

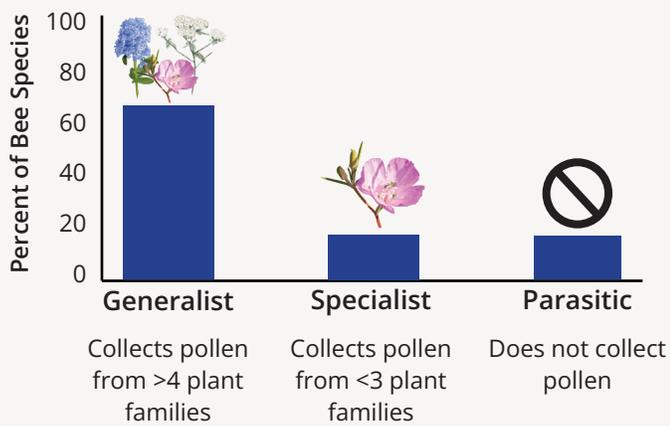
Urban Garden Bee Traits

Our research

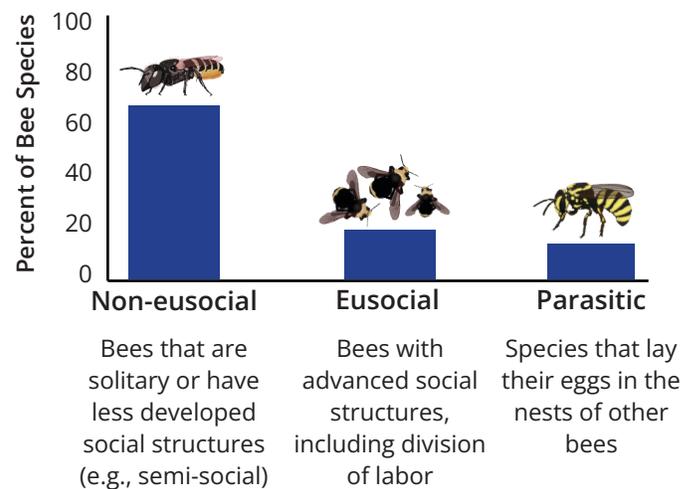
Urban gardens are uniquely positioned to support bee conservation. Gardens, when managed for pollinators, can provide food sources (pollen and nectar), nesting sites, and mating sites. Some bees (like sweat bees in the family Halictidae), are known to thrive in urban areas, we wanted to understand what types of bees are present in urban gardens, specifically. To answer this question, we reviewed 28 studies of bees in urban gardens spanning 5 decades and 14 countries. For each bee species reported, we identified 4 of their traits: sociality, nesting substrate, diet breadth, and native status.

What we found

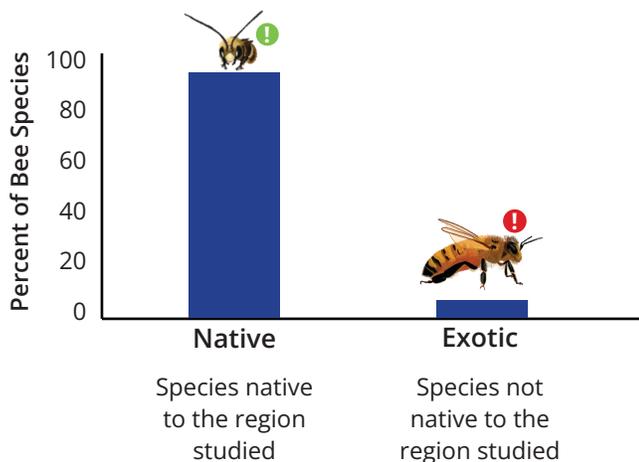
Diet Breadth



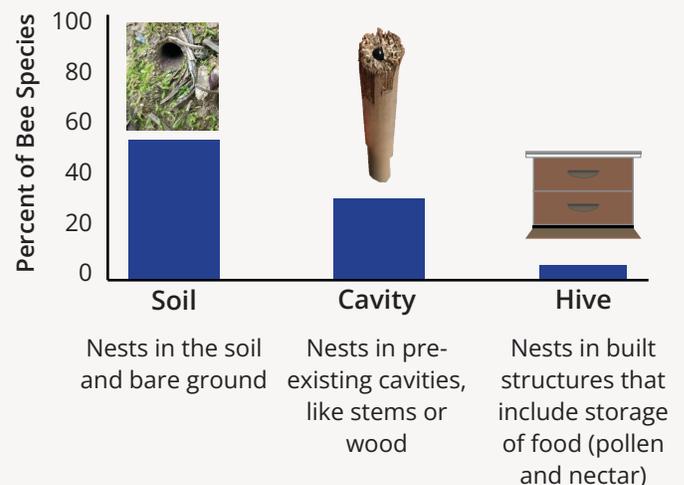
Sociality



Native Status



Nest Type





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When compared with expected proportions, we found generalist foragers, parasitic bee species, and native bee species to be well represented. Parasitic bees are considered positive bioindicators of habitat quality, since they require their host species to exist. The representation of parasitic bee species in urban gardens suggests the positive value of gardens to bees. We found mining bees (Andrenidae), soil-nesting bees, and cavity-nesting bees to be somewhat underrepresented in our study. We did not find a high diversity of eusocial and exotic bee species, but these types of bees tended to be the most abundant in gardens, due to the dominance of a few species, such as honey bees (*Apis mellifera*).

How does this relate to your garden?

By identifying the types of bees that are less common than we would expect in urban gardens, we can identify the resources needed to support them. For example, growing host plants would increase available forage for specialist bee species. Including native plant species and early-blooming shrubs and trees may help bolster mining bee abundance. Sometimes the greatest benefits may be yielded by doing less in gardens, like leaving leaves, patches of bare soil, small logs, and dead stems for ground- and cavity-nesting species. Reducing management or “tidiness” in gardens is an important practice which doesn’t require any financial input.

Additional Information

- Bell, N. C. S., Ascher, J. S., Hayes, J. J.-M., Mead, M., & Langellotto, G. A. (2023). Assessing five decades of garden bee studies. *Frontiers in Sustainable Cities*, 5. <https://doi.org/10.3389/frsc.2023.1102360>
- Plascencia M, Philpott SM. 2017. Floral abundance, richness, and spatial distribution drive urban garden bee communities. *Bull. Entomol. Res.* 107(5):658–667. <https://doi.org/10.1017/S0007485317000153>.
- Anderson, A., L. Locher, J. Hayes, M. Mead, S. Danler, D. Jones, G. Langellotto. 2022. Native plant picks for bees. EM 9363.
- Read more about bees with specialist diets in “The Diets of Specialist Bees” Garden Ecology Lab Brief!

Master Gardener™ Advice

- Contact your local extension office for Master Gardener advice, or look for Master Gardeners at local farmers’ markets.
- For more 10-Minute University™ handouts, videos, and the class schedule, visit <https://cmastergardeners.org>.

The Garden Ecology Lab Briefs are supported in part by a Gray & Norrene Thompson Community Projects Grant, 10-Minute University™, and the Clackamas County Master Gardener Association.



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