

# Gardening for Insects - *or not!*

**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 vary greatly in this regard and many commonly used bedding plants such as geraniums and petunias are rarely visited by butterflies, although the latter may be visited at dusk by the large 'hummingbird moths' which are the adult stage of hornworm caterpillars. Table 1 provides a list of some of the better plants to use for attracting adult butterflies.

However, many butterflies are not primarily nectar feeders, particularly the brushfooted butterflies (Nymphalidae). These may often be seen feeding at sap flows, on fluids of rotting fruit, and even animal dung. Periodically placing cut fruit around the garden or providing fruit-bearing trees may be useful for attracting these species.

**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.)
Bush cinquefolia ( <i>Potentilla fruticosa</i> )	Cosmos ( <i>Cosmos</i> spp.)

<i>Gaillardia</i>	Joe Pye weed
Larkspur	Common lilac
Rubber rabbitbrush ( <i>Ericameria nauseosus</i> )	New England Aster
Sunflower ( <i>Helianthus</i> )	Sweet pea
Thistles (multiple genera)	Purple coneflower ( <i>Echinacea</i> )
Verbena	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 (Table 2). These plants are actively sought by the female butterflies for egg laying and the presence of caterpillar foods can allow establishment of a 'native' population of butterflies. 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.

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. (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.

Unfortunately, in much of Colorado there is now an even more important factor that can limit success of butterfly gardens, the **European paper wasp** (*Polistes dominula*). This relatively recently arrived insect (ca. 2000) feeds its young chewed up insect prey that they collect - and caterpillars are particularly favored. This insect has greatly reduced the survival of many kinds of caterpillars - notably "cabbageworms" and "tomato hornworms" - but also including caterpillars that transform to desirable butterflies.

**Table 2. Plants used by the caterpillar stage of several butterflies**

Butterfly	Caterpillar food plants
Painted lady	Thistles, hollyhock, mallow, various legumes
Western tiger swallowtail	Aspen, willows, wild cherry, ash
Twotailed swallowtail	Ash, chokecherry, hoptree
Alfalfa butterfly/Orange sulfur	Alfalfa, sweetclover, other pea family (Fabaceae) plants
Clouded Sulfur	Alfalfa, clover
Checkered white	Many plants in the family Brassicaceae, <i>Cleome</i>
Imported cabbageworm/Cabbage butterfly	Mustards (including broccoli, cabbage, etc.)
Monarch	Milkweeds ( <i>Asclepias</i> ) <sup>1</sup>
Milbert's tortoiseshell	Nettles
Mourning cloak	Willow, aspen, elm, hackberry
Buckeye	Snapdragons, toadflax, plantain,
Weidemeyer's Admiral	Willow, aspen, cottonwood
Hackberry Butterfly	Hackberry
Mourning Cloak	Willow, aspen, elm, cottonwood
Wood Nymph	Grasses
Melissa Blue	Wild licorice, alfalfa, other plants
Variegated Fritillary	Pansy, <i>Viola</i> , flax, many other plants
Edward's Fritillary	Nuttall's violet
Gorgone's Checkerspot	Sunflower
Checkered Skipper	Mallow, hollyhock
Silverspotted Skipper	Wild licorice, locust, others

<sup>1</sup> *Asclepias* species that are particularly good for rearing caterpillars of the monarch butterfly include *A. tuberosa* (commonly available in nursery trade), *A. syriaca* (the common wild species); *A. incarnata* (a wetland species); and *A. curassavica* (a tender perennial that will not overwinter)

**Related Fact Sheets for the Butterflies Section:** [Attracting Butterflies to the Garden Fact Sheet 5.504](#), [Black Swallowtail/Parsleyworm](#), [Twotailed Swallowtail](#), [Painted Lady](#), [European Paper Wasp Fact Sheet 5.611](#),

**Additional resources:** Butterflies and Moths of North America can generate a county-level checklist of butterflies and moths (<http://www.butterfliesandmoths.org/checklists>) and provides basic information on biology and larval hosts for many species. Other image rich sources include BugGuide (<http://bugguide.net/node/view/15740>), which also provides distribution records, and IPMImages (<http://www.ipmimages.org/>) which not only has an extensive inventory of images of all sorts of insects but does allow use of these images for educational/non-profit purposes with appropriate accreditation.

