

Termites mitigate the effects of drought in tropical rainforest

ABSTRACT

Termites perform key ecological functions in tropical ecosystems, are strongly affected by variation in rainfall, and respond negatively to habitat disturbance. However, it is not known how the projected increase in frequency and severity of droughts in tropical rainforests will alter termite communities and the maintenance of ecosystem processes. Using a large-scale termite suppression experiment, we found that termite activity and abundance increased during drought in a Bornean forest. This increase resulted in accelerated litter decomposition, elevated soil moisture, greater soil nutrient heterogeneity, and higher seedling survival rates during the extreme El Niño drought of 2015–2016. Our work shows how an invertebrate group enhances ecosystem resistance to drought, providing evidence that the dual stressors of climate change and anthropogenic shifts in biotic communities will have various negative consequences for the maintenance of rainforest ecosystems.