

THE BASICS OF BEE HOTELS

A bee hotel provides housing for species that nest in pre-existing cavities. Think of it like a bird house for bees! Residents, called “renters”, use provided materials as a safe, dry place to lay their eggs. Just like any hotel, cleaning is paramount between guests to support the health of existing and future nests. When properly built and annually maintained, these structures can host diverse wild bee species and offer an interactive learning opportunity.



Who uses bee hotels?

Of the estimated 400 bee species in Massachusetts, approximately 20% nest in pre-existing cavities. Beyond bees, some solitary wasps use bee hotels and contribute to garden pest control.

Common native bee and wasp bee hotel residents include, but are not limited to:

- *Osmia* spp. (mason bee)
- *Isodontia* spp. (grass carrying wasps)
- *Megachile* spp. (leaf cutter bee)



Common issues with bee hotels

Bee hotels are known to host a high abundance of non-native pollinators^{1,3}, which can reduce nesting opportunities for wild species. Additionally, dozens of nests in such close proximity can lead to increased nest and brood parasitism and disease prevalence².

Building and managing a bee hotel

1) Design and Placement: Many commercially available hotels will not provide the best support for native pollinators. Building a hotel provides control over quality and management options. Supporting structures are typically made of wood or heavy duty plastic, and cavities are usually created with reeds, stems, cardboard tubes and liners or holes drilled into wood. Tunnels should be at least 3 inches deep, and have diameters ranging from 5/64 inch to 1/2 inch⁵. Place the hotel in a sunny and south or southeast-facing location, if possible.

2) Fall Maintenance: Cocoons should be stored at the end of each season, usually in late October or early November in New England. Then, the supporting structure can be cleaned.

- Place occupied cardboard tubes, wooden blocks, reeds, or stems in a dark, well-ventilated, dry, mouse-proof bucket. Drill emergence holes in the side. Over the winter, store the bucket in an unheated area, like a garage, to protect cocoons from the elements.

- Many of the nesting tubes can't be reused and will have to be discarded every year. However, nesting materials like wooden blocks or grooved trays can be taken apart, scrubbed and sanitized every fall post emergence. To clean materials, soak with 1 part bleach to 2 parts water for 5 minutes⁴.

3) Spring Maintenance: Place the bucket with last year's materials in a safe outdoor area for bees to exit through the emergence holes.

- In late March, place new nest tubes in the cleaned and reassembled supporting structure.

ADDITIONAL RESOURCES

- 1) Geslin, B., Gachet, S., Deschamps-Cottin, M., Flacher, F., Ignace, B., Knoploch, C., Meineri, É., Robles, C., Ropars, L., Schurr, L., & Le Féon, V. (2020). Bee hotels host a high abundance of exotic bees in an urban context. *Acta Oecologica*, 105, 103556. <https://doi.org/10.1016/j.actao.2020.103556>
- 2) Graham, J. R., Campbell, J. W., & Ellis, J. D. (2023). Uninvited Guests: Identifying Parasites and Other Nest Associates of Solitary Bees and Wasps Using Artificial Nest Sites in North Central Florida. *Southeastern Naturalist*, 22(2), 192–206. (164829100). <https://doi.org/10.1656/058.022.0206>
- 3) MacIvor, J. S., & Packer, L. (2015). 'Bee Hotels' as Tools for Native Pollinator Conservation: A Premature Verdict? *PLOS ONE*, 10(3), e0122126. <https://doi.org/10.1371/journal.pone.0122126>
- 4) Mull, A., Spears, L., Hansen, S., Walker, A., Ramirez, R., & Gunnell, J. (2022). Making and Managing Wild Bee Hotels. Utah State University Extension and Utah Plant Pest Diagnostic Laboratory, 239(22).
- 5) Youngsteadt, E., & Favre, M. (2022, July 6). Bee Hotel Design and Placement | NC State Extension Publications. NC State Extension. <https://content.ces.ncsu.edu/how-to-manage-a-successful-bee-hotel/bee-hotel-design-and-placement>

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