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Heidi A. Berger* (heidi.berger@simpson.edu), 701 N. C Street, Indianola, IA 50125, and **Clinton K. Meyer** and **Anna Mummert**. *Compartmental model of land use dynamics within the Tallgrass Prairie ecosystem: the case for the Conservation Reserve Program (CRP)*. Preliminary report.

Tallgrass prairie has been reduced to a fraction of its original extent, due to rapid conversion to other land use types, especially agricultural and urban. Restoration is a relatively new process to convert agricultural land back to communities dominated by native vegetation. We used a modified susceptible-infectious-recovered (SIR) compartmental model to quantify changes between land use types, incorporating the impact of human population within the Midwestern tallgrass prairie ecoregion. We considered transitions between native prairie, prairie restored through the Conservation Reserve Program (CRP), agricultural, and urban land. We used historical data to determine parameter ranges. Sensitivity analyses emphasize the importance of increasing incentives for CRP enrollment as a means to restoring the tallgrass prairie ecoregion. (Received September 15, 2017)