

# Gardening for Insects - *or not!*

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Prepared for the Symposium Changing Conversations in the Garden, sponsored by the Master Gardeners of Mercer County, Princeton, NJ March 12, 2016.

**Basic Premise:** Provide (or eliminate) aspects of the environment that are required for optimal growth and development of insects found in/around yards/gardens/homes:

- Food for immature stages;
- Food for adult stages;
- “Special needs” (water, mud, plant resins, plant hairs);
- Shelter (primarily for nesting).

## Butterfly Gardening

People garden for many purposes: to provide fresh produce, to make landscapes more attractive, and to attract wildlife. One form of wildlife that is quite easily attracted to a yard are butterflies. In recent years, butterfly gardening has become an increasingly popular form of landscaping in the United States, following a long history in England and other areas of Europe.

At its core, the principles of butterfly gardening are simple - purposeful plantings to attract and retain local species of butterflies to the site. This is done by providing for the basic needs of the insects - foods used by both the adult and caterpillar stages of the butterflies as well as attention to shelter requirements.

Shelter needs are fairly easily provided for in most yards. Garden sites chosen for a butterfly garden should provide some protection from the strong winds common to the region. A hedge or windbreak of some sort is useful for butterfly gardens established in more exposed locations. In residential neighborhoods this is usually provided by the buildings and landscaping already in place.

The most obvious feature of a butterfly garden are nectar-bearing flowering plants. Plants commonly visited by butterflies are those which provide sugary nectar used by many species as an energy source. Types of flowers – and even different cultivars of the same species - vary greatly in this regard. Of course, the types of flowers being considered should be regionally adapted. Fortunately, in the area around New Jersey, there are some excellent local resources that can advise one on selection of plants to consider. These include a list provided by the ;

and a list of native flowers that are attractive to butterflies that the North American Butterfly Association New Jersey Club Chapter has developed at:

<http://nababutterfly.com/northern-nj-and-nyc-native-flowers/>

Table 1. **Some nectar-bearing flowering plants commonly visited by butterflies.**

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|   |                                    |
|---|------------------------------------|
| Asters                                    | Bee balm ( <i>Monarda</i> )        |
| Butterfly bush ( <i>Buddleia davidi</i> ) | Milkweeds ( <i>Asclepias</i> spp.) |
| Cosmos ( <i>Cosmos</i> spp.)              | Goldenrods ( <i>Solidago</i> spp.) |
| Blazing star ( <i>Liatrus</i> spp.)       | Joe Pye weed                       |
| Larkspur                                  | Lantanas (several)                 |
| <i>Gaillardia pulchella</i>               | Sages ( <i>Salvia</i> spp.)        |

Sweet pea  
Verbena

Thistles (including globe thistle)  
Zinnia

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Males of some butterflies also visit damp areas, sometimes collecting in large groups. The purpose of these 'mud puddle clubs' is unclear, but it is thought that dissolved minerals are useful nutrients for the butterflies. A small pool or area of moistened soil can provide for the needs of these butterflies.

When designing a butterfly garden, attempt to make mass plantings of butterfly food plants, which are more attractive than are scattered plantings. Also, give consideration to providing a sequence of desirable flowers and plants throughout the season. Although some butterflies may be present during the entire growing season, butterfly visits typically peak during mid to late summer so it is particularly important to provide nectar and other adult food sources at this time of the year.

Also very important in a butterfly garden are food plants used by the caterpillar stage of the butterflies. These plants are actively sought by the female butterflies for egg laying and the presence of caterpillar foods can allow their local establishment. Furthermore, the caterpillar stages are often unusual in form or color and can be particularly interesting to observe. Use of caterpillar food plants can allow one to observe all stages of butterfly development (eggs, caterpillars, chrysalis, adult) increasing enjoyment of the butterfly garden.

The types of butterflies present in an area vary considerably by regions and therefore regional considerations are important in selecting the appropriate plants to support them. Some of the plants that support larval stages of multiple species include:

Among the tree species, **oaks** host several species of butterflies in the "hairstreak" and "dustywing" groups. **Wild black cherry** is the host for the eastern tiger swallowtail, coral hairstreak, striped hairstreak and redspotted purple. **Common hackberry** is the host for the tawny emperor, hackberry emperor, American snout, question mark, and mourning cloak.

