

THE BACKYARD

BUZZ

Wyoming's native bees

Christine Bell and Lusha Tronstad

Most people think honey bees when they hear the word "bee," but there are many species of bees that live in your backyard and aid pollination.

The **alfalfa leafcutter bee**, which was introduced from Europe, was the first solitary bee reared for commercial pollination. Alfalfa leaf cutter bees are specialized pollinators used to maximize seed production in alfalfa. These bees set 15 times more seeds than native bees and 10 times more seeds as honey bees in alfalfa crops. Commercial **bumble bee** colonies are often used for pollinating crops, especially plants in greenhouses. Tomatoes, peppers, and blueberries are a few crops that benefit from buzz pollination where the bumble bee grabs a flower and moves their wing muscles rapidly, essentially vibrating pollen loose.

Mason bees are frequently used in orchards all around the U.S. For

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Leafcutter bee, male

example, **blue orchard bees** are used to pollinate almonds, cherries, and apples, and **blueberry bees** are used to pollinate blueberries.

Native bees are not reared, but they pollinate crops behind the scenes. More seeds are made when native bees pollinate crops in combination with the honey bee. Native bees are often better than honey bees at pollinating plants native to North America, such as those in the nightshade family (potatoes, tomatoes, and peppers).

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Mason bee

Native bees are essential for pollinating flowering plants across Wyoming, from the prairies to the mountains. Bees are the best pollinators of flowering plants and the only animals that completely rely on flower pollen and nectar for survival. Bees actively collect pollen to feed their young and carry the pollen from one flower to the next. Non-bee pollinators are only interested in the nectar, and any pollen is transported by accident. Bees have special branched hairs on their body designed to



collect pollen. The location of these hairs can help identify bees.

Little is known about native bees in Wyoming – an estimated 700-800 different species of bees in 42 genera. Most native bees can be grouped as bumble bees, sweat bees, mason and leafcutter bees, long-horned bees, mining bees, small dark bees, or cuckoo bees. We will introduce these groups and then discuss what can be done to attract native bees to your property.

Bumble bees are medium to large-sized hairy bees usually black and yellow and often have an orange stripe on the abdomen. These bees are eusocial, meaning they form hives similar to honey bees with a queen and worker bees; however, bumble bee colonies house far fewer individuals compared to honey bees. Unlike honey bees, bumble bee hives last for one summer, and only new queens overwinter. Bumble bees nest underground in cavities such as abandoned rodent burrows. Bumble bees are generalist pollinators, meaning they will visit almost any type of flower.

Sweat bees are small to medium-sized slender bees that vary in color from dark metallic green, bright emerald green, to black with pale

stripes. Most are sleek and shiny with little hair. Sweat bees are usually the most abundant bees in Wyoming. Most are solitary, but some can be social. Sweat bees nest in the ground in hard-packed soil. These bees feed on a variety of flowers and are very important pollinators in Wyoming because they are so abundant.

Mason and leafcutter bees are medium-sized, bulky insects that are solitary. Mason bees are generally a deep metallic blue, and leafcutter bees are usually black with pale hair. Most bees collect pollen on their legs, but mason and leafcutter bees collect pollen on dense hairs on their belly. Mason and leafcutter bees nest in cavities, which means they build nests above ground in small openings. Their common names refer to the structure of their nests. Mason bees build nests using mud or clay, and leafcutter bees line the walls of their nests with pieces of leaves. Leafcutter bees can be particular



Bright green sweat bee

about what types of leaves or petals they line their nest with, and lilac leaves are popular in Wyoming. These bees can leave the leaf looking a little strange, but these bites do not harm the plant.

Long-horned bees are medium-sized, bulky insects that are solitary. These bees are usually dark with many pale hairs covering their body. Males have long antennae, which is where their common name comes from. Females are frequently seen with their hairy back legs loaded with

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Bumble bee

BEE SIZE CHART

Large Bees (0.5in to 1in)	Medium Bees (0.25in to 0.5in)	Small Bees (0.25in or smaller)
Bumble bees	Honey bees	Sweat bees
Long-horned bees	Mason and leafcutter bees	Masked bees
Cuckoo bees	Green sweat bees	Small carpenter bees
	Cuckoo bees	

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bright, yellow pollen. Long-horned bees nest in the ground. Some long-horned bees specialize on flowers in the sunflower family.

Mining bees are slender, small to medium-sized bees that usually have few hairs. Mining bees range in color from black to bright red to brown. Mining bees are solitary ground nesters, but many individuals will frequently nest close together. This group tends to be the first bees that emerge in spring.

Small dark bees. Several groups contain species that are very small (less than a quarter inch long), slender,

and dark in color. Small dark bees may be masked bees, small carpenter bees, or small sweat bees, and a microscope is needed to identify what group these small bees belong to. These bees are important pollinators of plants with small flowers. Masked bees and small carpenter bees nest in cavities such as dry wood. Masked bees look similar to wasps, and they store pollen in their stomachs. Masked bees regurgitate the pollen when they return to the nest.

