Modeling the Population Dynamics of Imperiled *Guzmania monostachia* Populations

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Guzmania monostachia are large, long-lived bromeliads whose leaves grow in a rosette pattern and are native to the Americas, but endangered in Florida due to damage caused by the invasive weevil *Metamasius calizona*. Each *G. monostachia* rosette can reproduce sexually via flowers or asexually by producing clonal offshoot rosettes. We model the population dynamics and demographic structure of a *G. monostachia* population using a Lefkovitch matrix model where each state represents a demographic class of rosettes. Model analysis over a range of uncertain parameters show the conditions under which a *G. monostachia* population is viable in the absence and presence of *M. calizona*, and the expected demographic structure under those conditions.