Many legumes, including beans, support larval stages of regional butterflies. The native **partridge pea** (*Chamaecrista fasciculata*) is a host plant for the cloudless sulphur, sleepy orange, little yellow, ceraunus blue, and gray hairstreak. **Blue wild indigo** (*Baptisia australis*) is host for the orange sulphur, clouded sulphur, frosted elfin, hoary edge skipper, wild indigo duskywing, and eastern tailed-blue; **false indigo** (*Amorpha fruticosa*) hosts the silverspotted skipper, hoary edge, and gray hairstreak.

Violets are host plants for many of the larger fritillary butterflies. Nettles are hosts for the red admiral, eastern common, and question mark. Many of the skippers develop on grasses.

Again, excellent local resources are regionally available for assistance in identifying plants that support the butterflies that are local present, such as the two organizations cited (Audubon Society, North American Butterfly Association)

There *are* some conflicts which arise with butterfly gardening, as with all other landscaping designed to attract wildlife. Most obvious are the caterpillar food habits which involve eating some of the plant leaves. Although caterpillars of most butterflies never occur at levels that would damage plants, there are a few that can be considered 'pests' in some settings. Most obvious is the cabbage butterfly, the common 'cabbageworm' of home gardens. Unfortunately the caterpillars of this insect all too often spoil a head of cabbage or broccoli and may need to be controlled on these plants.

A few other caterpillars may feed on some garden plants. The strikingly colored caterpillar of the black swallowtail butterfly, also known as the parsleyworm, is a caterpillar familiar to gardeners who make plantings of parsley, fennel, or dill. The painted lady may munch on a few hollyhock leaves when it is not on dining on thistles and the caterpillar of the variegated fritillary often resides in a patch of pansies. However, in larger plantings designed for ornamental purposes the feeding by these insects will rarely be noticeable.

Butterfly gardens also tend to look a little more 'wild' than formal garden designs. Some of the best plants useful for attracting butterflies do not have a compact growth habit and some of the plants used by caterpillars and butterflies are even considered weeds in some settings. Careful landscape design can minimize this problem.

Finally, most insecticide use is incompatible with a butterfly garden. Caterpillars are very susceptible to most insecticides, including *Bacillus thuringiensis* (Dipel, Thuricide). Adult butterflies are less sensitive to insecticides, but also can be killed or repelled by some ingredients. Furthermore, most fungicides, selective miticides and insecticidal soaps *can* be safely used on plants visited by butterflies or caterpillars. A conscious decision must be made try not to treat the butterfly garden plantings, something that is made easier by selecting plants prone to few other pest problems.

## Sphinx moths and “Hummingbird Moths”

Sphinx moths (hawk moths) are adults of insects in the family Sphingidae. Larvae of most are known as “hornworms”, as most possess a stout spine on the hind end of the body.

Day flying species are popularly known as “hummingbird moths”. The most common species of “hummingbird moth” in much of North America is the **whiteline sphinx** (*Hyles lineata*) that flies during dusky and cloudy periods as well as at night. A strictly day-flying group are the “bumble-bee clearwings (*Hemaris* spp.) that somewhat resemble large bumble bees. Species present in the MidAtlantic states include the **hummingbird clearwing** (*H. thysbe*), **snowberry clearwing** (*H. diffinis*), and **slender clearwing** (*H. gracilis*). (Note: The two hornworms that are damaging to garden tomatoes, the tomato hornworm and the tobacco hornworm, do not fly during the day; thus, these would not be considered "hummingbird moths".)

Although hummingbird moths will visit many flowers, the types of plants they will most often visit have long flowers, with rich nectar sources that may be beyond the reach of many other flower visitors with shorter mouthparts. Some good plants to consider planting in order to increase visitation by “hummingbird moths” (and other sphinx moths) include:

- Evening primrose (*Oenothera*)
- Four o'clocks (*Mirabilis*)
- Gentian (*Delphinium*)
- Honeysuckle (*Lonicera*)
- Larkspurs (*Delphinium*)
- Wild bergamot (*Monarda fistula*)
- Many *Agastache* spp.
- Catmints (*Nepeta* spp.)
- Datura*
- Winecup (*Callirhoe*)

## The Use of Flowering Plants by Natural Enemies of Insects

Many insects important in the biological control of plant pests have special food needs during their adult stage. For example, syrphid (flower/hover) flies are important predators of aphids in their larval stage but adults must feed on nectar to mature eggs. Many other insects use pollen and/or nectar (as well as honeydew) to sustain them, often allowing them to survive longer, produce more progeny and provide an overall higher level of biological control. Lady beetles, green lacewings, tachinid flies and parasitic wasps are among the natural insect enemies that utilize nectar and pollen in this manner.

