

Sally Scalera, Urban Horticulture Agent

FS# 7100HORT

Gardening for Pollinators - Bees

Why is gardening for pollinators important?

...Because we couldn't live without pollinators! Pollinators provide cross-pollination, a transfer of pollen from one plant to another, which is needed to produce as blueberries, apples, oranges, cucumbers, watermelon and many of the other fruits and vegetables. Providing pollinators (e.g. bees, butterflies, wasps, ants, moths, flies, beetles and hummingbirds) food and habitat that is pesticide free is the primary goal.

Bees are the primary pollinators that we depend upon because they deliberately forage for pollen and visit specific plant species during any given foraging trip. This is known as 'flower constancy'. This is beneficial because the pollen is not wasted on the wrong species of flower. Flower constancy also explains how beekeepers are able to produce specific types of honey like orange blossom or tupelo. In comparison to bees, butterflies are actually going for nectar and might just accidentally carry pollen with them to other flowers.

The basics:

- Honeybees prefer white, yellow, purple and blue (they can't even see the color red!) they broad petal, daisy-like flowers that provide large landing pads. They need both pollen and nectar to feed the hive.
- Native bees prefer fruit producing trees and shrubs as well as native plants. They have short life spans and prefer a variety of flower types throughout the year.
- Florida has 316 native species. Of those, approximately 70% nest in the ground by digging a tunnel in bare or semi-bare, well-draining soil, with the remaining 30% nesting in cavities.

The 'how-to' of gardening for pollinators:

- Choose plants that bloom throughout the year or in succession during the growing season so that pollinators always have a good supply of food.
- Plant a variety of plants that provide the pollinators food. A standard pollinator garden includes a mix of trees, shrubs, perennials, herbs and annuals.
- Plant mainly native plants because our native pollinators are more efficient and effective at foraging from these flowers.
- Provide a variety of flower colors, sizes and shapes that will appeal to a variety of pollinators.
- Try to eliminate the use of harsh pesticides such as insecticides containing neonicotinoids. These insecticides are systemic chemicals that are absorbed by the plant through the root system and carried throughout it. Systemic insecticides make the plant toxic to aphids, whitefly, mealybugs, and scale as well as pollinators like bees gathering pollen or nectar. So, avoid the use of any insecticides with the following neonicotinoid active ingredients:

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dinotefuran, imidacloprid, thiamethoxam and clothianidin. Also avoid spraying contact insecticides such as pyrethroids such as bifenthrin when bees are active.

- Both bees and butterflies get their water and minerals from shallow mud puddles, called puddling. Having bare soil provides a place for the bees to get water.
- The majority of plants that attract pollinators require locations that receive full sun, which is a minimum of 6 hours of direct sunlight a day. Although it is not impossible to attract them in partially sunny locations, the plant choices are more limited.
- Avoid disturbing the soil as much as possible to protect flower seed beds. Disturbing soil can result in burying desirable seeds too deeply and bringing weed seeds up to the surface where they can germinate. Disturbing the soil can also destroy the nests of ground dwelling bees.
- The shrub *Cyrilla racemiflora* (Summer Titi) is not listed because it is toxic to bees. If diluted with other nectars this may not cause a problem, but under periods of drought, Summer Titi may be the only nectar available. This could poison entire colonies.
- The vine *Gelsemium sempervirens* (Yellow jessamine) is not listed because the nectar is poisonous to bees and humans!

Pollinator Plant List for Bees

(*native plants, NN-not noticeable)

Large Trees (grow 50 feet or more)

Scientific name

*Acer rubrum**

*Ficus aurea**

*Magnolia grandiflora**

Nyssa sylvatica var. *biflora**

*Quercus virginiana**

*Quercus laurifolia**

Common name

Red maple (red)

Strangler fig (NN)

Southern Magnolia (white)

Swamp tupelo (white)

Southern live oak (NN)

Laurel oak (NN)

Blooming period

spring, winter

all year, peak spring-summer

spring, summer

spring

spring

spring

Medium Trees (grow 25 to 50 feet tall)

Scientific name

*Avicennia germinans**

*Coccoloba uvifera**

*Ilex opaca**

*Laguncularia racemosa**

*Persea borbonia**

*Prunus caroliniana**

*Quercus laevis**

*Quercus nigra**

Common name

Black mangrove (white)

Seagrape (white)

American holly (white)

White mangrove (white)

Florida red bay (NN)

Cherry laurel (white)

Turkey oak (NN)

Water oak (NN)

