

1106-VL-1200 **Mary O’Driscoll*** (odriscol.mary@uwlax.edu), UW-L Mathematics Department, La Crosse, WI 54601, and **James Peirce**. *Investigating the Dependence of Transmission Rate to Water Temperature in a Host-Parasite System*. Preliminary report.

Every year, thousands of waterfowl around the upper Mississippi River are dying from parasites transmitted to them through an invasive species of snail. The parasite species exhibit temperature-dependent transmission patterns with no transmission occurring when temperatures either fall below or exceed certain thresholds. The transmission window overlaps the waterfowl’s seasonal migrations. The purpose of this study was to determine how the temperature of the water affects the transmission rate of the parasite. First, we moved the range and the location of the temperature window for parasite transmission. Second, we created an algorithm that defined the transmission parameters based upon the length of time temperature spends above or below a known threshold. In both studies, the size of the infected host populations depended on the temperature window and accrued time. Results reinforce biological observations and emphasize why it is important to study transmission at various temperatures in the laboratory. (Received September 11, 2014)