

Pollinator Conservation: BUILD YOUR OWN SOLITARY BEE NEST



Native solitary bees are very efficient and effective plant pollinators. They are also a very diverse and beautiful group of insects. These bees live a solitary life, unlike the honey bee and bumble bees that form colonies. Some solitary bees nest in the ground while others such as tunnel-nesting bees require hollow plant stems or other small tunnel spaces to build their nests. You can help conserve the native solitary bees in your area by planting flowers and providing artificial bee nests.

Tunnel-nesting bees require special habitat to build their nests. To make their nests, the bees must first find a suitable plant stem or old beetle tunnel to use. Female bees then begin constructing brood cells from back to front, providing pollen and nectar to each egg she lays. A female may lay one or more eggs in a single nesting tube. These eggs overwinter in the nest, and adult bees emerge from the tube the following year.

You can easily make your own solitary bee nest. Making an artificial bee nests can be done in many different ways, and a variety of different materials can be used. Very simply, an artificial bee nest is made up of hollow straws placed in a protective container, and the container is then placed outside. Here we will describe how to build one type of nest for tunnel nesting bees. These bee nests are simple to construct with materials readily available at your local hardware store and will last for many seasons if maintained properly.



MATERIALS

- 1 PVC pipe (2-4" in diameter)
- 1 PVC pipe cap
- Drinking straws (Paper or plastic)
- 1-2 Rubber bands
- 1 Metal garden t-post (if needed)
- 4-6 Large zip ties (for t-post attachment)
- Saw (to cut PVC)



Materials needed for making solitary bee nests

CONSTRUCTING YOUR BEE NESTS

1. Cut the PVC pipe 1 inch longer than the straws you plan to use. This length gives the straws some protection from inclement weather. A tube cut to 9" should be an adequate length for most drinking straws.
2. Place the PVC cap on one end of your cut tube. The nesting tube **MUST** have one end closed off or the bees will not be able to construct their nests.
3. Create a bundle of straws that fits inside your nesting tube snugly. Wrap the straw bundle with 1-2 rubber bands. This will prevent the straws from sliding out over time.
4. Place the straw bundle in the tube and push the straw bundle to the back of the tube. Double check that the bundle is touching the rear of the tube.
5. *You have successfully constructed a bee nest!*
6. **Place your bee nest outside in the spring with the nest positioned horizontally.** The opening of your bee nest should face south or southeast to allow in sunshine to warm the bees.
7. Place nests 2-4' above the ground to allow for good observation of bees visiting the nest. This height is only for your convenience since nest height does not matter to the bees.
8. Use zip ties to attach the bee nest to a garden t-post or stake. Alternatively, you can attach the bee nest to a building or tree. Wherever you place the nest, **make sure the nest is securely attached** and will not move in the wind. Bees are less likely to use a poorly secured nest.



Straws bundled and ready to be placed in nesting tubes

MAINTAINING YOUR BEE NESTS

To successfully overwinter your bees, nests must be maintained in COLD and DRY conditions during the winter. Place nests in an *unheated* garage or shed in the fall. In March, place the nests back outside to allow adult bees to emerge. Nests can remain outdoors if they are in a protected place that will prevent moisture (snow, rain, etc.) from entering the bee nest.

Bee nests must be maintained and cleaned to reduce the risk of disease and parasites affecting the bees. **All straw bundles should be replaced every two years.** Using paper straws over plastic straws is one way to reduce the potential for diseases affecting the bees.

