



CONSERVATION  
SOCIETY OF  
CALIFORNIA  
TAKING ACTION FOR WILDLIFE

OAKLAND ZOO



K. Rabuck

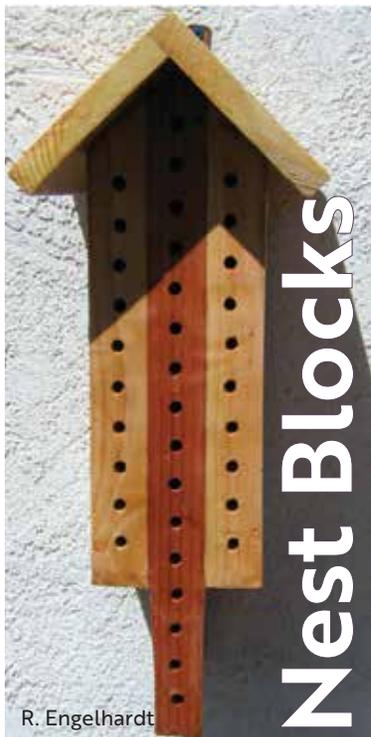
# NATIVE BEE HOTELS

## Why?

California is home to over 1600 different bee species that come in many different shapes, sizes and colors. Only a small handful of these are nonnative. Native bees are far more efficient pollinators than the well-known European honey bee. One study found native bumble bees are 4-6 times more efficient at pollinating blueberries than their foreign cousins. This means that we need to open our gardens, balconies, and outdoor spaces to the great diversity of native bees.

Once you've invited bees into your garden by planting native plants, you can make them feel at home by creating nesting sites. Roughly 75% of North American bee species are solitary and nest in tunnels – either dug in soil or taking over existing cavities.

Nesting sites can be as simple as leaving bare soil for digger bees, but many people want a more decorative solution. Insect hotels are a great way to support native bees with a little continued care. They can be made in a variety of shapes, colors, and sizes.



R. Engelhardt

## How?

### Step 1: Choose Your Wood

Use preservative-free lumber (pine or redwood recommended) or rough wood with similar dimensions. 4x4 is not ideal, but can be used for smaller bees. See table below.

### Step 2: Drill Holes

Drill holes between 3/32 and 3/8 inch (2.5-10 mm) in diameter at least 3/4 inch from center to center. Do not drill all the way through the wood – bees won't nest in tubes that go all the way through.

Drill holes perpendicular to the wood grain and/or line with parchment paper to create smooth hole interiors.

### Step 3: Add a Roof

If you are not hanging the block under eaves, attach a simple roof to protect holes from direct sun and rain.

| Hole Diameter     | < 1/4 inch diameter | > 1/4 inch diameter |
|-------------------|---------------------|---------------------|
| Hole Depth        | 3-5 inches          | 5-6 inches          |
| Lumber Dimensions | 4x4*                | 4x6*                |

\*length is not as important, but 8 inches is recommended



# Stem Bundles

## How?

### Step 1: Choose Your Frame

Use a plastic bucket, large PVC pipe, paper milk carton, tin can, wooden box, or premade sleeve to create a frame for your stem bundle.

### Step 2: Cut Stems

Cut numerous bamboo stems or hollow reeds just below a node. Paper straws can also be used.

Be sure all tubes are blocked at one end.

### Step 3: Bundle Stems

Pack stems and reeds tightly into frame with open ends facing out and blocked ends in. Tubes can be different lengths, but should be flush or shorter than the frame and follow the same general hole dimensions as nest blocks.

## Mix & Match!

For a more artistic look, use a combination of nest blocks and reeds in various compartments. Throw in a pinecone for texture and cracked log. Keep in mind, large bee hotels are far more work and at higher risk for infestation of parasites and disease. Instead, create smaller nest blocks and spread them around.

## Where?

Find a sturdy protected place to mount your insect hotel where it won't be disturbed by wind or rain. Ideally, this spot would get early morning sun and light shade throughout the day. The morning sun helps warm the bees to flight temperature, but hot afternoon sun can kill the developing larvae.

Height is less important, but should be at least a couple feet off the ground with entrances unobstructed by surrounding foliage.

You can help the bees find nesting materials by creating a small mud pit within 50 feet of the hotel for species that prefer to line their tunnels with it. Leaf cutter bees also need foliage suitable for their larval cells. Western Redbud, *Cercis occidentalis* is a favorite.

## Ongoing Care

To reduce disease, remember to replace the nesting block or tubes every two years. In late February, place tubes or blocks in a lightproof box with a single exit hole on top. Mount the box below the fresh hotel so the emerging bees will immediately encounter their new nesting home. Leave the emergence chamber out until mid-June. Discard empty tubes and blocks.

## Resources\*

Pollinator.org  
Xerces.org  
Calscape.org

*Attracting Native Pollinators*, The Xerces Society  
*California Bees & Blooms*, Gordon W. Frankie, Robbin W. Thorp, Rollin E. Coville, & Barbara Ertter  
*Bringing Nature Home*, Douglas W. Tallamy

\*Sources used to create this guide and additional resources for more information.

