

1109-35-123

Bingtuan Li* (bing.li@louisville.edu), Department of Mathematics, University of Louisville, Louisville, KY 40292, and **Sharon Bewick, Jin Shang** and **William F Fagan**. *Persistence and spread of a species with a shifting habitat edge.*

We discuss a reaction-diffusion model that describes the growth and spread of a species along a shifting habitat. It is assumed that the linearized species growth rate is positive near positive infinity and is negative near negative infinity. We show that the persistence and spreading dynamics depend on the speed of the shifting habitat edge c and a number c^* that is determined by the maximum linearized growth rate and the diffusion coefficient. We demonstrate that if $c > c^*$ then the species will become extinct in the habitat, and that if $c < c^*$ then the species will persist and spread along the shifting habitat gradient at an asymptotic spreading speed c^* . (Received January 27, 2015)