1077-34-1293   **Kathryn Lois Ashley*** (`klashle@clemson.edu`), **Jerome Goddard II** (`jgoddard@aum.edu`) and **Victoria Sincavage** (`vsincav@g.clemson.edu`). *Ecological Systems, Nonlinear Boundary Conditions, and Σ-Shaped Bifurcation Curves.* Preliminary report.

We examine a one dimensional reaction diffusion model with a weak Allee growth rate that appears in population dynamics. Noteworthy, we combine grazing along with a certain nonlinear boundary condition that models negative density dependent dispersal on the boundary and analyze the effects on the steady states. In particular, we examine the bifurcation curves of positive solutions as the grazing parameter is variegated. Our results are acquired through the adaptation of a Quadrature method and Mathematica computations. Specifically, we computationally ascertain the existence of Σ-shaped bifurcation curves with at least twelve positive steady states for a certain range of the grazing parameter. (Received September 18, 2011)