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Jerome Goddard II, Quinn A. Morris* (quinnamorris@gmail.com), **Catherine Payne** and **R. shivaji**. *Steady states for classes of reaction-diffusion equations with U-shaped density dependent dispersal on the boundary.*

We consider positive solutions to nonlinear elliptic partial differential equations with nonlinear boundary conditions which model the population dynamics in a habitat when the population exhibits U-shaped density dependent dispersal on the boundary. We analyze the persistence of the population (existence, non-existence, uniqueness and multiplicity of positive solutions) as the patch size and the hostility of the outside matrix vary. We obtain results in one spatial dimension via a quadrature method, and in higher spatial dimensions by the method of sub-super solutions. (Received May 01, 2017)