Blooming period

June & July

winter

spring

spring

spring

spring

spring

spring

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Small Trees (may grow up to 25 feet maximum)

<u>Scientific name</u>	<u>Common name</u>	<u>Blooming period</u>
<i>Acacia farnesiana</i> *	Sweet acacia (yellow)	year round
<i>Callistemon citrinus</i>	Red bottlebrush (red)	spring, summer
<i>Cercis canadensis</i> *	Redbud (fushia)	spring
<i>Ilex cassine</i> *	Dahoon holly (white)	spring
<i>Ilex vomitoria</i> *	Yaupon holly (white)	spring
<i>Persea palustris</i> *	Swamp bay (white)	early spring
<i>Prunus angustifolia</i> *	Chickasaw plum (white)	winter
<i>Quercus geminata</i> *	Sand live oak (NN)	March, April, May
<i>Quercus myrtifolia</i> *	Myrtle oak (NN)	spring
<i>Sideroxylon tenax</i> *	Tough buckthorn (white)	May and June

Palm – all palms are great and here is a list of our native palms

<u>Scientific name</u>	<u>Common name</u>	<u>Blooming period</u>
<i>Sabal minor</i> *	Dwarf palmetto (white)	May and June
<i>Sabal palmetto</i> *	Cabbage palm (white)	June and July
<i>Serenoa repens</i> *	Saw palmetto (white)	April through July
<i>Serenoa repens</i> 'Silver'	Silver saw palmetto (white)	April through July

Shrubs

<u>Scientific name</u>	<u>Common name</u>	<u>Blooming period</u>
<i>Callicarpa americana</i> *	Beautyberry (lavender)	spring
<i>Baccharis halimifolia</i> *	Saltbush (white)	fall
<i>Buddleja madagascariensis</i>	Butterfly bush (yellow)	spring, summer
<i>Capparis cynophallophora</i> *	Jamaica caper (white)	spring
<i>Ilex glabra</i> *	Gallberry (white)	spring
<i>Lantana montevidensis</i> *	Trailing lantana (pale purple)	summer, fall
<i>Senna ligustrina</i> *	Bahama cassia (yellow)	late summer through fall
<i>Senna mexicana</i> var. <i>chapmanii</i> *	Chapman's Bahama cassia (yellow)	all year
<i>Vaccinium corymbosum</i> *	Highbush blueberry (white)	May to June
<i>Vaccinium darrowii</i> *	Southern highbush blueberry (white)	March, April
<i>Vaccinium myrsinites</i> *	Shiny blueberry (white)	late winter to early spring
<i>Viburnum obovatum</i> *	Walter's viburnum (white)	spring

Vines

<u>Scientific name</u>	<u>Common name</u>	<u>Blooming period</u>
<i>Passiflora suberosa</i> *	Corkystem passionflower (NN)	all year

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Perennials

Scientific name

*Achillea millefolium**
Agapanthus africanus
*Asclepias incarnata**
*Asclepias perennis**
*Asclepias tuberosa**
Aster spp.
Bulbine frutescens
*Canna flaccida**
Canna x generalis
*Carphephorus carnosus**
*Carphephorus corymbosus**
*Eragrostis elliottii**
*Eragrostis spectabilis**
*Helianthus angustifolius**
*Helianthus debilis**
*Heliotropium polyphyllum**
*Hypericum tenuifolium**
Liatris tenuifolia var. *quadriflora**
*Licania michauxii**
*Mimosa strigillosa**
Muhlenbergia capillaris var. *capillaris**
Pentas lanceolata
*Pontederia cordata** (aquatic)
Rudbeckia hirta
*Ruellia caroliniensis**

Common name

Yarrow (white)
Lily of the Nile (purple)
Swamp milkweed (pink)
Aquatic milkweed (white)
Butterfly weed (red, yellow)
Aster (lavender, pink, etc.)
Yellow bulbine (yellow)
Golden canna (yellow)
Canna lily (yellow, pink)
Bald-headed carphephorus (lavender)
Florida paintbrush (lavender)
Elliott's lovegrass (white)
Purple lovegrass (purple)
Narrow-leaf sunflower (yellow)
Dune sunflower (yellow)
Pineland heliotrope (yellow)
St. Johnswort (yellow)
Narrow-leaved liatrus (lavender)
Gopher-apple (green)
Sunshine mimosa (pink)
Muhlygrass (mauve)
Pentas (red, pink, lavender)
Pickerel weed (purple-blue)
Black-eyed Susan (yellow)
Wild petunia (blue, violet)

