



SQUASH BEES: SPECIALIST POLLINATORS OF A STORIED CROP

Hoary squash bee, Xenoglossa (Peponapis) pruinosa



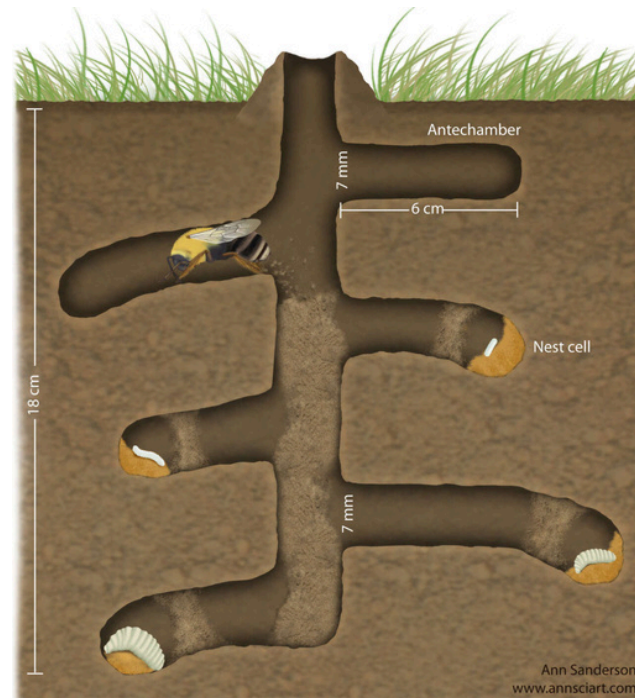
Squash bees are solitary bees native to North and South America that specialize in pollinating pumpkins, summer squash, winter squash, zucchini, and gourds (aka *Cucurbita*). These bees are expert foragers on squash blossoms and are active early in the morning, often before other pollinators are awake.

Uniquely adapted to the shape and timing of squash flowers, squash bees are highly effective pollinators. Unlike honey bees, they are not generalists—they rely almost exclusively on squash and gourd pollen to feed their young. Their foraging behavior is so closely aligned with these plants that some species of squash bees have followed squash crops across the continent, a movement that began with domestication and cultivation by Indigenous peoples and continued with the spread of agriculture by settlers.

Life Cycle

Like many native bees, squash bees nest in the ground. Female squash bees dig tunnels in sandy or well-drained soils—often near or within squash patches. Each nest contains multiple brood cells, where the female deposits squash pollen and nectar for her developing larvae.

Adults are active during the summer months when squash blooms are abundant. Males and unmated females sleep inside closed squash flowers, while females return to their nests at night. After several weeks of foraging and reproduction, the adults die, and the new generation remains in the soil until the following season.



Used with permission of Susan Willis Chan

Agricultural Significance

Squash flowers are short-lived and require pollination early in the day. Squash bees are perfectly timed for this, visiting flowers at dawn and finishing much of their activity by mid-morning. In many regions of North America, squash bees are capable of providing all the pollination needed for *Cucurbita* crops—making them unsung heroes of both backyard gardens and large-scale farms.

Studies show that female squash bees can pollinate thousands of flowers during their brief adult lives. Because they nest underground in or near squash fields, their presence can be boosted by reducing soil disturbance and avoiding pesticides.



Cultural Significance

The long relationship between squash bees and *Cucurbita* plants is deeply tied to human history in the Americas. Squash is one of the oldest domesticated crops in North America, cultivated for over 10,000 years. Indigenous peoples, including the Haudenosaunee and Aniyvwiya, developed the “Three Sisters” planting system, intercropping squash, corn, and beans to support ecological and nutritional resilience. In these ancestral systems, squash bees were vital to the success of squash harvests, making them part of a rich agroecological heritage.



Three Sisters companion planting technique by Anna Juchnowicz, CC-BY-SA 4.0

How to Help

Support squash bees, other native pollinators, and the pollination systems they sustain by:

- Planting Squash: Grow summer or winter squash to provide forage and enjoy the fruits of your partnership with squash bees!
- Buying Local and Seasonal: Support farmers who grow squash and other crops sustainably.
- Reducing or Eliminate Pesticide use: Especially important during bloom periods.
- Planting Native Flowers: Boost biodiversity and support a range of wild pollinators.
- Reducing Soil Disturbance: Avoid deep tilling of soil and other soil disturbance.
- Participating in Community Science: Record squash bee sightings on [iNaturalist.org](https://www.inaturalist.org) to help track populations.



**POLLINATOR
PARTNERSHIP**

Protect their lives. Preserve ours.

pollinator.org

For more information go to pollinator.org.

To find plants to support squash bees and other pollinators, visit pollinator.org/find-your-roots