

# Seasons

## *The Greening of Maplewood*

Summer 2016

### What's the Fuss about Bees?

**By Ginny Gaynor, Natural Resources Coordinator**

In recent years, bees have landed repeatedly in the media spotlight. And while they may not have the allure of iconic species like polar bears, they are creating a lot of excitement here in Maplewood.

Last summer the threatened rusty patched bumble bee was spotted at Maplewood Nature Center (see page 4) and City naturalists launched a three-year pollinator education and monitoring program (see page 3). In the fall of 2015, Representative Leon Lillie hosted a pollinator forum in Maplewood, and Maplewood City Council adopted a pollinator resolution in January 2016 to help protect bees and other pollinators.

Bees are in the headlines because we rely on them for pollination. Pollinators are animals that help transfer pollen between flowers, which ultimately results in the formation of seeds, nuts, and fruits. One-third of the foods we eat depend on insect pollination. And

over 85% of all wild plants depend on insect pollination.

Bees, beetles, ants, and butterflies are all pollinators. But bees are especially effective at pollination; many have specialized structures or hairs that help collect pollen. They are the only pollinators that collect pollen and take it home to feed their young.

The most well-known bee is the non-native European honeybee, which is raised in hives and produces honey. Minnesota usually ranks in the top five states in honey production. But in addition to producing honey, each year Minnesota beekeepers truck trailer loads of hives to California and other states to pollinate orchards and fields of crops such as almonds and sunflowers. Some species of native bees, such as mason bees (also called orchard bees), are also used commercially to pollinate fruit crops.

Decline in pollinator health and populations were first noted in commercial honeybees in the early 2000's, and was labeled colony collapse disorder. Minnesota's 400+ species of native bees are also in jeopardy. Colony collapse disorder is attributed to a combination

of factors: habitat loss; poor nutrition, which leads to depressed immune systems; pests and pathogens; pesticide exposure; and lack of genetic diversity. More recent research suggests a strong link between the decline of bees and a particular group of insecticides known as neonicotinoids that are used in commercial nurseries and agriculture.

Maplewood has a strong track record on supporting pollinators. The City currently uses almost no insecticides in managing grounds and natural areas. We have hundreds of acres of natural areas, and City gardens in bloom with native and pollinator-attracting plants. The Maplewood Nature Center offers classes on pollinators and has a citizen monitoring program for bees. In 2016, staff will develop City landscaping guidelines to support the new pollinator resolution. In addition, the Environmental and Natural Resources Commission is conducting an urban agriculture study to promote more pollinator friendly uses. For tips on what homeowners can do, see page 2. A copy of the pollinator resolution and links to some favorite resources are available at [www.maplewoodmn.gov/pollinators](http://www.maplewoodmn.gov/pollinators).

### What can you do to help bees?



Plant More Flowers



Eliminate or Minimize Pesticide Use



Learn and Value



Provide Habitat

## Backyard Beekeeping

**By Chris Swanson, Environmental Specialist**

Beekeeping can be a fun and rewarding hobby. It provides honey, is a great way to pollinate backyard gardens, and it's fascinating to work with and learn about the bees.

Maplewood resident Cammie Johnson has kept backyard bees for many years. One of her favorite things about backyard beekeeping is how it connects her to nature. By watching the bees she can see what flowers are in bloom, what fruit trees are flowering, and if rain is approaching.

There are a few things to consider before purchasing honeybees and a hive:

- **City Ordinance** - Maplewood does not have a backyard beekeeping ordinance or permit requirements. But the City does have a nuisance ordinance that beekeepers must consider. Before keeping bees, check with your adjacent neighbors to make sure they are not allergic to bees.
- **Cost** - In addition to purchasing bees, backyard beekeeping requires equipment and tools such as a bee hive, bee veil and gloves, hive tools, smoker, bee brush, and honey extractor.
- **Hive Location** - Be thoughtful about your hive placement. The hive should not be near property lines. And if possible, it should be in an area with an abundance of pollen and access to water.
- **Bee Education** - To ensure a successful beekeeping experience, consider a beekeeping class from the U of M Extension: <http://www.beelab.umn.edu/bee-squad/education>



Honeybee Hive



Cammie Johnson Tending to Her Bees

## Bee-Friendly Yards

**By Chris Soutter, Naturalist**

There are simple things we can do in our yards that go a long way to help our native bees.

- **Provide Food** - Bees need flowers that are good sources for nectar (carbohydrates for energy) and pollen (protein, fats, and vitamins for growth). Plants and bees native to our area have been depending on each other for thousands of years—native trees, shrubs, and wildflowers are the best to use in a bee-friendly yard.
- **Provide Sites for Nesting and Overwintering** - Two-thirds of our native bees nest underground. Leave some bare spots in your garden where the soil is loose and in the sun. The other third of our native bees nest in hollow plant stems, small tunnels in wood, or cavities in rocks. When cutting back dead vegetation, leave some 15"-long hollow stems. Or you can bundle the stems together and place them elsewhere in the yard, protected from wind and rain, and in morning sun. For overwintering bees, leave some leaf litter and logs on the ground.
- **Keep Bee Habitat Pesticide-Free** - neonicotinoids are a new class of insecticides commonly sold for yard use and are very toxic to bees. After absorbed by plants, Neonicotinoids are found in all tissues, even in pollen and nectar. Fungicides can weaken a bee's immune system and can reduce beneficial fungi in pollen fed to young. Adopting organic gardening methods that eliminate the use of pesticides helps protect bees.



