Attracting Native Pollinators

Orchard Bees and Their Environments
To be clear, there are many more aggressive stinging insects in our landscapes. These insects are very important in the ecosystem. They are predators and control the population of harmful pests such as aphids. It is wise to use caution when encountering stinging insects.

This presentation will focus on the docile native bees.
WMU College of Engineering: A living Laboratory

We are all surrounded by opportunities to improve our corner of the world. In Landscape Services, we all spend a lot of time observing and looking for ways to create a healthy and beautiful campus. Every area has potential to integrate components of naturalization to enhance the overall health and aesthetics of the campus as a whole. At the Parkview campus we have unique resources and landscapes. We are able to experiment with ways to support our prairie ecosystem while tending to the traditional landscape around buildings.
Solitary Bees
In Michigan

- There are more than 450 kinds of bees in Michigan, 3600 types of bees in the USA, and 20,000 bee species around the world!
- Leaf Cutting Bees (Megachile spp.) and Blue Orchard Mason Bees (Osmia lignaria) are two species of early spring Orchard Bees.
- Solitary bees such as the Mason and Leafcutter bees are mild mannered and will not sting unless aggressively provoked. The sting is so mild it may not evoke a reaction in people with bee allergies.
- Native bees are much less known than honey bees. Supporting the success of native bees is a win-win for all.
Did you know that bees can only see color on the ultra violet end of the spectrum?
Effective Pollinators

• “A high level of pollination efficiency occurs because mason bees land directly upon the reproductive structures of the fruit tree blossom. The abdomens of foraging female bees are loaded with pollen, and the repeated and direct contact with the anthers and stamens results in sufficient pollen transfer.”

• Native bees like the blue orchard bees are efficient pollinators of native crops. Because collecting pollen is their life work, 250 Mason bees can do the work of 20,000 honey bees.

• There are 140 species of Osmia in North America. They are all known for visiting fruit trees, such as apples, plums, pears, almonds, and peaches.
Solitary Bees, Honey, Bumbles & Wasps and other Pollinators

- Bees perform the majority of pollination. Many other insects and animals help. They include humming birds, beetles, wasps, bats and butterflies, moths and flies.
- Unlike most pollinators, bees bring pollen back to their nest to feed their young. Most pollinators feed on nectar, pollinating unintentionally.
- Bees exhibit “flower constancy”, meaning they repeatedly visit a particular plant species on any given foraging trip. This is important because pollen is wasted if it is delivered to the wrong species.
“Fossil records show that beetles were abundant during the Mesozoic (about 200 million years before present). Beetles were flower visitors of the earliest angiosperms. Many present-day beetle pollination associations like that of Magnolia, a primitive woody angiosperm, have ancient evolutionary origins.”
What's the Difference?

The Solitary Bee
- Native to North America
- Gathers dry loose pollen from head to toe
- Life-span is 4-6 weeks
- Solitary - works alone, all females are queen
- Mild venom will not cause anaphylactic shock
- Gentle and docile
- No hive or honey, less work to raise
- 1 solitary mason bee is equal to 100 honey bees pollinating
- A relatively unknown super-pollinator
- 90% of the worldwide bee species are solitary

The Honey Bee
- Native to Europe
- Sticks pollen to back legs with saliva
- Life-span is 4-6 weeks, queens live longer
- Sociable within species - works in a community
- Venom can induce anaphylactic shock
- Produces delicious honey and wax
- Can be aggressive if hive is threatened
- Well-known, commercially used pollinator
- 7 species out of the 20,000 worldwide species of bees are honey bees

www.CrownBees.com
Fun Fact #3

- Honey bees expanded to North America with human-assisted migration during the 17th century. Many Europeans fleeing wars, poverty, land laws or religious persecution brought extensive beekeeping skills to the United States during the next two centuries.

- Honey bees are such efficient pollinators that industrialized countries developed specialized agriculture dependent upon migratory pollination and one race of honey bee, *Apis mellifera*.

- Honey bees face many challenges such as fungal diseases, viruses, mites and pesticides, the stress of moving hives and insufficient foraging. Colony collapse is believed to be the result of these factors.
The Benefits of Supporting Pollinators

• Nearly 75% of the flowering plants on the earth rely to some degree on pollinators in order to set seed or fruit. One in three mouthfuls of food require the presence of a pollinator. It is important to support all pollinators to create and sustain healthy ecosystems!

• The agricultural economy is dependent on pollinators for continued success.

• Our wildlife depends on an even greater proportion of pollinated plants for survival.

• A quarter of all birds depend on these pollinated fruits and seeds. Pollinators are also food for birds, lizards and spiders making them a keystone species for environmental health.
There are two species of “specialized” native bees that exclusively pollinate squash, pumpkins and gourds.