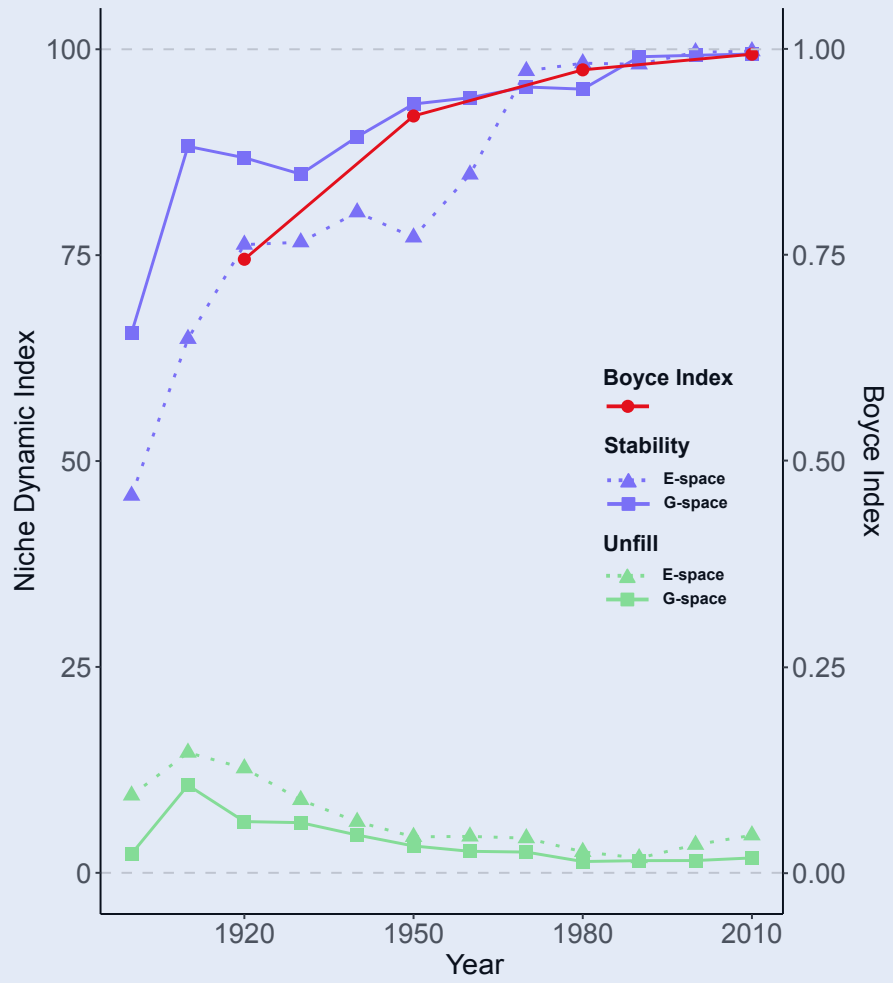
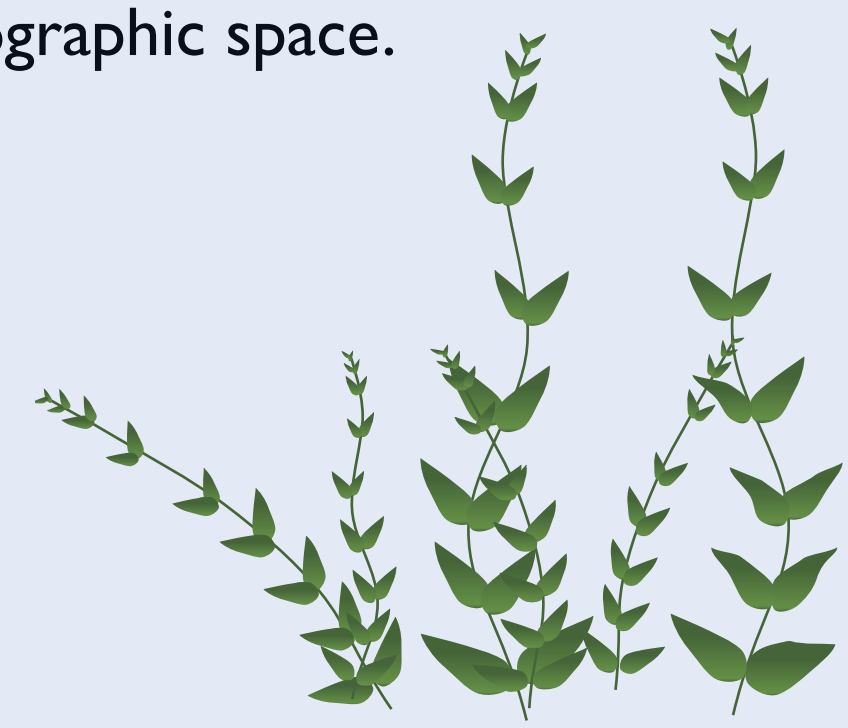
Testing the assumption of environmental equilibrium in an invasive plant species over a 130 year history