### Notes on 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 the western US is the **whitelined sphinx**, *Hyles lineata*. Several other sphinx moths fly during the day, including those associated with ash and the various "**bumble bee clearwing sphinx**" (*Hemaris* spp.), that superficially resemble bumble bees. (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, most often they use deep flowers high in nectar. Many of these flowers are also used by hummingbirds.

**Table 3.** Some good plants to plant for inviting visitation by “hummingbird moths”

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Agastache (many)	Wild bergamot
Evening primrose ( <i>Oenothera</i> )	Four o'clocks ( <i>Mirabilis</i> )
Gentian	Honeysuckle*
Larkspurs	Catmint
Datura	Nasturtium
Winecup	

\*Honeysuckle also supports the larval stage of the “bumble bee clearwing sphinx”, *Hemaris thysbe*.

Additional references located at the Insect Information Web Site include sheets on “*Bumble Bee Clearwing Moths*” <http://bspm.agsci.colostate.edu/files/2013/03/Bumble-Bee-Clearwing-Moths.pdf> and “*Hornworms and Hummingbird Moths*” <http://extension.colostate.edu/docs/pubs/insect/05517.pdf> and the “*Whiteline Sphinx*” <http://bspm.agsci.colostate.edu/files/2013/03/Whiteline-sphinx.pdf>

### **Miller Moths and Landscaping**

The adult stage of the insect known as the army cutworm (*Euxoa auxiliaris*) is regionally known as the “miller moth”. This insect makes an annual migration in late spring from the eastern plains to the mountains, during which it crosses the major population centers of the Front Range. At this time many of the moths incidentally enter buildings and vehicles, which can be considered a significant nuisance.

A common observation made during the miller moth migrations is that some homes/buildings tend to have many more moths indoors than do other nearby homes/buildings. Although this may have several causes (e.g., unsealed entry points into structures, outdoor lighting) landscaping is probably most important in determining the number of moths around a building.

During migrations miller moths are seeking nectar sources and suitable daytime shelters. The former is provided by flowering plants present on a property during miller moth migration periods, which usually occur between early May and mid-June. If miller moth flights are early, flowering fruit trees and lilac are very heavily used by the moths (as are dandelions). Spirea and cotoneaster are plants commonly used by miller moths used a bit later in the season. Late in the course of the miller moth flights the most important plant that they use is often Russian olive.

During daytime, miller moths settle in dark areas for shelter (including cracks and crevices buildings and vehicles provide). Dense vegetation is particularly favored, such as is provided by sheared shrubbery and densely growing evergreens.

Homes/buildings surrounded by property with large amounts of favorable flowering plants coincident with miller moth migrations, and the presence of dense daytime shelter spots will likely have many more miller moths than properties that lack these food and shelter needs.

A sheet on “Questions and Answers about Miller Moths” is available at: <https://webdoc.agsci.colostate.edu/bspm/Millermoths2017.pdf>

### **Landscape to Conserve/Enhance Natural Enemies of Insects-Principles**

**Do not kill them.** Many of the natural enemies may be mistaken for something thought to harm plants – such as a lady beetle larva. Pest management in the garden should take

their activity into consideration – such as by using insecticides only in manners that are compatible with these beneficial insects.

**Provide foods for the adults.** Many of the natural enemies switch to foods different from what the use in the immature stage. Sources of nectar and/or pollen are often needed by many insects.

**Provide food needs for the immature stages.** The food needs for the immature stages of natural enemies are other insects. These can be provided by tolerating – maybe even encouraging - insects that do not damage plants. Diversifying plantings often will provide a more continuous source of different kinds of insects needed by natural enemies.

**Provide nesting sites, if needed.** Some natural enemies, the hunting wasps, create nests and provision them with captured insect (or spider) prey to feed their young. Different hunting wasps will nest in different sites.

**Additional Resource:** *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. For additional information on the subject of improving habitat for natural enemies of insect pests, search “**conservation biological control**”.

