

# RESPONSES OF SAVANNA TREE SPECIES TO CLIMATE CHANGE

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My research interests are on the impacts of global changes on biodiversity. My previous work, conducted through the course of my MSc at the University of eSwatini looked at impacts of agriculture on bat community composition and activity levels in the small kingdom. Upon starting my PhD, my interests have grown, and my research expanded into new territories. My current research not only investigates land use impacts but also how biodiversity is responding to climate change, more specifically, savanna tree species.

Global climate change is altering the conditions that make savanna systems possible. The climate changes occurring in savanna are moving at rates faster than projected for most of the world's biomes ( $\leq 1\text{km/year}$ ). As a result most protected areas that are currently savannas are expected to

lose their ability to maintain most savanna vegetation in less than a hundred years. In response to these projected climate changes plant species will either shift their distribution to match climate conditions, die, or adapt. Accordingly, there is an urgent need to understand the factors that permit or hinder the distributions of plants under current climatic conditions. My research approach uses a suite of functionally diverse big trees: marula, leadwood and knobthorn tree species to investigate the factors that could inhibit or promote the ability of large savanna tree species to move with their suitable climates.

In summer 2018 I worked between the Laboratory of Molecular Systematics & Evolutionary Genetics (Soltis lab) and the Conservation Genetics & Molecular Ecology lab (Austin lab), both at UF. I spent most of my summer in the lab,

grinding up marula leaf tissue samples and extracting genetic material, in preparation for sequencing and subsequent analysis. The leaf material was collected in eSwatini during the summer field season in 2018. The extractions and lab work were successfully completed with the assistance and dedication of Victoria Stevenson, a senior in Biology. I conducted one final field season in eSwatini, during December 2018-January 2019, followed by more lab work and analysis. I am enjoying the journey and looking forward to the final outcomes of the research.

*Fezile Mtsetfwa is a PhD candidate in the School of Natural Resources & Environment and the Department of Wildlife Ecology & Conservation. Funding provided by the Jeanne and Hunt Davis Graduate Travel Fund, the Center for African Studies, and the Office of Research.*

