Native Bees
Gardeners’ Best Friends
By Michelle Peterson
Honey Bees vs. Native Bees
Honey Bees

- Eusocial
- Live in a colony of thousands built out of wax honeycomb they construct
- Make lots of honey
- Generalist pollinators
- Protective of their colony which they defend with their stingers (their lives)
- Managing colonies requires investment in supplies, equipment, gear and bees

Native Bees

- Mostly solitary
- Live in a narrow nest either below ground or in wood cavities near the ground
- Most make no honey
- Often specific pollinators
- Often stingless, or will only sting if handled, provoked, or lives are threatened
- No need to manage colonies; easy to create habitat that attracts natives
Native Bees Are Plentiful

- Over 4,000 species of native bees in North America
- Over 300 species of native bees in Florida
What Are Some Florida Native Bees?
Bumble Bees (*Bombus spp.*)

- Large and fuzzy and noisy
- Early risers
- Nest in tufts of grass or shallow underground cavities, abandoned mouse holes, or in wooden cavities
- Primitive social structure: mated queen overwinters in hibernation, produces females who later produce drones that they mate with before winter
- Makes “honey” to feed brood
- Fly long distances loaded with pollen
- Pollinate via sonication or buzz pollination
Carpenter Bees (Xylocopa spp.)

• Large and resemble Bumble Bee, but have wide, glossy abdomen
• Can be yellow and black, or all black
• Construct nests in trees or wooden structures, laying eggs and leaving bee bread behind for overwintering larvae
• Have large jaws used to excavate wood
• Females are bluish-black in color and can sting
• Male bees protect the nest, are blond or tan in color and can't sting
• Like to rob nectar by slitting holes in flowers, so flowers may go unpollinated
Metallic Sweat Bee
(Halictidae spp)

• Solitary, ground nesting bees so named because of their attraction to the salt in human sweat
• Brilliant iridescent colors of green, blue, red, brown (mostly green in FL)
• Range in size from 4 to 10 mm
• Males (stingless) pinch or bite and females sting if squeezed or squashed
• Pain of sting is supposed to be mild
• Males have yellow faces
• Important pollinators of flowering fruit and seed plants
Southeastern Blueberry Bee  
(Habropoda laboriosa)

- Resembles a small bumble bee
- Solitary, ground-nesting bee
- Sonicates like bumble bees
- Visits orchards and flowering plants, like blueberries
- Seen in FL from Nov to Feb
- Only active for a few weeks
- Strong fliers and fast foragers
- Visit a variety of flowers throughout the day – important native pollinators
Small Carpenter Bee

*Ceratina cockerelli*

- About 1/3 size of the carpenter bee (8mm:20mm) – size of a grain of rice
- Black, bluish-green or blue with white or yellow markings
- Excavates nest in twigs and stems for females to overwinter
- Have ability to sting
- Not much know about their importance in the garden, but they do pollinate
Miner Bee / Digger Bee
(Andrena spp.)

- Solitary ground-nesting native that resembles honey bee in shape and size
- In Springtime, selects nest site of dry, exposed, well-drained soil in areas such as banks or hills.
- Often construct nests in large numbers next to one another at a given site.
- Each female mines out a cylindrical hole to raise offspring.
- Good pollinators, but activity decreases in the summer.
Evidence of Miner Bees

• Dirt mounds common Feb (So FL) – Apr (No FL)
• Prefer dry, native soil, and may next in lawn where grass is thin
• Evident for 4-6 weeks, then gone until the following year
• Organic Controls:
  • Correct thin turf areas
  • Water area where present
  • Place organic matter over nest site and they will pick a new location next year
Miner Bee Nests
Leafcutter Bee
(Megachile spp.)

