FACILITATION OR COMPETITION FOR POLLINATION BETWEEN INVASIVE AND NATIVE PLANT SPECIES?

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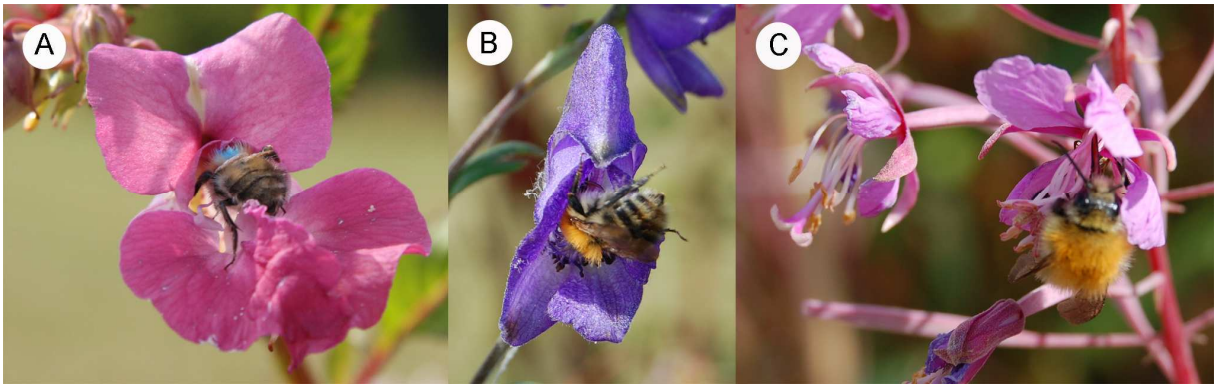
Plant species that invaded regions where they did not occur before can have deleterious effects on the native flora. They are often 'supergeneralists' that attract large numbers of insects with high amounts of nectar and pollen. This may lure pollinators away from co-flowering native species in the surroundings. Consequently, these native species receive less visits and less pollen is transferred, which could lead to reduced fruit and seed production. On the other hand, so-called facilitation effects have been also observed, where the invaders attract pollinators to a patch of flowering plants and may thus increase flower visits to native species.

We did an experimental study on the Giant Balsam (*Impatiens glandulifera*), which is considered as an aggressive invader throughout Europe. Our question was whether this invader would rather have a positive, neutral or negative effect on the attractiveness and visitation of native species that 1) occur in the same biotopes, 2) flower at the same time, and 3) share pollinators. During two seasons, we observed pollinators visiting flowers of the rare Monkshood (*Aconitum napellus* ssp. *lusitanicum*) and the common Rosebay Willowherb (*Epilobium angustifolium*) in the absence or presence of the invasive species. We further recorded pollen deposition on stigmas and seed set of fruits. All plants were potted and placed on two experimental grasslands where we manipulated the number of the invader as well as the distance to the native plants. The flower visitors, mainly honey- and bumblebees, showed inconstant behaviour, i.e. they switched regularly between the species. Honeybees usually preferred visiting the invader. Bumblebees on the other hand visited the native species more often when the invader was present Than in its absence.

A lot of pollen from the invader was deposited on the stigmas of the native species. However, this did not influence the production of seeds. It could be that in this case, the Giant Balsam has rather a facilitative effect on the pollination of the native species. However, observations from natural uninvaded vs. invaded populations still need to be tested.



Bumble bees visiting (A) Impatiens glandulifera *(B)* Aconitum napellus *and (C)* Epilobium angustifolium