As the mouthparts of these insects are not greatly enlarged to access deep sources of nectar shallow flowers are those used by these insects. Also, flowers that are broad and allow the insects to easily perch are also favored. Many plants in the families Apiaceae (carrot family) and Lamiaceae (mint family) are particularly meet these criteria and are commonly utilized by natural enemies of insects. A list of these and some other plants to consider for gardens to promote the activity of these insects is in Table 3.

### Some plants that are utilized as nectar/pollen sources for natural enemies of insect pests.

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|  |  |
|--|--|
| Moon carrot ( <i>Seseli gummiferum</i> )           | Coriander ( <i>Coriandrum sativum</i> )              |
| Fennel ( <i>Foeniculum vulgare</i> )               | Dill ( <i>Anethum graveolens</i> )                   |
| Sweet alyssum ( <i>Lobularia maritima</i> )        | Basket-of-gold ( <i>Aurinia saxatilis</i> )          |
| Yarrow ( <i>Achillea</i> )                         | Carpet bugleweed ( <i>Ajuga reptans</i> )            |
| Lavender globe lily ( <i>Allium tanguticum</i> )   | Dyers' camomile ( <i>Cota tinctoria</i> )            |
| Master wort ( <i>Astrantia major</i> )             | Dwarf alpine aster ( <i>Aster alpinus</i> )          |
| Four-wing saltbush ( <i>Atriplex canescense</i> )  | Purple poppy mallow ( <i>Callirhoe involucrata</i> ) |
| English lavender ( <i>Lavandula angustifolia</i> ) | Sea lavender ( <i>Limonium latifolium</i> )          |
| Edging lobelia ( <i>Lobelia erinus</i> )           | <i>Mentha x piperite</i>                             |
| <i>Monarda fistulosa</i>                           | <i>Penstemon strictus</i>                            |
| Sulfur cinquefoil ( <i>Potentilla recta</i> )      | <i>Sedum</i>   |
| <i>Solidago virgaurea</i>                          | Crimson thyme ( <i>Thymus serpyllum coccineus</i> )  |
| Spike speedwell ( <i>Veronica spicata</i> )        | Lanceleaf coreopsis ( <i>Coreopsis lanceolata</i> )  |

Hunting wasps (Crabronidae, Sphecidae) may also benefit from provision of nest sites. These are solitary wasps that create nest sites that they subsequently provision with live, paralyzed prey they collect to feed their young. Many hunting wasps will nest in soil, and soil type, slope, and drainage may be very important in meeting nest site requirements. Others are cavity nesters that will utilize existing holes or excavate plants that have a pithy center. Provision of drilled wood, pruned branches of pithy plants (e.g., caneberrries, rose, butterfly bush) or bundled canes (e.g., bamboo) can be used to construct nest sites for these types of hunting wasps. Two species of hunting wasps, known as "mud daubers" wholly construct their nest from mud. (The **black-and-yellow mud dauber**, *Sceliphron caementarium*, makes fairly compact mud nests; the **organpipe mud dauber**, *Trypoxylon politum*, makes more elongate nest tubes.) The availability of a damp area for mud collection can favor the activity of these species. Hunting wasps are types of solitary wasps, which do not make colonies. All are non-aggressive and the sting of most is very mild and only employed if the insect is pressed against the skin.

The paper wasps of the genus *Polistes* are also predators of many insects. These are one of the social wasps of the Vespidae family, which also includes yellowjackets (*Vespula* spp.) and the baldfaced hornet (*Dolichovespula maculata*). These differ in habit from the hunting wasps in several ways, most notably in being social species that create colonies with dozens of individuals with one dominant egg laying queen. Their nests are made of paper, usually gathered from weathered wood, and they create a

single layer paper comb for rearing young, which are fed chewed up insects that the adults collect. Also, in contrast to the hunting wasps, *Polistes* paper wasps can sting in defense of the hive and have a sting that is painful.

**Additional Resource:** The recently published book, *Farming with Native Beneficial Insects*, produced by the Xerces Society (<http://www.xerces.org/>), provides a thorough treatment on how habitat can be managed to increase the abundance and activity of insect natural enemies.

