

Identifying the bees on the poster “Join the Conversation about Native Bees”

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1. ***Macropis nuda***. There's oil in some flowers. Flowers including Spotted Loosestrife (*Lysimachia* spp.) produce energy rich and nutritious floral oils which some female bees (*Macropis nuda*) collect using modified leg hairs like “oil squeegees” to enrich their brood provisions. This happens in some tropical bees (especially the genus *Centris*) but in the northeastern USA, only in these interesting little *Macropis* oil bees.
2. ***Agapostemon texanus***. US sweat bee (a male *Agapostemon texanus*) is especially colorful. Males of this species have a shiny green/brassy head and thorax but a wildly contrasting black and yellow-banded abdomen. Look for these bees on sunflowers and other common plants in the late spring and summer.
3. ***Peponapis pruinosa***. Squash and gourd bees (like our *Peponapis pruinosa*) are common bees across much of the United States. They are specialist pollinators preferring the pollen and nectar of squashes, gourds and pumpkin flowers. The genus *Peponapis* is a colorful bee about the size of a honey bee. They are solitary; each female constructs her own nest with no help from kin, and nest a foot or more underground, usually in or near patches of their favorite cucurbits.
4. ***Bombus impatiens***. The Impatient Bumble Bee (*Bombus impatiens*) is the preferred bumble bee of commerce. Since it can buzz pollinate, while honey bees never do, it is reared in large numbers and its colonies flown to distance localities, greenhouses needing pollinators. Since it does not naturally occur west of the Mississippi, efforts are underway to only allow it to be used in the eastern states as a managed pollinator. Its colors are muted, the yellow hair bands are often more white than a bright yellow. Compare with Morrison's bumble bee of the western states.
5. ***Osmia lignaria***. The Blue Orchard Bee (*Osmia lignaria*) is a member of the leafcutter and mason bee family (Megachilidae). Its distribution includes the Pacific Northwest USA where it is a common visitor to fruit trees in gardens and yards. This bee is often first noticed as females searching for just the right size beetle or nail hole in which to nest and raise their brood. Blue orchard bees are specialists on trees in the rose family and superb pollinator of sweet cherries and other orchard crops. They are currently being tested as pollinators of almonds in California. This bee can be very easily provided for by drilling 7-8 mm diameter holes 5 inches deep into scrap lumber. These “bee condos” can be attached to a garden shed, fence or tree. Nesting females will take up residence and you will be rewarded with bountiful fruit harvests.
6. ***Hylaeus* sp.** Yellow-faced bees (*Hylaeus* spp.) usually go unnoticed by most gardeners and hikers. These slender black/brown bees are relatively hairless and most think they are wasps. Under a microscope, they are distinctive with a bright yellow face. The only bees natives to Hawaii are a group of these *Hylaeus*. Due to habitat fragmentation and loss in the Hawaiian Islands, several of these rare native bees have gone extinct, while others are declining. *Hylaeus* nests in hollow stems. Unlike most bees, *Hylaeus* carries its pollen and nectar back to the nest internally, inside the crop, or honey stomach.
7. ***Habropoda laboriosa***. The Southeastern Blueberry Bee (*Habropoda laboriosa*) is a digger bee (anthophorid in the family Apidae) from southeastern states including Alabama, Mississippi and Louisiana. This handsome large gray bee is an efficient pollinator of southern rabbit eye blueberries. This is one of the bees, unlike honey bees, which uses sonication, produced by rapid flight muscle contractions, to eject pollen grains from the blueberry flowers.
8. ***Xylocopa varipuncta***. Males of the Valley Carpenter Bee (*Xylocopa varipuncta*) are common in the southwestern states. These bees have striking colors, a large golden amber body with long hairs and brilliant green eyes. During the spring, males leave the nest galleries in which they emerged, inside a large log or tree branch and go courting. They establish hovering territories in a non-flowering shrub or tree and release a

pheromone, a rose-scented blend of volatiles from within massive thoracic glands. Passing females decide which male to mate with based up his particular bee “cologne.”

