

Publication**Reduced pollinator service in small populations of *Arabidopsis lyrata* at its southern range limit****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4657727**Author(s)** Sánchez-Castro, Dario; Armbruster, Georg F. J.; Willi, Yvonne**Author(s) at UniBasel** [Willi, Yvonne](#) ; [Sanchez Castro, Darío](#) ; [Armbruster, Georg](#) ;**Year** 2022**Title** Reduced pollinator service in small populations of *Arabidopsis lyrata* at its southern range limit**Journal** Oecologia**Volume** 200**Number** 1-2**Pages / Article-Number** 107-117**Mesh terms** Animals; Arabidopsis; Flowers; Insecta; Plants; Pollination; Reproduction

Even though a high fraction of angiosperm plants depends on animal pollinators for sexual reproduction, little is known how pollinator service changes across the ranges of plant species and whether it may contribute to range limits. Here, we tested for variation in pollinator service in the North American *Arabidopsis lyrata* from its southern to northern range edge and evaluated the driving mechanisms. We monitored insect pollinators using time-lapse cameras in 13 populations over two years and spotted 67 pollinating insect taxa, indicating the generalist nature of this plant-pollinator system. Pollinator service was highest at intermediate local flower densities and higher in large compared to small plant populations. Southern populations had generally smaller population sizes, and visitation rate and pollination ratio decreased with latitude. We also found that pollinator visitation was positively correlated with the richness of other flowering plants. This study indicates that plant populations at southern range edges receive only marginal pollinator service if they are small, and the effect of lower pollination is also detectable within populations across the range when the local flower density is low. Results, therefore, suggest the potential for an Allee effect in pollination that manifests itself across spatial scales.

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