## Honey Bees

The issue of honey bees (*Apis mellifera*) is more complex than with some other insects found in gardens. These insects are well recognized for their highly beneficial activities as pollinators and as producers of highly valued products such as honey and bees wax. In this regard one may wish to provide plantings that are utilized by honey bees.

Several plants are heavily visited by honey bees with plants in the families Lamiaceae, Asteraceae and Cleomaceae particularly well represented. Several tree species also can be useful for honey bees, particularly for providing early season sources of pollen and/or nectar. Regional lists of plants that are utilized heavily by honey bees are typically available from state beekeeping and the New Jersey Beekeepers Association provides a list of pollen-nectar plants is at: <http://njbeekeepers.org/PollenPlants.htm>

When considering plantings to support local honey bee populations it is also valuable to consider planting pollen/nectar sources that will be available throughout the growing season. For example, some plants that bloom at different periods of the season that can be useful to support honey bees might include the following:

### Earliest flowering plants (April)

|                                 |                      |                         |
|---------------------------------|----------------------|-------------------------|
| Many winter annual Brassicaceae | Dandelion            | Gill-over-the-ground    |
| Andromeda/Fetter bush           | Japanese witch hazel | <i>Deutzia lemoinei</i> |
| Blackhaw                        | <i>Acer</i> spp.     | <i>Salix</i> spp.       |
| Narcissus, crocus, tulips       |                      |                         |

### Later Flowering Plants (May-June)

|                            |  |                         |
|----------------------------|--|-------------------------|
| <i>Prunus</i> spp.         | <i>Crataegus</i> spp.                                | <i>Amelanchier</i> spp. |
| <i>Malus</i> spp.          | <i>Pyrus</i> spp.                                    | <i>Vaccinium</i> spp.   |
| <i>Cornus</i> spp.         | Winter annual Brassicaceae                           | Huckleberry             |
| Winged euonymus            | <i>Ribes</i> spp.                                    | <i>Rubus</i> spp.       |
| <i>Syringa</i> spp.        | <i>Acer</i> spp.                                     | <i>Rhus</i> spp.        |
| Sour Gum                   | Spicebush  | <i>Berberis</i> spp.    |
| <i>Ilex verticillata</i>   | Honeysuckle  | Horsechestnut           |
| Catalpa                    | Black locust   | European linden         |
| Magnolia                   | <i>Weigelia rosea</i>                                | Privet                  |
| <i>Symphiocarpus alnus</i> | "Chickweeds" ( <i>Stellaria</i> , <i>Cerastium</i> ) |                         |
| Clovers                    | Sweetclovers   | Vetch                   |
| Lavender                   | Many mints (Labiatae)                                | Lupine                  |

### Late Season Flowering Plants (July-September)

|                        |                      |                             |
|------------------------|----------------------|-----------------------------|
| <i>Aster</i> spp.      | <i>Solidago</i> spp. | Basswood                    |
| Sage ( <i>Salvia</i> ) | <i>Monarda</i> spp.  | Butterfly-bush              |
| <i>Asclepias</i> spp.  | Buttonbush           | Thistles ( <i>Cirsium</i> ) |

|                             |                                |                        |
|-----------------------------|--------------------------------|------------------------|
| Dwarf sumac                 | <i>Epilobium angustifolium</i> | Golden-rain tree       |
| Sweet pepperbush            | <i>Thymus</i> spp.             | <i>Allium</i> spp.     |
| Purple loosestrife          | Swamp loosestrife              | <i>Verbena</i> spp.    |
| <i>Ceanothus americanus</i> | <i>Spiraea tomentosa</i>       | Joe-Pye weed           |
| <i>Boltonia asteroides</i>  | <i>Polygonum cuspidatum</i>    | <i>Evodan danielli</i> |

On the other hand honey bees can sting. And, although while foraging they are not aggressive and will not sting unless confined (perhaps accidentally), they do often produce anxiety. Large numbers of honey bees foraging at sites with high human traffic may not be desired in some situations