### 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 pollen or nectar to mature eggs. Many other insects use pollen and nectar (and 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.

**Table 4. 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> )
Ammi	Queen Anne’s lace
Sweet alyssum ( <i>Lobularia maritima</i> )	Basket-of-gold ( <i>Aurinia saxatilis</i> )
Yarrow ( <i>Achillea</i> )	Carpenter bugleweed ( <i>Ajuga reptans</i> )

Lavender globe lily (*Allium tanguticum*)  
Master wort (*Astrantia major*)  
Four-wing saltbush (*Atriplex canescens*)  
  
English lavender (*Lavandula angustifolia*)  
Edging lobelia (*Lobelia erinus*)  
*Monarda fistulosa*  
Sulfur cinquefoil (*Potentilla recta*)  
*Solidago virgaurea*  
  
Spike speedwell (*Veronica spicata*)

Dyer's camomille (*Anthemis tinctoria*)  
Dwarf alpine aster (*Aster alpinus*)  
Purple poppy mallow (*Callirhoe involucrata*)  
Sea lavender (*Limonium latifolium*)  
*Mentha x piperite*  
*Penstemon strictus*  
*Sedum*  
Crimson thyme (*Thymus serpyllum coccineus*)

### Shelter/Nesting Needs for Some Hunting Wasps

A large group of often overlooked wasps are the “hunting wasps”. These are solitary wasps, and do not make a colony. Instead the mother wasp searches for suitable prey to support her young, catches and paralyzes it, then draws it back to a nest. Nests are variously constructed in soil, in the pith of plants or other cavities, and in the case of mud daubers, are constructed out of mud.

There are three families of wasps that hunt: Sphecidae, Crabronidae, and Pompilidae. These are non-aggressive species, and will only sting if physically captured (often difficult to do!) and held/confined next to the skin – and most have a mild sting.

**Ground nesting hunting wasps.** Most species of hunting wasps nest in soil. Soil type/texture is important and nesting may be concentrated in small areas. (Note: Many solitary bees also nest in this manner).

**Pith nesting hunting wasps.** Several kinds of small hunting wasps will enter the cut ends of pithy plants and excavate a cavity within the cane/stem. A common group, but by no means the only ones, are wasps in the genus *Pemphredon* that specialize in hunting aphids, which they paralyze and cache within the pith of plants. They will often nest in cut rose canes; their subsequent nesting is confined to the pith area and causes very little, if any, harm to the plant. (Note: Some solitary bees – small carpenter bees and leafcutter bees – may also nest in this manner).

**Cavity nesting hunting wasps.** Some hunting wasps will use an existing cavity for nesting – an old borer hole, a crack in bark, or a space under a rock. (Note: Many solitary bees also nest in this manner).

**Mud daubers.** Mud daubers construct nests of mud. The nests are in the form of cells and the adult wasps provision them with various kinds of spiders, which the young then consume. There now are two species of mud daubers in Colorado. Most common is the [black-and-yellow mud dauber](#) (*Sceliphron caementarium*) that produces a mud nest in the form of a clump of tubes. Nests are commonly established on the sides of buildings under some overhang shelter. More recently, parts of Colorado have been colonized by

the [Asian mud dauber](#) (*Sceliphron curvatum*), which makes single-cell “pots” in cavities, such as are often found around windows.

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**A Great You-Tube regarding Pollinators!.** David Cappaert, a Biology teacher in Connecticut, made a wonderful video recording all of the insects (52+ species!) that visited the flowers of a single patch of mountain mint in a single day. It can be seen at: <https://vimeo.com/241105593>

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## 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.

On the other hand they 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

The following is a list of plants that are highly visited by bees - the “Bee List”. It is followed by plants that are not visited by bees. These constitute the extremes among over several hundred plants that were evaluated between 2006-2016.

