1056-92-985 **Judith E Canner*** (jecanner@ncsu.edu), Biomathematics Graduate Program, North Carolina State University, Box 8203, Raleigh, NC 27695, and **Robert R Dunn**, **Itamar Giladi** and **Kevin Gross**. *The consequences of ant behavior for the spatial population dynamics of a southern wildflower.*

Myrmecochory (dispersal of seeds by ants) is an evolutionarily and ecologically common mutualism. Most of the research on the costs and benefits of myrmecochory in North America assumes that ant-dispersed seeds are taken to, and left in, the ant nest. We have shown that seeds are often secondarily redispersed from the nest into the surrounding leaf litter. Here, we use a spatially explicit model of stage-structured population dynamics to assess the influence of secondary dispersal on spatial population dynamics. The model is a discrete-time, continuous-space model that uses an integrodifference equation to incorporate nonparametric measures of primary and secondary seed dispersal. Model analysis shows that secondary dispersal of seeds increases population spread rate by 28% and nearly doubles mean dispersal distance from the parent plant. These results demonstrate that dispersal from the parent is a primary benefit of myrmecochory in eastern North American forests. We also discuss adapting our model to investigate the possible affects of climate change on ant foraging behavior and the consequent changes in plant population fitness and spatial population dynamics. (Received September 19, 2009)