Several plants are not visited by honey bees. Some plants are not normally pollinated by bees and do not suitably provide nectar or pollen. Other horticulturally modified plants may become non-attractive, such as cultivars with “doubled” blossoms. A list of some plants with very little, if any, observed use by honey bees would include:

|                             |                             |
|-----------------------------|-----------------------------|
| <i>Achillea</i>             | <i>Aquilegia</i>            |
| <i>Begonia tuberhybrida</i> | <i>Chrysanthemum</i> (most) |
| <i>Cosmos</i> (doubled)     | <i>Dahlia</i> (doubled)     |
| <i>Geranium</i> (ivy)       | <i>Hosta</i>                |
| <i>Nicotiana</i>            | <i>Nierembergia</i>         |
| <i>Petunia</i>              | <i>Phlox</i>                |
| <i>Vinca</i>                | <i>Viola</i>                |

## Bumble Bees

Honey bees and bumble bees may both visit many of the same flowers. However, bumble bees can access the nectar/pollen from some plants that honey bees do not. Usually these are somewhat deeper flowers or that have their pollen resources more hidden. For example, bumble bees will visit many nightshade family plants (Solanaceae) that are avoided by honey bees, which the bumble bees will “buzz pollinate” to shake the pollen from the blossoms. Some of the plants often visited by bumble bees include the following:

### ***Plants Noted to be Most Heavily Visited by Bumble Bees***

|                                 |                              |
|---------------------------------|------------------------------|
| <i>Agastache rupestris</i>      | <i>Anemone nemorosa</i>      |
| <i>Cuphea</i>                   | <i>Echinacea purpurea</i>    |
| <i>Echinops</i>                 | <i>Hypericum frondosum</i>   |
| <i>Nepeta</i>                   | <i>Penstemon x. mexicali</i> |
| <i>Perovskia atriplicifolia</i> | <i>Sesili gummiferum</i>     |
| <i>Solidago</i>                 | <i>Symphylum officinale</i>  |
| <i>Veronicastrum virginicum</i> | <i>Monarda fistula</i>       |
| <i>Solidago sempervirens</i>    | <i>Helenium autumnale</i>    |
| <i>Gentiana andrewsii</i>       | Highbush blueberry           |

### **High Bumble Bee Use Plants in 2015 CSU Evaluations**

|  |                                    |
|--|------------------------------------|
| <i>Agastache</i> ‘Kudos Silver Blue’           | <i>Agastache</i> ‘Desert Solstice’ |
| <i>Agastache</i> ‘Ava’                         | <i>Agastache foeniculum</i>        |
| <i>Agastache foeniculum</i> ‘Blue Fortune’     | <i>Anchusa azurea</i> ‘Dropmore’   |
| <i>Caryopteris x incana</i>                    | <i>Clematis heracleifolia</i>      |
| <i>Clematis integrifolia</i> ‘Mongolian Bells’ | <i>Echinacea</i> ‘Double Decker’   |
| <i>Erigeron algidus</i>                        | <i>Eupatorium maculatum</i>        |

*Eupatorium rugosum* 'Chocolate'  
*Liatris spicata*  
*Nepeta sibirica*  
*Origanum herrenhausen*  
*Penstemon x mexicali*  
*Salvia ventricilata*  
*Silphium perfoliatum*  
*Veronica* 'Baby Doll'  
*Veronicastrum virginicum*

*Hypericum tetrapterum*  
*Monarda* 'Pink Supreme'  
*Ocimum basilicum* 'Pistou'  
*Oxytropis lambertii*  
*Phlomis alpina*  
*Salvia* 'Evolution White'  
*Veronica spicata* 'Sunny Border Blue'  
*Veronica* 'Vernique Blue'  
*Zinnia* 'Zahara Cherry Improved'

**Additional Resource:** If you wish to identify bumble bees, you may do this by participation in "Project Bumble Bee", coordinated by the Xerces Society (<http://www.xerces.org/>). This has a web site where photos can be submitted. These will be identified and entered into a database to help determine the distribution and abundance of various North American bumble bees.

## Solitary Bees

The overwhelming number of species of bees that are present in North America – some 4000 species – are solitary bees. These do not establish colonies; instead the female establishes some sort of nest that she subsequently provisions with nectar and pollen to rear her young. Among the more common families of solitary bees include Megachilidae (leafcutter, mason, carder bees), Andrenidae (mining bees), Halictidae (sweat bees), Colletidae (plasterer bees), and the digger bees (subfamily Anthoporinae of the Apidae).

