

TITLE **WARMING INCREASES ACTIVITY IN THE COMMON TROPICAL FROG *ELEUTHERODACTYLUS COQUI***

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AUTHORS Hawley Matlaga, T.J., P.A. Burrowes, R. Hernández-Pacheco, J. Pena, C. Sutherland, and T.E. Wood

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2

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ABSTRACT Tropical ecosystems are expected to experience climate warming, with predicted increases in drying and heat extremes in the coming years. Understanding how these changes will affect terrestrial vertebrates such as amphibians is limited. The Tropical Responses to Altered Climate Experiment in the Luquillo Experimental Forest in northeastern Puerto Rico allows us to study how the tropical forest responds to warming within a replicated plot design. From September 2018 to August 2019, we used mark-recapture sampling to investigate how the spatial population ecology of the common coqui frog (*Eleutherodactylus coqui*) is impacted by experimentally increasing surface temperatures by 4 °C above ambient. We compared estimates of baseline detection, space use, and the density of frogs in control and warmed plots. Coqui space use and population density did not differ between control and warmed plots. However, coqui detection probabilities were higher in warmed plots, suggesting an increased level of activity relative to individuals in the control (unwarmed) plots. Frog detection increased in all plots with increased precipitation. Our results suggest that, at least in the short-term, the density of an ecological generalist frog like *E. coqui* does not change as a response to increased surface temperatures. However, short-term responses to warming such as changes in behavior may lead to changes in population dynamics in the long-term. Our research highlights the need to consider multiple responses in order to understand the effects of climate warming on tropical vertebrates.

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