

1044-49-11

Wandi Ding* (wding@mtsu.edu), MTSU Box 34, Department of Mathematical Sciences, Murfreesboro, TN 37132, and **Heather Finotti, Suzanne Lenhart, Yuan Lou** and **Yuquan Ye**. *Optimal Control of Growth Coefficient on a Steady State Population Model.*

We study the control problem of maximizing the net benefit in the conservation of a single species with a fixed amount of resources. The existence of an optimal control is established and the uniqueness and characterization of the optimal control are investigated. Numerical simulations illustrate several cases, for both one- and two-dimensional domains, in which several interesting phenomena are found. Some open problems are discussed. (Received June 02, 2008)