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Coexistence, extinction, and optimal harvesting in discrete-time stochastic population models.

We analyze the long term behavior of interacting populations which can be controlled through harvesting. The dynamics is assumed to be discrete in time and stochastic due to the effect of environmental fluctuations. We present extinction and coexistence criteria when there are one or two interacting species. We then use these tools in order to see when harvesting leads to extinction or persistence of species, as well as what the optimal harvesting strategies, which maximize the expected long term yield, look like. (Received January 22, 2020)