

1135-92-1507 **Alan Hastings*** (amhastings@ucdavis.edu). *Simple approaches to manage natural systems when density dependence can be ignored.*

I will review simple models that describe how to determine optimal approaches for managing natural systems when density dependence can be ignored. In this case, one very useful approach is to approximate the dynamics by linear discrete time models. Then, ideas based on linear programming can be used. I will consider applications to control of invasive species and when there are multiple objectives. The importance of restricting possible actions to match biological limitations will be emphasized. The approximations used will be shown to be robust by considering more general optimization methods and the role of stochasticity. (Received September 22, 2017)