Garden for Bees

## Planting for Bees

- Plant native species for the best sources of nectar and pollen for bees.
- Avoid cultivars of native plants.
- Choose a variety of colors and shapes of flowers. Blue and yellow are best. Bees don't see red.
- Plant multiples of the same species in a block to help bees find their food more efficiently.
- Provide flowers throughout the growing season.
- If you buy pollinator plants at a nursery, ask if the plant is free of Neonicotinoids.

# Bees and Wanna Bees

By Ann Hutchinson, Lead Naturalist

A bee is a bee is a bee....or is it?



Lori Molleran

Short-tongued green sweat bees prefer to visit open shallow flowers such as azure aster.



Oakley Blesanz

Bumble bees with long tongues can access flowers with tube shapes, such as Virginia mountain mint.

Bees and their flowers have complex relationships. Flowers employ many tricks to attract their lovers! Combine a bright color with a sweet fragrance, and mayhap you'll get a visitor. Columbine's long corollas attract bumble bees with long tongues, while brown-eyed Susan's wide landing pads are open to all. Ultra violet light reveals secret stripes and colors on petals that are visible to bees and guide them to food rewards.



Hairy belly bees cut holes in leaves and use the leaves to build walls in hollow stems.

Non-aggressive leaf cutter bees just want to raise their young and find pollen and nectar. One female will lay only five to ten eggs in a hollow stem, or in a hole in the ground. One species is aptly called a "hairy belly bee" since the females collect pollen on the thick hairs of their abdomen!



U of M Bee Lab

Not a bee: Yellow jacket wasps nest in large colonies in the ground.

Unfortunately, bees of all kinds have a bad rap because they are often confused with wasps. Wasps have skinny waists, look shiny and hairless, and love to hang around your soda pop at picnics. Bees are fuzzy, and are really focused on collecting pollen and nectar. For a more detailed comparison visit: [www.beelab.umn.edu/sites/beelab.umn.edu/files/bees\\_wasps.pdf](http://www.beelab.umn.edu/sites/beelab.umn.edu/files/bees_wasps.pdf).



Lori Molleran

Syrphid flies look like bees but are actually flies.

Syrphid flies are excellent bee mimics, but you can tell the difference with a little practice! Look closely at the eyes, and notice how they cover the full head of the fly with no separation. Two wings grow from their thorax, while bees have four wings.

## Grant Funds Pollinator Education at Fish Creek

By Ann Hutchinson, Lead Naturalist

Maplewood Nature Center is the recipient of a three-year grant to conduct pollinator education and monitoring at the Fish Creek Natural Area. During the grant period, naturalists will take 800 elementary students to the site to learn about pollinators and to help plant plugs to diversify the prairie. Great River Greening will help with the plantings, and Xerces Society will help train citizen volunteers to do bee surveys. At the Fish Creek site, volunteer monitors are gathering data to shed light on what groups of

pollinators are using the site and whether bee diversity changes as the prairie restoration matures. Funding for this project is provided by the Minnesota Environmental and Natural Resources Trust Fund. Find more details at [www.maplewoodmn.gov/pollinators](http://www.maplewoodmn.gov/pollinators).



Bee identification class

## An Encounter with a Rare Bumble Bee By Oakley Biesanz, Naturalist

“What are you looking for?” asked the boy. “A bumble bee with a bit of orange on its bottom!” I said, and I showed him a drawing of a bumble bee with this pattern on its abdomen: yellow, rusty patch, yellow, black.

Ten years ago, Elaine Evans, a bumble bee researcher and author with the University of Minnesota, began her search for the extremely rare *Bombus affinis*, also known as the rusty patched bumble bee. She was especially interested in searching Maplewood because historical records showed that the rusty patched bumble bee was spotted - over 30 years ago - at Jim’s Prairie!

Elaine conducted several searches for the imperiled bee in Maplewood, including at the Nature Center in 2013 and 2014. Staff, volunteers, and the general public participated in these searches and learned how to identify bumble bees and submit photos to an online citizen science monitoring website called “bumblebeewatch.org”.

Then, an extremely exciting find in 2015! I spotted a rusty patched bumble bee at the Nature Center in late July. The bee was visiting a mountain mint plant just a few feet from the Visitor Center in the native plant gardens. The Nature Center staff and visitors spotted more through the summer on Joe-pye weed - a gorgeous prairie flower that provides excellent nutrition for bees.

We are excited that the native plantings in the Nature Center yard and along the building are supporting this rare pollinator. We are interested to see if we can find the rusty patched bumble bee again this year. Look closely though; there are other bumble bees that resemble the rusty patched bumble bee. For identification details check out Xerces rusty patched bumble bee pocket guide: <http://www.xerces.org>. Additionally, if you have a photo of a pollinator you want to share or learn about, submit it to author Heather Holm’s Facebook Page at [www.facebook.com/pollinatorsnativeplants](http://www.facebook.com/pollinatorsnativeplants). Local pollinator experts often visit and comment on this page.



Rusty patched bumble bee on Joe-Pye weed



Tri-colored bumble bee on fall aster, easily confused with the rusty patched bumble bee

# Rusty Patched Bumble Bee

Color me!



The rusty patched bumble bee, in critical danger of extinction, was found sipping nectar in Maplewood Nature Center’s native wildflower gardens!

Read more about the rusty patched bumble bee and how to help pollinators in this issue of Seasons!

### COLOR KEY

- 1 = Yellow
- 2 = Rusty Orange
- 3 = Green
- 4 = Lavender
- 5 = Black
- 6 = Brown

