962-35-860 **Ratnasingham Shivaji*** (`shivaji@ra.msstate.edu`), Department of Mathematics, Mississippi State University, P.O. Drawer MA, Mississippi State, MS 39762. *An Existence Result for a Population Model with Constant Effort Harvesting.*

We establish an existence result for positive solutions to a semipositone problem, namely the steady state reaction diffusion model

$$-\Delta u \;=\; au - bu^2 - h(x); \quad \Omega$$
$$u \;=\; 0; \quad \partial\Omega$$

where Δ is the Laplacian, Ω is a bounded region in $\mathbb{R}^n$; $n \geq 1$ with smooth boundary $\partial\Omega$, a, b are positive constants, and $h(x)$ is a non-negative function representing the harvesting of the population. In particular, we study the obstacle problem of finding a solution $u(x) \geq h(x)$ in $\bar{\Omega}$. We establish our result via the sub-super solutions method.