

**Olker**

**Predicting Effects of Climate Change on Amphibian Communities in Prairie Pothole Wetlands**

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The Prairie Pothole Region (PPR) contains millions of depressional wetlands that provide important habitat for a variety of wildlife along with ecological services such as flood storage. Climate change could severely impact amphibian communities in these prairie potholes, along with other wildlife. A wetland complex model (WETLANDSCAPE) was used to predict hydrologic responses under various climate change scenarios in the PPR. Combining hydrologic modeling with the amphibian species' natural history and breeding requirements indicated that suitable breeding habitat could be greatly reduced across the PPR under increased temperature and decreased precipitation. In the western PPR regions, which historically supported large amphibian populations in relatively unimpacted landscapes, amphibians could be forced into sub-optimal habitat while suffering from the effects of wetland isolation in the eastern PPR, where most wetlands have been drained for agricultural production. The eastern PPR is dominated by crops and these wetlands are likely subjected to fertilizer and pesticide loads, compounding the potential impacts. Understanding the potential impacts of land use and climate change helps guide conservation planning for maintaining stable amphibian populations.