TITLE	**RESPIRATORY ACCLIMATION OF TROPICAL FOREST ROOTS IN RESPONSE TO IN SITU EXPERIMENTAL WARMING AND HURRICANE DISTURBANCE**
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ABSTRACT	Climate projections predict higher temperatures and more frequent hurricanes in the tropics. Tropical plants subjected to these stresses may respond by acclimating their physiology. We investigated tropical forest root respiration in response to in-situ experimental warming and hurricane disturbance in eastern Puerto Rico. We measured mass-normalized root specific respiration, root biomass, and root traits at the Tropical Responses to Altered Climate Experiment (TRACE), where understory vegetation is warmed + 4 °C above ambient. Our measurements span 5 years, including before and after two major hurricanes, to quantify root contributions to ecosystem carbon fluxes. Experimental warming did not affect root specific respiration at a standard temperature of 25° (RSR25, mean = 3.89 nmol CO2 g-1 s -1) or the temperature sensitivity of root respiration (Q10, mean = 1.75), but did result in decreased fine-root biomass, thereby decreasing area-based estimations of ecosystem-level root respiration in warmed plots by ~ 35%. RSR25 of newer roots, which increased with increasing root nitrogen, showed greater rates 6 months after the hurricanes, but subsequently decreased after 12 months. Root specific respiration did not acclimate to higher temperatures, based on lack of adjustments in either Q10 or RSR25 in the warmed plots; however, decreased root biomass indicates the root contribution to soil carbon dioxide efflux was overall lower with warming. Lower root biomass may also limit nutrient and water uptake, having potential negative effects on carbon assimilation. Our results show that warming and hurricane disturbance have strong potential to affect tropical forest roots, as well as ecosystem carbon fluxes
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