



Sustain-Ability - The ability to sustain the well being of our planet for this and future generations



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Limited access and liability for on-site activities led WM to create a habitat program at Orion Township's Orion Center

Taking the program to Orion Center allowed for greater public education and engagement about the importance of preserving, protecting and encouraging wildlife habitat.

WM's Eagle Valley Habitat Map - GM Orion is just south of EV

Orion Center Habitat Map





Natural Areas at Eagle Valley



MDNR Conservation Easements



Eagle Valley
Mitigated
Wetland
Area



Pine Tree Acres
Lenox Township
29 Mile & Gratiot

Habitat Map

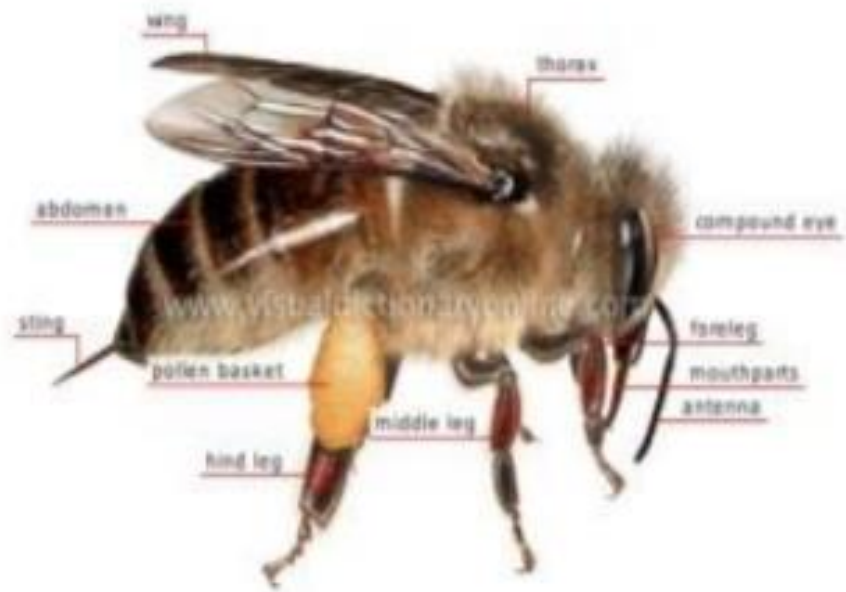
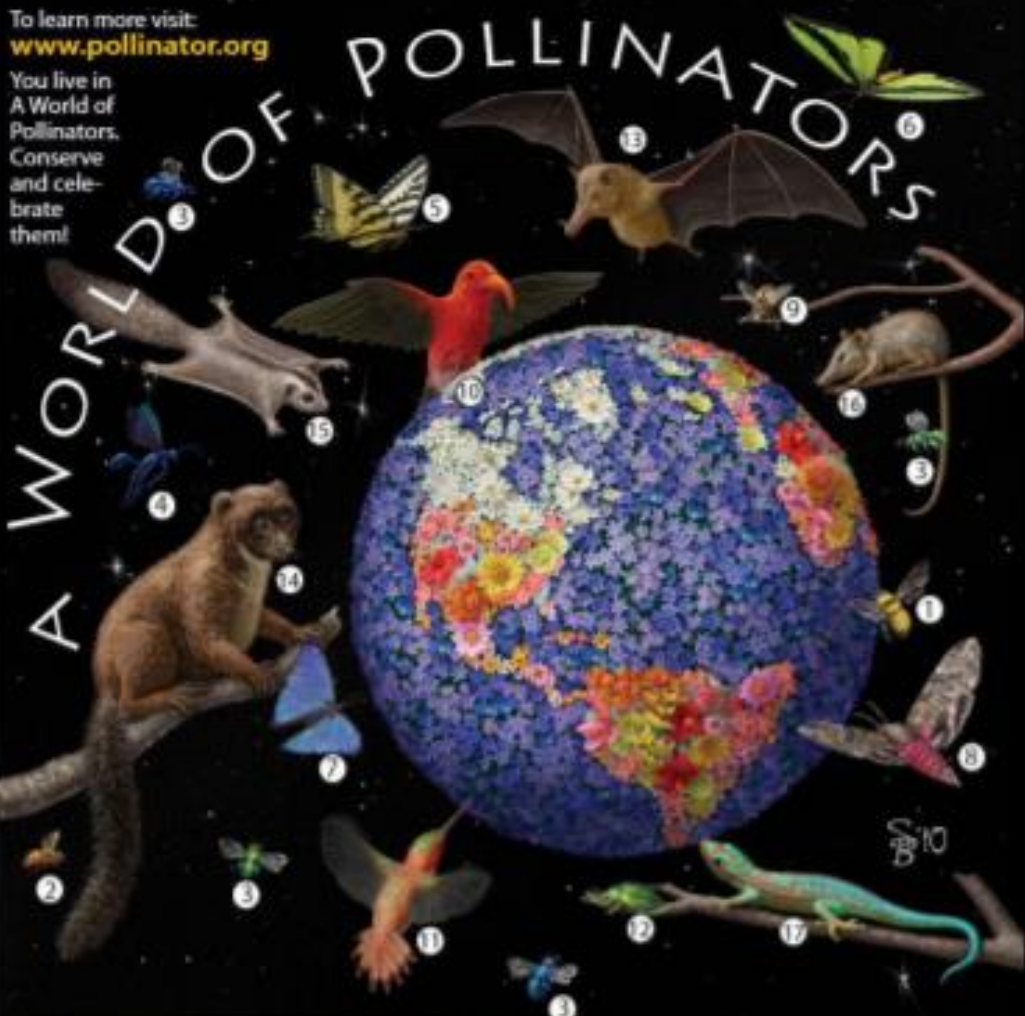


