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Title of Talk: The Effects of a Constant Alternative Food Source on Ecosystems With One Predator and One Prey

Abstract:

In this presentation, long term behaviors of a predator-prey model in which the predator has a varying amount of one main prey and a constant amount of alternative prey are considered. In the case of the 1950's invasion of the brown tree snake *Boiga Irregularis* on Guam, the varying prey is the native population of birds and reptiles and the domesticated animals are the constant alternative food source. The model of this situation is loosely based on the devastation of indigenous species on Guam. Through singular orbit analysis, conditions can be given to determine which of these long-term outcomes, either coexistence or extinction of one or more species, will occur for a given initial condition for the equation.