• Size of honey bee but carries pollen on underside
• Nest in rotted wood, rose canes, and other easy to hollow materials - don’t bore into houses
• **Cut round circles from leaves** to pad nest and separate eggs/larvae
• Can sting, but only do when handled
• Adult females live only two months
• Important pollinator of native plants
Leafcutter Bee Nests
Orchard Mason Bee

(*Osmia spp.*)

- Nests = tunnels in wood & other cavities; cap nests with mud
- Usually metallic blue or green
- Carry pollen on their abdomens, like leafcutter bees
- Unlike honeybees, they fly in cool weather
- Seen for 3 months – after males emerge in mid February
- Excellent pollinators and are being considered for commercial use
Long-Horned Bees (*Melissodes* spp.)

- Solitary to communal ground nesters, often seen among native grasses
- Prefer FL woodlands and scrubs
- Stout and robust; hairy and dark; often with pale hair bands on abdomen
- Dense pollen carrying hairs on hind legs; males have antennae as long as body - 7-20 mm.
- Some species are especially attracted to asters, sunflowers, daisies and relatives.
Squash Bee  (*Peponapis pruinosa*)

- Gathers pollen solely from squash, pumpkins and similar cucurbits
- Widely spaced hairs in pollen brush (a patch of hairs for carrying pollen), to cope with pumpkin flowers' large pollen grains.
- Females nest in the ground around the base of plants & males shelter in flowers overnight
- Females are crack-of-dawn foragers; males rise early to find mates; Usually asleep by noon
- Adults live just a few months, from mid to late summer when the squash plants are in flower.
Orchid Bee
*(Euglossa viridissima)*

- Not true native; naturalized from Mexico & Central America
- Collects resin to construct their brood cells
- LOVES nectar and has long tongue (proboscis) to collect it
- Likes to visit perfume orchids
- Can sonicate (buzz pollinate)
- This bee could become a major pollinator in So FL
How to Encourage Native Bees
Conserve Habitat
Support the Local Diversity of Bees
How to Encourage Native Bees

• Stop using insecticides, especially systemic pesticides with Imidacloprid, or any other neonicotinoids
• Use organics, or alternative integrated pest management
How to Encourage Native Bees

• Leave bare soil in undisturbed areas so bees can dig their nests and tunnels.
• Leave some stumps and logs so the wood borers have a place to nest.
• Plant native plants and nectar plants that the bees love.
What are some specific plants?
Tick-seed
(Coreopsis leavenworthii, Coreopsis spp.)
Blanket Flower  *Gaillardia spp.*
Helianthus debilis
Beach sunflower
Salvia riparia
Southern sage
Salvia coccinea
Tropical sage
Aster caroliniensis
Climbing aster
Carolina wild petunia

*Ruellia caroliniensis*
Partridge Pea *Cassia fasciculata*
Powderpuff  *Mimosa strigillosa*
Blazing Star  *Liatris spp.*
Piloblephis
rigida
Pennyroyal
Bee Balm  *Mondara spp.*
Fiddlewood
Citharexylum fruticosum
Walter’s Vibernum
*Viburnum obovatum*
Florida Privet

*Forestiera segregata*
Porterweed  *Stachytarpheta* spp.
Goldenrod
*Solidago spp.*
Wild Coffee  *Psychotria nervosa*
Seagrape  *Coccoloba uvifera*
Saw Palmetto
*Sereona repens*
Cabbage Palm
Sabal Palm
*Sabal palmetto*
Other Garden Favorites Like Herbs
Fruits and Berries
And...

Add Bee Nests to Your Garden
Which Can Be Simple or Primitive
Fun and Funky
Or Very Fancy Indeed
Bee Advice for Gardeners

**DOs**
- Spearmint
- Wear Hats/Gloves
- Wear Loose Clothing
- Choose Lights/Neutrals
- Stay Calm; Hands Down
- Run Away; Find Shelter
- Scrape Out Stinger
- Wash and Ice the Area
- Seek Medical Attention

**DON’Ts**
- Eat Bananas
- Go Barefoot
- Wear Bright Colors
- Wear Botanical Scents
- Take Sweet Drinks Out
- Tramp Through Mulch
- Pull Out Stinger
- Salve the Area
- Ignore Symptoms
Any Questions?

Thank You!