

Joan Calder: Increasing Yield in the Garden with Native Bees

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Be a hero to the pollinators:

- **Provide nectar and pollen resources**
- **Give them a place to raise their young: bare ground, brush piles, nesting blocks**
- **Eliminate pesticides including Bt *Bacillus thuringiensis***
- **Native mason bees and leafcutter bees do NOT sting**
- **Native Bees collect pollen 30 to 60 times more efficiently than honey bees.**

Video on native bees <http://www.growingagreenerworld.com/solitary-bees-pollinators/>

<http://crownbees.com> To purchase bee nesting materials, newsletter, and information.

Use Coupon Code Joan Calder to get a 5% discount.

Wood-Nesting and Cavity-Nesting Bees Courtesy of Xerces Society plus edits by Joan

About 30 percent of our native bee species make their nests in old beetle tunnels in snags or similar locations. The female bee builds dividing walls across the tunnel to make a line of brood cells. Where you can, retain snags. Where you can't, make some nesting blocks or you can purchase ready made ones from crownbees.com.

- Nesting blocks. Bee blocks can be made by drilling nesting holes between 3/32" and 3/8" in diameter, at approximate 3/4" centers, into the side of a block of preservative-free lumber. The holes should be smooth inside, and closed at one end. The height of the nest is not critical—8" or more is good—but the depth of the holes is. Holes less than 1/4" diameter should be 3-4" deep. For holes 1/4" or larger, a 5-6" depth is best. Use paper tubes to line the holes. These are replaced each year to avoid mite and fungus problems or redrill the holes to avoid contamination in wood blocks.

Cut sheets of discarded paper in quarter sections. Then roll each piece around a pencil and insert in hole. Remove pencil. You can also stack tubes horizontally in a protected area similar to a birdhouse but open in the front. For these remove the pencil and fold over and staple or tape one end. Place a small board over the top of the paper tubes to keep in place.

Location of the nesting sites is important. These nests should be placed where they are sheltered from the worst of the weather, with entrance holes facing towards east or southeast, so they get the morning sun. With stem bundles, be sure that the stems are horizontal. The nests can be any height from the ground, but between three and six feet is convenient. Put them on a building, fence, or stake, or place them in a tree. Fix them firmly so they don't shake in the wind. If you have an ant problem use something like Tangle Foot Insect Barrier so the ants do not get to the nest.

- Logs and snags. Get some logs or old stumps and place them in sunny areas. Those with beetle tunnels are ideal. Plant a few upright, like dead trees, to ensure some deadwood habitat stays dry. On the southeast side of each log, drill a range of holes, as outlined above.

More information on Xerces.com

GREAT VIDEOS

<http://www.pbs.org/wgbh/nova/nature/monarch-migration.html>
Amazing video in Google type in: Tedpollination youtube

WHAT TO PLANT

<http://www.laspilitas.com> Native nursery with great suggestions.
www.pollinator.org Web site to find appropriate plants in your zip code.

FABULOUS MOVIE

<http://www.flightofthebutterflies.com/theatres-reviews/>

JOIN and SUPPORT

The Xerces Society <http://www.xerces.org> they are helping all pollinators

HELPFUL WEB SITES

<http://www.helpabee.org/common-bee-groups-of-ca.html>

<http://www.ipm.ucdavis.edu>

Bug Squad <http://ucanr.edu/blogs/bugsqad/index.cfm>

<http://www.monarchwatch.org>

<http://www.monarchlab.org>

<http://www.nababutterfly.com>

<http://www.learner.org/jnorth/>

<http://www.laspilitas.com/garden/hummingbird.html>

<http://www.allaboutbirds.org>

Nectar Plants for Butterflies and bees

Lantana purple

California fuchsia *Zauschneria californica*

Verbena bonariensis – Brazilian Verbena

Heliotrope

Mexican Sunflower – Tithonia

Cosmos

Pentas lanceolata

Echinacea - Coneflowers

Aster

Bougainvillea

Oregano

Joe-Pye Weed

Marigold

Purple Sage

Zinnia tall bright colors red, pink orange

Black and Blue Sage

Sunflower

Monardella antonina Butterfly Mint Bush

Plant in groups of three to six plants around the garden. Ideal is area 3'x3' for one species. The pollinators can locate the plants easier if they are in mass plantings. This goes for host and nectar plants.

Select native plants. Native plants have higher nectar content than most non-natives and they produce a healthy ecosystem by attracting a wider variety of birds and insects, which enhance the biodiversity.

Herbicides and pesticides kill bees, butterflies and caterpillars. Bt *Bacillus thuringiensis* considered to be an organic product will also kill caterpillars of the butterflies.

Locate a seating area in your garden to enjoy your new friends.

Native Bees are a great hobby to share with your kids and grandkids. They do not sting.