

# Prey capture by the non-native carnivorous pitcher plant *Sarracenia purpurea* across sites in the Britain and Ireland.

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## Abstract

\* The carnivorous pitcher plant *Sarracenia purpurea* is native to North America, but has been introduced into Europe, where it is now widespread. We have little understanding of how this species functions in its non-native range. Such understanding will provide insight into *S. purpurea* ecology and support its use as a model system for investigating food webs. We measured pitcher morphology and prey capture by *S. purpurea* in Britain and Ireland. \* Pitchers were removed from different plants at each of six bogs covering the species range in the UK and Ireland (n = 10 pitchers per site). For each pitcher we counted and identified every prey item and took measurements of morphology. We also compiled prey capture data for existing studies in Europe and North America. \* Prey capture characteristics varied between sites in the UK and Ireland. The amount of prey captured varied 2-fold between sites and was partially explained by differences in pitcher size; larger pitchers caught more prey. The primary prey was Formicidae, Diptera and Coleoptera. At the rank of order, prey composition varied between bogs, some contained mainly Formicidae, some mainly Diptera and some a mix. Plants were more specialised in prey capture at some bogs compared to others. There was no overall difference in prey capture (composition or degree of specialism) at the rank of order between plants in Europe compared to those in North America. At the rank of species, prey capture varied between populations even within the same order. \* This study demonstrates a large amount of variability between sites in prey capture characteristics. This may reflect different site characteristics and/or plant strategies, will likely impact plant function, and may impact on the inquiline community. In terms of prey capture at the rank of order *S. purpurea* functions identically in its non-native range. This supports its use as a natural experiment for understanding food webs

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