Summary

In a new publication, Foster et al (2022) lay out a method to test whether a non-native species has stabilized its range expansion in its introduced range using its invasion history. They use the expansion of Dog-strangling vine, *Vincetoxicum rossicum,* in North America over the past century as a case study. This species is an aggressive invader with limited control options once it establishes so it is critical to predict how far the species will spread. Their study contributes four findings that help us better understand when we have sufficient data to apply models to predict the spread of invasive species. First, they found that models built on data early on in in the invasion history did not accurately predict its range expansion over the next century. Second, models built on data in the past 50 years were a lot better at determining which areas were likely to be suitable for the species and how far the species was likely to have spread by present-day. Third, tracking the range of environments an invading species occupies can help us determine when we have enough data to make accurate models. Finally, the spread of *V. rossicum* was mainly determined by human population density.

Take home points

- Models predicting the spread of recent invasions (i.e., species that have just arrived) will be misleading. They are likely to have low accuracy, could be highly distorted by outliers, and may overpredict how far a species will spread.
- Models predicting the spread of established invasions (i.e., species that arrived decades ago) will have the highest accuracy in predicting how far a species will spread. However, species that are still expanding into new environments will likely remain difficult to model.
- Swaths of land without human disturbance are likely to slow down the invasion of *V. rossicum.*

Management implications

- Given that controlling this species in areas where it is well established is exceedingly difficult, eradication efforts should focus on isolated disjunct populations (e.g., Sudbury and Dryden ON), which could substantially slow the expansion of this species into new regions.