

1100-92-46

Carrie A Manore* (cmanore@tulane.edu), **Louis Bergsman** and **James Hyman**. *Modeling the Relative Role of Migrant and Resident Bird Populations on West Nile Virus Transmission.*

West Nile virus (WNV) is a mosquito-borne infectious disease that spreads primarily in birds, although humans are also susceptible and infection can lead to serious complications. We present a hybrid multi-host seasonal model for WNV spread in resident and migrant bird species. We explore differences in host competence and mosquito feeding preference between bird species. When the migrant bird species is a competent host with lower death from disease than the resident species, our analysis shows that the migratory birds play an important role in supplying susceptible hosts and driving the significant seasonal upswings in WNV, even if they don't arrive initially infected. We find that time-dependent parameters such as variation in bird community composition over time, local mosquito dynamics, weather, and relative susceptibility of birds can lead to varying risk between years. (Received January 22, 2014)