water demand and foliar water uptake help these forests escape from drought. We infer that reduction in fog due to future climate change may result in high plant mortality in these ecosystems, and artificially simulating fog may help save tropical cloud forests from vanishing worldwide.

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