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**Alyson Deines\*** (aly@ksu.edu), **Ellen Peterson\*** (s06.epeterson@wittenberg.edu) and **Richard Ryan\*** (rryan@mail.uri.edu). *Robustness and Transients Applied to Harvesting Peregrine Falcon Populations, Preliminary report.*

Plants and animals recently removed from the endangered species list are still vulnerable to decline in their population. However, there is a demand for harvesting some animals for food, game, and other reasons. In order to fulfill this demand while maintaining positive population growth, we examined the maximum possible percentage of harvest for one case study, peregrine falcons. US Fish and Wildlife Services have recently begun to allow minimal harvesting of peregrine falcons as they are no longer on the endangered species list. Due to the imprecise nature of data collected for animal populations, there is a need for a model which takes into account this error when determining how many may be harvested. We create such a population projection matrix model and apply the mathematical tools of robustness and transient analysis. (This research was carried out at the University of Nebraska-Lincoln REU in Applied Mathematics.) (Received August 30, 2005)