Several plants are heavily visited by honey bees with plants in the families Lamiaceae, Asteraceae and Cleomaceae particularly well represented:

### The “Bee List” (Plants Highly Favored)

*Agastache foeniculum*

*Aster novae-angliae*

*Berlandiera lyrata*

*Bulbine frutescens*

*Campsis radicans*

*Caryopteris x incana*

*Chamaebatiaria millefolium*

*Cleome*

*Cotoneaster*

*Dahlia ‘Hypnotica Tropical Breeze’*

*Dahlia ‘Hypnotic Lavender’*

*Digiplexis ‘Illumination Raspberry’*

*Digitalis ‘Foxlight Ruby Glow’*

*Eremurus stenophyllus*

*Allium tangiticum*

*Berkheya purpurea*

*Bidens ferulifolia ‘Giant White’*

*Calamintha nepeta ssp. glandulosa*

*Caryopteris ‘Blue Mist Spirea’*

*Celosia ‘Intenz Dark Purple’*

*Chrysanthemum serotinum*

*Coleus ‘Premium Sun Lime Sand’*

*Dahlia ‘Dahlightful Georgia Peach’*

*Dahlia ‘Mystic Illusion’*

*Diascia ‘Flirtation Glacier White’*

*Digiplexis ‘Illumination Flame’*

*Echinops exalta*

*Ericameria nauseosa*

<i>Eriogonum jamesii</i>	<i>Eryngium giganteum</i> “Miss Willmott’s Ghost”
<i>Euphorbia</i> “Diamond Frost”	<i>Euphorbia</i> ‘Glamour’
<i>Gaillardia</i> ‘Arizona Red Shades’	<i>Gaillardia aristata</i>
<i>Geranium</i> ‘Jolly Bee’	<i>Geranium himalayense</i>
<i>Helianthus</i> ‘Lemon Queen’	<i>Heliotropium</i>
<i>Heptacodium miconioides</i>	<i>Inula royleana</i>
<i>Kniphofia typhoides</i>	<i>Lantana</i> ‘Lucky White’
<i>Lantana</i> ‘Lucky Lemon Glow’	<i>Lantana</i> ‘Lucky Pot of Gold’
<i>Lavatera thuringiaca</i>	<i>Malva alcea</i>
<i>Nepeta cataria</i>	<i>Nepeta x fausonii</i> <i>Ocimum</i>
<i>Origanum</i>	<i>Origanum</i> “Hopley’s Purple”
<i>Penstemon eatonii</i>	<i>Persicaria amplexicaulis</i> ‘Taurus’
<i>Salvia nemorosa</i>	<i>Salvia sylvestris</i> ‘Blue Hill’
<i>Salvia</i> ‘Black and Bloom’	<i>Satureja montana</i>
<i>Scabiosa</i>	<i>Scaevola</i> ‘Trix Fairy’
<i>Sedum spectabile</i>	<i>Senecio</i>
<i>Silphium laciniatum</i>	<i>Solidago</i>
<i>Spirea x bumalda</i>	<i>Teucrium chamaedrys</i>
<i>Teucrium orientale</i>	<i>Thymus kotschyanus</i>
<i>Thymus vulgaris</i>	<i>Tilia</i> (linden, basswood)
<i>Verbena bonariensis</i> ‘Finesse’	<i>Veronica spicata</i>
<i>Veronica longifolia</i>	<i>Veronica</i> ‘Vernique Blue’
<i>Veronica</i> ‘Vernique Rose’	

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. Native plants tend not to be very attractive to honey bees, as honey bees are not native to North America.

**Great Website on Honey Bee Health Issues:** eExtension has a web site “Bee Health” that is accessed at: <https://bee-health.extension.org/>

### **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 since bumble bees “buzz pollinate” and can shake the

pollen from blossom. Some of the plants often visited by bumble bees include the following:

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

<i>Agastache</i> 'Kudos Silver Blue'	<i>Agastache</i> 'Desert Solstice'
<i>Agastache</i> 'Ava'	<i>Agastache foeniculum</i>
<i>Agastache rupestris</i>	<i>Anchusa azurea</i> 'Dropmore'
<i>Anemone nemorosa</i>	<i>Caryopteris x incana</i>
<i>Clematis heracleifolia</i>	<i>Clematis integrifolia</i> 'Mongolian Bells'
<i>Cuphea</i>	<i>Echinacea</i> 'Double Decker'
<i>Echinacea purpurea</i>	<i>Echinops</i>
<i>Erigeron albidus</i>	<i>Eupatorium maculatum</i>
<i>Eupatorium rugosum</i> 'Chocolate'	<i>Hypericum tetrapterum</i>
<i>Hypericum frondosum</i>	<i>Liatris spicata</i> <i>Monarda</i> 'Pink Supreme'
<i>Nepeta sibirica</i>	<i>Ocimum basilicum</i> 'Pistou'
<i>Origanum herrenhausen</i>	<i>Oxytropis lambertii</i>
<i>Penstemon x mexicali</i>	<i>Penstemon x. mexicali</i>
<i>Perovskia atriplicifolia</i>	<i>Phlomis alpina</i>
<i>Salvia ventricilata</i> <i>Salvia</i> 'Evolution White'	<i>Sesili gummiferum</i>
<i>Silphium perfoliatum</i>	<i>Solidago</i>
<i>Symphylum officinale</i>	<i>Veronica spicata</i> 'Sunny Border Blue'
<i>Veronica</i> 'Baby Doll'	<i>Veronica</i> 'Vernique Blue'
<i>Veronicastrum virginicum</i>	<i>Zinnia</i> 'Zahara Cherry Improved'

**Fact Sheets, Additional Resources:** [Bumble bees](#), [Bumble Bees in the Western United States](#)

**Shelter/Nesting Needs of Solitary Bees**

The overwhelming majority of Colorado's bees are solitary bees, which do not produce a colony. Instead the mother locates/creates some nest site then provisions nest cells with nectar/pollen to support her developing young. Different kinds of bees nest in different types of sites, and in some cases availability of suitable nest sites limits their activity.

**Ground nesting bees (andrenid/miner bees, digger bees, sweat bees).** Several groups of solitary bees nest in soil, rather than using aboveground cavities. 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 used by these bees; instead conservation of bee nesting sites that have been accepted and used by the bees is recommended.

**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 (ca 3/8 inch). 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.

**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.

**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.

**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.

**Related Extension Fact Sheets:** [Attracting Native Bees to Your Landscape Fact Sheet 5.615](#), [Creating Pollinator Habitat Fact Sheet 5.616](#), [Leafcutter Bees Fact Sheet 5.576](#), [Wool Carder Bee](#).

**Additional Resources:** *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. Another great source on improving habitat for native bees is produced by Utah State University, entitled [Gardening for Native Bees in Utah and Beyond](#).

### Mulch and Insect Migrations into Homes

The use of mulch is a desirable practice for gardening in the region. However, the heavy use of some mulches – such as shredded bark/wood – when placed adjacent to building foundations can increase incidence of some insects entering buildings. This is particularly true for species that use the mulch for cover or that thrive in the conditions of relatively higher humidity that the mulches provide.

Some of the arthropods that may use increase within mulched sites – and then incidentally wander indoors – include the following:

Sowbugs/[Pillbugs \(roly-poly\)](#)

[Millipedes](#), [Duff millipedes](#)

[Springtails](#)

[Pillbug hunter spider \(\*Dysdera crocata\*\)](#)

[Earwigs](#)

[Funnel weaver spiders](#)

### Landscape Plants and as Hosts of Nuisance Invaders of Buildings

Several kinds of insects have the habit of incidentally entering buildings or using them as a site for season shelter (usually overwintering). Some of these nuisance invaders and their landscape source include:

Insect

[Boxelder bug](#)

Associated host plant

Breed on boxelder seeds

[Western conifer-seed bug](#)

Breed on cones of conifers

[Cluster flies](#)

Breed as parasites of certain earthworms

Hackberry blistergall psyllid

Develop in galls of hackberry leaves

[Elm leaf beetle](#)

Develop on leaves of elms

[Elm seed bug](#)

Develop on the seeds of Siberian elm

[Goldenrain tree bug](#)

Feeds on seeds of goldenrain tree

[False chinch bugs](#)

Many plants, particularly weedy mustards

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