1163-92-1486 **Rachel R. Harman*** (rachel_harman@outlook.com) and **James T. Cronin**. *Empirically assessing density-dependent emigration within fragmented environments using insects.*

Habitat fragmentation creates smaller habitable patches often separated by a more hostile matrix. In this landscape, dispersal is a fundamental process that generates a metapopulation network and range expansion. An individual's decision to emigrate from its habitat may be influenced by the conspecific density, which, in small patches, may affect population persistence. Empirical studies have often ignored nonlinear forms of density-dependent emigration (DDE) by utilizing methods that include few densities, a small range of densities, or statistics that preclude a nonlinear term. Here, we assessed the emigration of insects, including Ischnodemus falicus, a gregarious marsh bug, using mark-release-recapture techniques. Forty releases that ranged from 3 to 180 individuals (twice the highest density observed in the field) were conducted. The resulting DDE form was non-linear negative, suggesting a u-shaped response curve that would not have been observed with a smaller density range; however, highly dense populations may be created as a consequence of habitat fragmentation. Although it can be difficult, using empirical methods that allow for different forms of DDE to be quantified will improve conservation efforts by better identifying populations at risk of extinction. (Received September 15, 2020)