9. ***Bombus morrisoni***. Morisson’s bumble bee (*Bombus morrisoni*) is one of the most colorful bumble bees found in western and southwestern states. It’s mostly yellow fuzzy body attracts our attention as it visits diverse flowers in gardens and native wildflower areas. This bee is one of several that turns its body into a living tuning fork on plants with pored anthers, like tomatoes or deadly nightshades (*Solanum* spp.). Other species are managed for greenhouse pollination of tomatoes which require this form of buzz pollination.

10. ***Perdita minima***. The smallest bee in the United States is only 2.0 mm (about 1/16th of an inch) long. These small amber colored bees (*Perdita minima*) in the andrenid family nest in the soil and visit the small white flowers of mat-forming Euphorbiaceae that come up in sidewalk cracks and along dirt roadways in the southwestern states.

11. ***Xylocopa virginica***. Many gardeners mistake the Eastern Carpenter Bee (*Xylocopa virginica*) for a large bumble bee. Although both bees are large and colorful, they are only distantly related, both belonging to the large family Apidae. Carpenter bees collect pollen and nectar from a wide variety of plants, thus they are known as generalist feeders. Large carpenter bees construct their nests inside dead but sound wood. Sawdust scrapings are glued together to form the first “particle board” separating individual brood cells within their long galleries. In the east, *X. varpipuncta* is a minor structural timber pest, often constructing its galleries in sheds, outdoor beams or fence posts. On the bright side, these bees are amazing to watch at flowers or at their nests, and it takes decades of residency before there is any serious structural damage to support beams. The females reuse the same nesting tunnels year after year.

12. ***Bombus vosnessenskii***. The Yellow-faced bumble bee (*Bombus vosnessenskii*) is a handsome bumble bee mostly black with a yellow face and prothorax and narrow yellow abdominal band. It occurs in the western states of California, into Nevada, Washington, Oregon and into British Columbia. It does not seem to have been affected, in decline, like the formerly widespread Western Bumble Bee (*Bombus occidentalis*).

13. ***Bombus affinis***. The Rusty-patched bumble bee (*Bombus affinis*) is a bee that was formerly common across large areas of the United States from the Midwestern states to the northeast. It started to become rare in its former ranges after 1997. The reason(s) for its demise are not entirely settled but may include pathogen spillover from European parasites, contamination in the greenhouse bumble bee rearing industry.

14. ***Megachile* sp.** Leafcutter bees like this handsome *Megachile* sp. are members of a very diverse family, the Megachilidae, which includes the leafcutter, resin and mason bees. Females of many of these bees get their name from the pieces of leaves they collect. Have you seen neat circles clipped from the edges of rose bushes or other plants? These leaf pieces are used to line the brood cells; literally the bees are usurping the chemical defenses, against microbes, found in the leaves. Please tolerate some non-harmful cosmetic damage that the females cause and you’ll be rewarded with bountiful harvests in your home garden or orchard.

15. ***Andrena cornelli***. Miner bees, the family Andrenidae, are represented by the huge genus *Andrena*, with over 2,000 described species. Females of *Andrena cornelli* are common spring visitors to the large pink flowers of eastern Azalea (*Rhododendron canescens*). The cobwebby pollen of these flowers are carried away in strings as brood food by the *Andrena* females.

16. ***Anthophora centriformis***. Digger bees, or anthophorids like this *Anthophora centriformis* are members of the large family Apidae. *Anthophora* species are large, strikingly colored fast-flying bees that visit tubular flowers like *Penstemon* (“beardstongue”) in gardens and natural areas. Most digger bees nest in the ground and are solitary, living out their lives without any help, like solitary wasps.

17. ***Nomada* sp.** The Wandering Cuckoo Bee (*Nomada* sp.) is a type of digger bee (family Apidae) which does not collect pollen to feed its brood. These colorful and nearly hairless bees are cleptoparasites, or cuckoos in the nest of other bees. Like cowbirds, a female cuckoo bee sneaks her own egg in the nest while the host female is away. Once hatched, the cuckoo bee kills the host egg or larva and consumes the pollen and nectar provisions left by the host female.

18. ***Augochorella pomoniella***. Sweat bees like this beautiful metallic green *Augochorella pomoniella* are members of the large and diverse “sweat bee” family, the Halictidae. This southwestern species is a common resident of Arizona and adjoining states. These bees have sparse hairs and their integument is a shiny metallic green.