As can be expected there is considerable range of habit among this diverse group of bees including nesting habits, timing of life cycles and types of food plants used as nectar and pollen resources. Many of them are quite small bees and may visit rather small flowers. Others are the size of honey bees or larger and many of the solitary bees may specialize in specific types of flowers (e.g., *Peponapis* and squash blossoms).

Three sources of information to guide selection of what types of plants may be useful to support regional native bees include:

*Delaware Native Plants for Native*

*Bees* <http://dda.delaware.gov/plantind/forms/publications/Delaware%20Native%20Plants%20for%20Native%20Bees.pdf>

*Xerces Society list of Pollinator Plants of the Mid-Atlantic Region*

[http://www.xerces.org/wp-content/uploads/2014/09/MidAtlanticPlantList\\_web.pdf](http://www.xerces.org/wp-content/uploads/2014/09/MidAtlanticPlantList_web.pdf)

*National Resources Conservation Service Habitat Development for Pollinators*

[http://plants.usda.gov/pollinators/Habitat\\_Development\\_for\\_Pollinators\\_NJ.pdf](http://plants.usda.gov/pollinators/Habitat_Development_for_Pollinators_NJ.pdf)

## High Native Bee Use Plants in 2015 CSU Evaluations

*Achillea filipendulina* 'Coronation Gold'  
*Bidens* 'Giant White'  
*Bidens* 'Gold Jingle'  
*Capsium anuum* 'Loco'  
*Euphorbia graminea* 'Glitz'  
*Coreopsis verticillata* 'Moonbeam'  
*Dahlia* 'Hypnotica Orange Improved'

*Astranita major* 'Margery Fish'  
*Bidens* 'Rapid Yellow'  
*Bidens* 'Campfire Fireburst'  
*Eupatorium maculatum*  
*Helianthus x maximilliani*  
*Coreopsis tripteris*  
*Dahlia* 'XXL Veracruz'

*Dahlia* 'Hypnotica Tequila Sunrise'  
*Geranium* 'Roazanne'  
*Lobularia maritima* 'Giga White'  
*Lobularia maritima* 'Yolo French Vanilla'  
*Potentilla nevadensis*  
*Zinnia* 'Zahara Double Yellow'

*Dahlia* 'Hypnotica Sangria'  
*Hibiscus* x 'Hardy Hibiscus'  
*Lobularia maritima* 'Yolo White'  
*Ocimum basilicum* 'Pistou'  
*Salvia* 'Fairy Queen'

Availability of nest sites is also important in the success of solitary bees. Most will nest in soil, digging tunnels that may extend a few inches to a foot or more in depth. This is the habit of the digger bees, mining bees, and sweat bees. Typically these nests are easily overlooked and may be partially obscured by rocks or plants. Slope, soil texture, and surface debris are all critical in the selection of a nest site by these bees. It is difficult to develop a site that may be acceptable; instead make effort to conserve nesting sites that have been accepted and are being used.

Others nest above ground in cavities such as may occur between rocks, in wood borer tunnels, or plant stems. Among these are:

**Small carpenter bees (*Ceratina* spp.).** Small carpenter bees similarly nest in the pith of plants, such as caneberries, butterfly bush, ash twigs and other plants. They create cells that are provisioned with plugs of nectar and pollen, separated by wood fibers.

**Mason bees (*Osmia*).** These are solitary bees in the leafcutter bee family, some of which have been heavily promoted as good, early season alternatives to honey bees for pollination of fruit crops. These bees create separate nesting cells through use of mud partitions. Nests that they use are existing cavities. These can be provided by use of predrilled wood blocks, with a diameter of about 1/4-3/8 inch. Alternately, bundled soda straws are useful for nesting.

**Leafcutter bees (*Megachile*).** These are the most commonly recognized of the leafcutter bee family as they produce characteristic semicircular leaf cuts when harvesting leaf fragments for nest construction. These will nest in predrilled wood, similar to the mason bees. They will also excavate their own cavities out of rotten, soft wood. Large diameter branches or stems of pithy plants may be used by some species.

**Carder bees (*Anthidium*).** These leafcutter bees line existing cavities with plant hairs rather than leaf fragments. Lambs'-ear (*Stachys*) is the plant most often noted to be associated with nesting of this species.

**Additional Resource:** *Attracting Native Pollinators*, produced by the Xerces Society (<http://www.xerces.org/>), provides an excellent introduction to the various types of native bees that occur in North America and gives extensive detail on practices that can be used to assist with their needs for food and nesting resources.