Cuckoo bees are small to medium-sized, belong to several groups, and share a similar lifestyle. Cuckoo bees are so named because they are pollen thieves. A female cuckoo bee finds and lays her eggs in a nest belonging to another bee, the host. The cuckoo bee's young hatch, kill, and sometimes eat the host's young, and eat the pollen that was provided by the female host bee. Cuckoo bees are frequently wasp-like, hairless, and poor pollinators. These bees are rare, and seeing cuckoo bees indicates there are healthy populations of other bees around.

Attracting Native Bees

So how can you help encourage native bees on your property? Provide food! Native bees thrive on native wildflowers, so grow lots of native plants that provide pollen and nectar. You can also put a block of wood in a stock tank or bird feeder giving thirsty bees a shallow pool from which to drink. Providing excellent nesting habitat is another way to promote more native bees. Providing patches of undisturbed bare or sparsely vegetated ground is extremely beneficial for native bees because most native bees nest in the ground.

You can provide "bee hotels" by drilling different sized holes in a block of wood, or bundling various sizes of hollow straws to encourage cavity nesting bees. You can leave plant stems in your garden, because cavity nesting bees love nesting in old stalks from large perennials or in holes in a tree stump.

Native bees work hard to pollinate native and cultivate plants.

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Cuckoo bee

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Long-horned bee

About 75 percent of crops are pollinated by animals, and the produce section of grocery stores would look bare without these animals. Pollinating plants is a lot of work and you will appreciate all that bees do if you ever pollinate by hand.

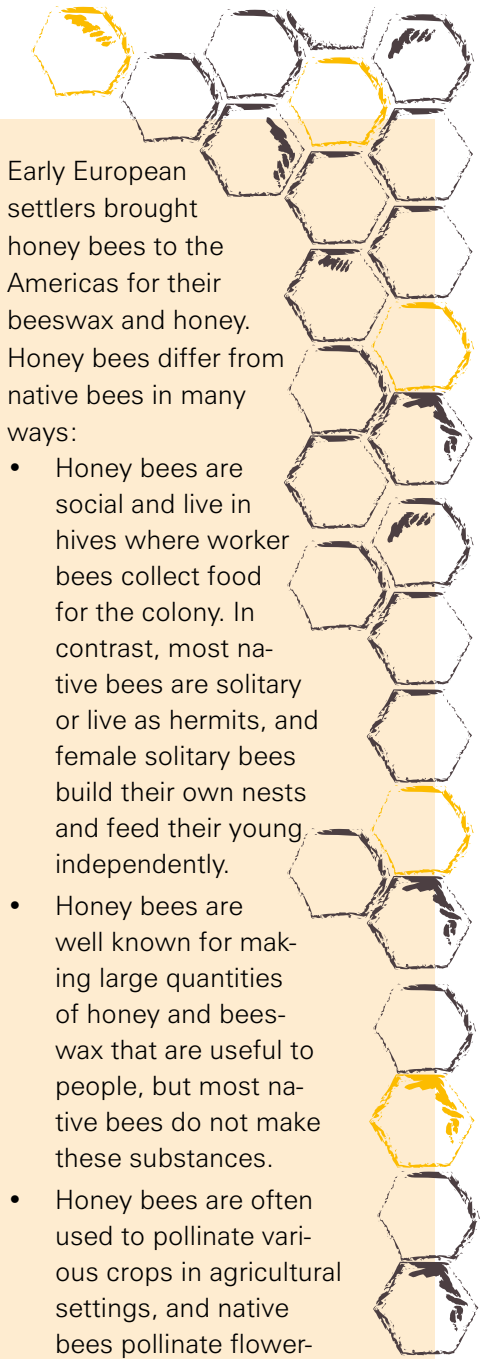
We usually do not think about all the steps that occurred when we eat a zucchini or tomato, but we hope our articles makes you appreciate what these buzzing bees are doing in your garden. Next time you see a bee

flying by, you can think about all the work they are doing to make our food and put your feet up while you watch them work.

Check out some great region-specific planting guides here: <http://pollinator.org/guides.htm>

Information on farming for bees: bit.ly/farmforbees

We'd also highly recommend a new book by Joseph S. Wilson and Olivia Messinger Carril called *The Bees In Your Backyard*.



Early European settlers brought honey bees to the Americas for their beeswax and honey. Honey bees differ from native bees in many ways:

- Honey bees are social and live in hives where worker bees collect food for the colony. In contrast, most native bees are solitary or live as hermits, and female solitary bees build their own nests and feed their young independently.
- Honey bees are well known for making large quantities of honey and beeswax that are useful to people, but most native bees do not make these substances.
- Honey bees are often used to pollinate various crops in agricultural settings, and native bees pollinate flowering plants in all types of ecosystems, including agricultural and natural settings.

Christine Bell loves bees and is an expert in bee identification. She is studying for her master's degree at the University of Wyoming investigating the native bees in Wyoming.

Lusha Tronstad is the invertebrate zoologist at the Wyoming Natural Diversity Database at the University of Wyoming. She lives outside of Laramie with her family where they have a large garden and enjoy the fruits of native bee's labor.