

Poster #1-53**Global Drivers of Vegetation Mortality**

Nate McDowell^{1*} and colleagues

¹Pacific Northwest National Laboratory, Richland, WA

Contact: nate.mcdowell@pnnl.gov

BER Program: TES

Project: NGEE-Tropics

Project Website: <https://ngee-tropics.lbl.gov/>

Tree mortality is rising in the tropics and throughout the globe, with implications on the carbon cycle and climate forcing. However, we do not yet understand the causes of this rising mortality, precluding us from mechanistic prediction under future climate. In this presentation, I will review our state-of-the-knowledge regarding the drivers and mechanisms of tree mortality with a focus on the tropics, while also extending our inference to the globe. Changes in atmospheric conditions such as rising CO₂, temperature, and VPD are plausible explanations for the global mortality rise. Mitigation mechanisms exist by which mortality may be buffered by increasing growth, but the number of mortality drivers outweighs those driving increased growth, casting doubt on the strength of the future forest carbon sink. The path forward to better understanding and simulation is highlighted.