Preparing Wisconsin Invasive Species Policy for Future Climate Change

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Wisconsin's regulatory approach to the threat of exotic species involves invader risk assessments tgat consider projected ecological, environmental and economic impacts and establishment probability. However, the suitability of present climate to the majority of aquatic invasive macrophytes is poorly understood. My primary objective is to characterize present and future climate suitability for novel invasive aquatic macrophytes. I applied a maximum entropy procedure to model occurrence probability using global plant distribution data and historical records of temperature and precipitation. I predicted future climate suitability under three possible futures determined by global circulation models and extreme IPCC scenario A2. The models predict range expansions over the next 80 years. Climate suitability variables change rapidly at range edges, which by mid-century may reach Wisconsin. This work will allow us to consider climate effects on species invasion and draft proactive invasive species policy before the establishment of new exotics in Wisconsin.