Department of Ecology and Evolutionary Biology

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January 16, 2016

To the editors,

Please find enclosed a manuscript entitled: "Can trait patterns along gradients predict plant community responses to climate change?" for publication as an article in *Ecology*. The contents of this manuscript include an analysis of original data and the authors confirm that the manuscript has not been published, is not being considered for a journal elsewhere, and has not been previously submitted to *Ecology*.

Understanding and predicting plant community response to climate change is an important challenge for this century of ecologists. With this in mind, our paper combines observational data, experimental data, and simulation-based null model predictions to rigorously test a common assumption in climate change research: that spatial associations between plant species and climate can be used to forecast future plant community response to climate. Using a trait-based approach, we show that while spatial associations between plant traits and broad-scale climate variables can be predictive of community response to climate change, they are not always so. Notably, we also show that traits related to plant architecture were better predictors of species response than more commonly used traits related to growth. Our methodological approach and results are likely to be of interest to a broad readership, especially those interested in the potential for trait-based approaches to provide quantitative predictions of future ecological response to environmental change.

Thank you for your consideration of our work. Please address all correspondence concerning this manuscript to me at University of Michigan (guittarj@umich.edu).

Sincerely,

John Guittar

​NSF Graduate Research Fellow​

Ph.D. Candidate | University of Michigan Ann Arbor

Department of Ecology and Evolutionary Biology