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.

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WHAT PLANTS ARE GOOD OPTIONS FOR SPECIALIST BEES?

ASTERS (ASTERACEAE)
- Eurybia sp.
- Helianthus sp. (Sunflowers)
- Solidago sp. (Goldenrods)
- Symphyotrichum sp.

HEATHS (ERICACEAE)
- Vaccinium sp.
- Rhododendron sp.
- Lyonia sp.

WILLOWS (SALICACEAE)
- Salix sp.

OTHER OPTIONS
- Geranium sp.
- Cornus sp. (Dogwoods)
- Physalis sp.
- Ceonothus sp.
- Curcurbita sp.
- and many more!

Asters are a common specialization for bees.

Vaccinium corymbosum (highbush blueberry).

Solidago sp. (Goldenrod).

Ceonothus 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

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