

1156-92-411

Elizabeth E Crone* (elizabeth.crone@tufts.edu), Department of Biology, Tufts University, Medford, MA, **Natalie Z Kerr**, Department of Biology, Duke University, Durham, NC, **Rosemary L Malfi**, Biology Department, University of Massachusetts, Amherst, MA, and **Neal M Williams**, Department of Entomology, University of California, Davis, CA. *Transient dynamics in bumble bee colony growth.*

In structured populations of plants and animals, populations grow at a constant rate once they reach a stable stage distribution. Transient dynamics refer to how changes in stage structure affect short-term population dynamics. Although a number of ecological population models have explored properties of transient dynamics, their importance has rarely been tested in experiments. We propose that bumble bee colony growth is an excellent model system for studying transient dynamics of structured populations. We demonstrate this utility using colonies of the common western bumble bee, *Bombus vosnesenskii*. We explore empirically based models of transient dynamics and compare model predictions to experimental manipulation of resource pulses that affect both colony growth rates and stage structure. Models and experiments produce broadly concordant results, suggesting a number of directions for future mathematical and empirical research. (Received January 28, 2020)