Blooming period

spring, summer, fall
spring, summer
summer
summer
spring, summer
summer, fall
spring, fall
summer
summer
June-November
late summer through mid-fall
mid-summer to early fall
August, September, October
fall
year round
year round
summer
late fall
summer
spring to summer
fall
most of the year
spring through fall
summer through fall
spring through fall

Herbs

Scientific name

Agastache foeniculum
Allium schoenoprasum
Allium tuberosum
Anethum graveolens
Coriandrum sativum
Foeniculum vulgare
Hyssop officinalis
Lavendula latifolia
Lavendula stoechas
Lavendula vera
Melissa officinalis
Mentha spp.
Ocimum basilicum

Common name

Blue giant hyssop (blue)
Chives (lavender)
Garlic chives (white)
Dill (yellow)
Coriander & Cilantro (white)
Fennel (yellow)
Hyssop (blue or violet)
Spanish lavender (purple)
French lavender (purple)
Sweet lavender (purple)
Lemon balm (white)
Mints (purple, pink or white)
Sweet basil (white, blue, pink)

Blooming period

June to September
summer
late summer to early fall
July to September
spring, summer
July through October
summer
throughout the year
throughout the year
throughout the year
July through September
summer
summer

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Herbs

<u>Scientific name</u>	<u>Common name</u>	<u>Blooming period</u>
<i>Ocimum kilimandscharicum</i>	African blue basil (blue)	all year long
<i>Origanum majorana</i>	Marjoram (white or pink)	end of summer
<i>Pelargonium</i> spp.	Scented geraniums (variety)	varies
<i>Tagetes lucida</i>	Mexican tarragon (yellow)	fall
<i>Thymus</i> spp.	Thyme (lilac to pink)	summer

Annuals/Wildflowers

<u>Scientific name</u>	<u>Common name</u>	<u>Blooming period</u>
<i>Berlandiera subacaulis</i> *	Greeneyes (yellow w/green center)	any time of the year
<i>Bidens laevis</i> *	Burr marigold (yellow)	November into December
<i>Chamaecrista fasciculata</i> *	Partridge pea (yellow)	mid-summer to mid-fall
<i>Chrysopsis mariana</i> *	Goldenaster (yellow)	fall
<i>Echinacea purpurea</i> *	Purple coneflower (purple)	summer
<i>Flaveria linearis</i> *	Yellowtop (yellow)	summer, fall
<i>Liatris gracilis</i> *	Blazing star (purple)	late summer to fall
<i>Liatris spicata</i> *	Blazing star (purple)	July through September
<i>Monarda punctata</i> *	Dotted horsemint (pink)	summer
<i>Penstemon multiflorus</i> *	Beardtongue (white)	mid-spring to early fall
<i>Silphium asteriscus</i> *	Starry rosinweed (yellow)	mid-spring to early fall
<i>Solidago odora</i> var. <i>chapmanii</i> *	Chapman's goldenrod (yellow)	summer
<i>Solidago sempervirens</i> *	Seaside goldenrod (yellow)	October into November
<i>Symphotrichum carolinianum</i> *	Climbing aster (lavender)	November, December
<i>Tagetes</i> spp.	Marigold (variety)	spring through fall
<i>Taraxacum officinale</i>	Dandelion (yellow)	late spring through summer
<i>Tradescantia ohiensis</i> *	Spiderwort (blue)	May through July
<i>Trichostema dichotomum</i> *	Blue curls (blue)	summer into fall
<i>Tropaeolum majus</i>	Nasturtium (variety)	spring and fall
<i>Viola odorata</i> *	Sweet violet (purple)	spring and fall
<i>Vernonia angustifolia</i> *	Narrow-leaf Ironweed (purple)	mid-September
<i>Vernonia gigantea</i> *	Giant ironweed (purple)	August, September, October
<i>Zinnia</i> spp.	Zinnia (wide variety)	2 months after planting

Native Plant Nurseries

Maple Street Natives 7619 Henry Ave. W. Melbourne, FL 32904 321-729-6857 www.maplestreetnatives.com	Green Images 1333 Taylor Creek Rd. Christmas, FL 32709 407-568-1333 www.greenimagesnursery.com	Biosphere 14908 Tilden Rd. Winter Garden, FL 34787 407-656-8277 www.biospherenursery.com
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Helpful Websites

<http://www.fws.gov/pollinators/PollinatorPages/YourHelp.html> U.S. Fish & Wildlife Service Pollinators
<http://www.xerces.org/> For Invertebrate Conservation!
<http://flawildflowers.org/index.php> Florida Wildflower Foundation