

Spatio-Temporal Ecological Modeling of Water Hyacinth Environment on the Performance of a Biological Control Agent. Emily Bick*, UC Davis, enbick@ucdavis.edu; Christian Nansen, UC Davis, chnansen@ucdavis.edu

To investigate the mechanisms of water hyacinth (*Eichhornia crassipes*) control, an efficient Bayesian model system is required. Although deterministic models have been used to predict organism control, such models suffer from the inability to account for stochasticity in a system. Entomologists and conservationists in related fields have offered multidisciplinary and multi-institutional computer modeling programs to optimize success of biological control agents. In view of the success of such models, it was decided to provide an up to date and comprehensive spatio-temporal ecological model of water hyacinth environment on the performance of a biological control agent. The first section of this presentation details the selection of the salient variables for spatio-temporal ecological models. The second section contains information dealing with biological control (Coleoptera: Curculionidae *Neochetina bruchi*) and weed interactions. The third section provides the results of a test of the model.

Keywords: Water Hyacinth, *Neochetina bruchi*, spatio-temporal modeling