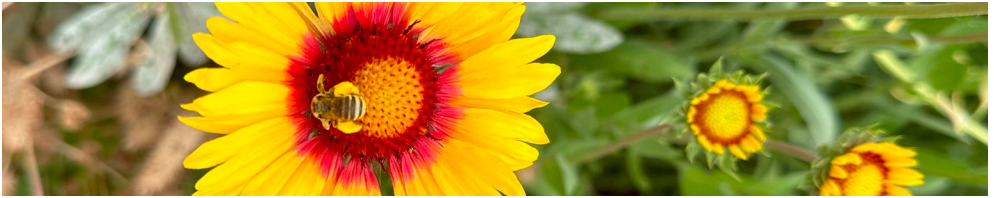


PLANTING FOR SPECIALIST BEES

Bees rely on both floral **nectar** and **pollen**: nectar as a carbohydrate source, and pollen as a protein source. Bee **diet breadth** refers to the collection of pollen by female foragers. Bees that collect pollen from a wide array of flowering plant families are considered **generalists**, while bees that limit their foraging to three or fewer plant families are considered **specialists**. Some bee species are more specialized than others, and may limit their foraging to a single plant family or even a single genus.



A female bee in the tribe Eucerini forages on blanketflower (Asteraceae family). Bees in this family (Apidae) collect pollen on their back legs. A female carrying a full pollen load might look as if she's wearing "pollen pants." Photo by Nicole Bell.

WHAT DO BEES SPECIALIZE ON?

Of the approximately 400 documented bee species in Massachusetts, 22% (81 species) are specialists.

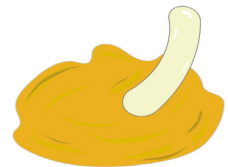
36% specialize on asters (family Asteraceae).

15% specialize on heaths (family Ericaceae).

7% specialize on willows (genus *Salix*).

42% specialize on other plants, such as dogwood (*Cornus* sp.), primrose (*Oenothera* sp.), and beyond!

Planting floral resources with specialist pollinators in mind is important, because they depend on those specific resources to feed their offspring. While nectar is mainly consumed by adults as a means to power flight, pollen is the primary protein source for developing bee offspring. Without adequate supply of their host pollen, specialist bee species cannot reproduce.



Pollen provision with an egg on top. Provisions are a mixture of nectar and pollen.

WHAT PLANTS ARE GOOD OPTIONS FOR SPECIALIST BEES?

ASTERS (ASTERACEAE)

- *Eurybia* sp.
- *Helianthus* sp. (Sunflowers)
- *Solidago* sp. (Goldenrods)
- *Symphotrichum* sp.



Asters are a common specialization for bees.

HEATHS (ERICACEAE)

- *Vaccinium* sp.
- *Rhododendron* sp.
- *Lyonia* sp.



Vaccinium corymbosum (highbush blueberry).

WILLOWS (SALICACEAE)

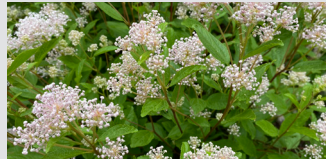
- *Salix* sp.



Solidago sp. (Goldenrod).

OTHER OPTIONS

- *Geranium* sp.
- *Cornus* sp. (Dogwoods)
- *Physalis* sp.
- *Ceanothus* sp.
- *Curcubita* sp.
- and many more!



Ceanothus x pallidus 'Marie Simon'.

Considering specialist bees when planting floral resources can help increase the abundance and diversity of native bee species at a given site. The more diversity in floral resources you have, the better!

Photos from top to bottom: Nicole Bell (3), Neil Bell.

ADDITIONAL RESOURCES

- Veit, M.F., Ascher, J.S., Milam, J., Morrison, F.R., Goldstein, P.Z., 2022. A Checklist of the Bees of Massachusetts (Hymenoptera: Apoidea: Anthophila). *kent 94*, 81–157. <https://doi.org/10.2317/0022-8567-94.2.81>
- Fowler, J. & Droege, S., 2020. Pollen Specialist Bees of the Eastern United States. https://jarrodflower.com/specialist_bees.html

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