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A temperature driven difference equation model with stage-structured for the abundance of culex mosquitoes

The culex mosquitoes are the vector for West Nile virus. The development and distribution of such mosquitoes are closely related to weather, in particular the daily temperature and precipitation. In this talk, I will introduce a temperature driven difference equation model with stage-structure to describe the development and the abundance of culex mosquitoes. I will introduce some basic dynamical properties of the model. In the end, I will present the application of the model in Peel region Ontario which shows a reasonable match with the surveillance data from the region. This is a joint work with Lie Wang.