An eco-epidemiological model with general functional response of predator to prey

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Abstract

We consider a nonautonomous eco-epidemiological model with general functions for predation on infected and uninfected preys as well as general functions associated to the vital dynamics of the susceptible prey and predator populations. We obtain persistence and extinction results for the infected prey based on assumptions on auxiliary systems constructed from the disease-free system. We moreover consider an iterative process that can improve the extinction results. We apply our results to general eco-epidemiological models that include several examples existent in the literature.

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