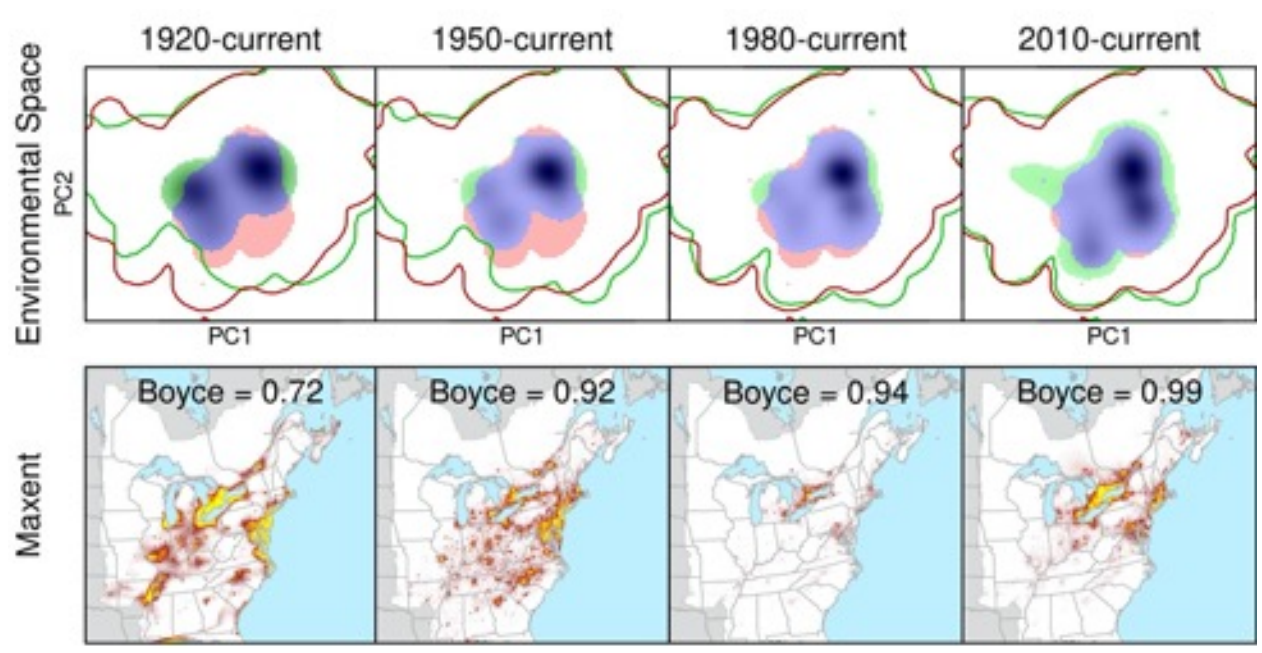
Using the invasive vine *Vincetoxicum rossicum* (Dog-Strangling vine) we tested the hypotheses that 1) invasive species' distribution in environmental and geographic space increase to a plateau over time; and 2) this plateau is a useful proxy for equilibrium distribution, a key assumption underlying species distribution models.



V. rossicum has reached equilibrium in environmental space but is still expanding in geographic space.



Our results suggest that once an invading species' expansion in environmental space has stabilized, adequate data is available for reliable invasive-range species distribution models.



The Takeaway

Our findings demonstrate the power of including temporal dynamics and the need to consider environmental and geographic equilibrium separately when modelling the distribution of invasive species.

Foster, S., Kharouba, H.M., and Smith, T.W. 2022. *Ecography*.

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