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Jeff Sharpe* (jsharpe@knights.ucf.edu). *Population dynamics for stray cats.*

We formulate and analyze a mathematical model which describes the population dynamics of feral cats. The model includes three categories: kittens, adult female and adult males. Kittens are born at a rate proportional to the adult female population. Adults compete both with members of their own sex and members of the opposite sex for resources. A net reproduction number R_0 is defined. If $R_0 < 1$, then the population goes extinct. If $R_0 > 1$, then the population can persist at a positive and locally asymptotically stable equilibrium. Extensions to the model include the movement of adult males in a spatial habitat and the spread of feline leukemia. These extensions will be mentioned. The results presented here represent joint work with Dr. Andrew Nevai. (Received September 22, 2015)