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James P Peirce* (jpeirce@uwlax.edu), La Crosse, WI 54602, and **Greg Sandland** and **Mary O'Driscoll**. *Outbreak of waterfowl disease in the Upper Mississippi River: Analysis of a stochastic temperature-driven model*. Preliminary report.

For the past decade, thousands of migrating waterfowl have died after consuming parasite-infected snails in the upper Mississippi River. Trophic transmission occurs during seasonal waterfowl migrations, which can depend intimately on temperature. We developed an annual model for waterfowl disease where transmission depends on stochastic water temperatures gleaned from empirical studies. By running simulations from annual temperature profiles selected randomly from a normal distribution, we quantified the association between the number of infected hosts and annual average temperatures. Recent empirical work has demonstrated that parasites only transmitted within a certain temperature range. And, in fact, transmission status changes only when temperature remains within or outside the range for a certain number of days. We will discuss results on the effect accrual time across a temperature range has on the magnitude of waterfowl mortality. (Received September 17, 2015)