Natural
Areas
at
Pine Tree
Acres



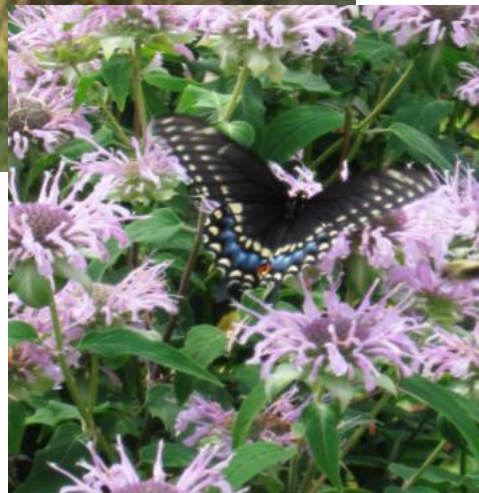
To learn more visit:
www.pollinator.org

You live in
A World of
Pollinators.
Conserve
and celebrate
them!



Education about the
importance of Pollinators

Initial pollinator garden at Pine Tree Acres installed with the help of Six Rivers and Macomb Community College students



Black Swallowtail

Improvements were later made and new plantings installed.



Spice Bush



Butterfly Bush



Button Bush



Swamp Willow

POLLINATOR GARDEN IMPROVEMENTS

Unfortunately, the pollinator garden was removed and replaced with traditional landscape design because of the unkept appearance of the pollinator gardens and challenges to maintenance contractor crews.



A new effort is underway to establish a Rain Garden that will also help better manage an area of erosion – planted with native plantings – possible pollinator attraction.



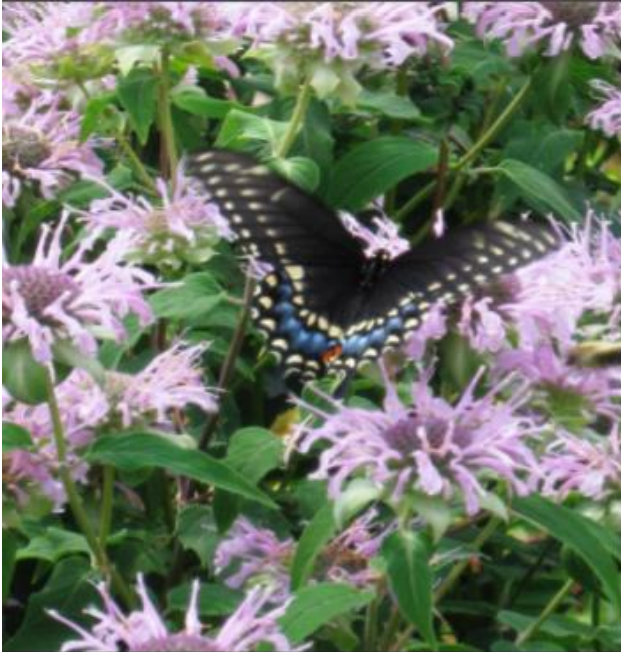
Imagine looking down and finding this cocoon in 400 + acres



European Skipper



Baltimore Checkerspot



Black Swallowtail



Red-spotted Purple



Cecropia Moth

Bees at Eagle Valley and Pine Tree Acres

Mice got in the hive at PTA and ate the bees winter food stores.



Bee Hives at Pine Tree Acres Landfill

Signs of distress

The bees are sick



New effort at Eagle Valley in 2017
Failed in 2017 / trying again in 2018

A home for 10,000 new honey bees

Landfills provide plentiful wildflowers for bees to gather pollen so in our efforts to support challenged bee populations in the U.S., Waste Management installed bees and a new hive at Eagle Valley. Local area resident and apiarist, Michele Arquette,

offered to be a care giver to the new bees at Eagle Valley. Having bees at the site provides an opportunity for school students who tour the site to learn about the importance of pollinators while also learning how their waste is managed at a landfill, and why it is important to reduce, reuse and recycle.



Meet our new residents – 10,000 bees



Orion resident, Michele Arquette places the bees in their new home.

PTA Hive #'s continue to grow



Don't forget - Bats are important pollinators too!

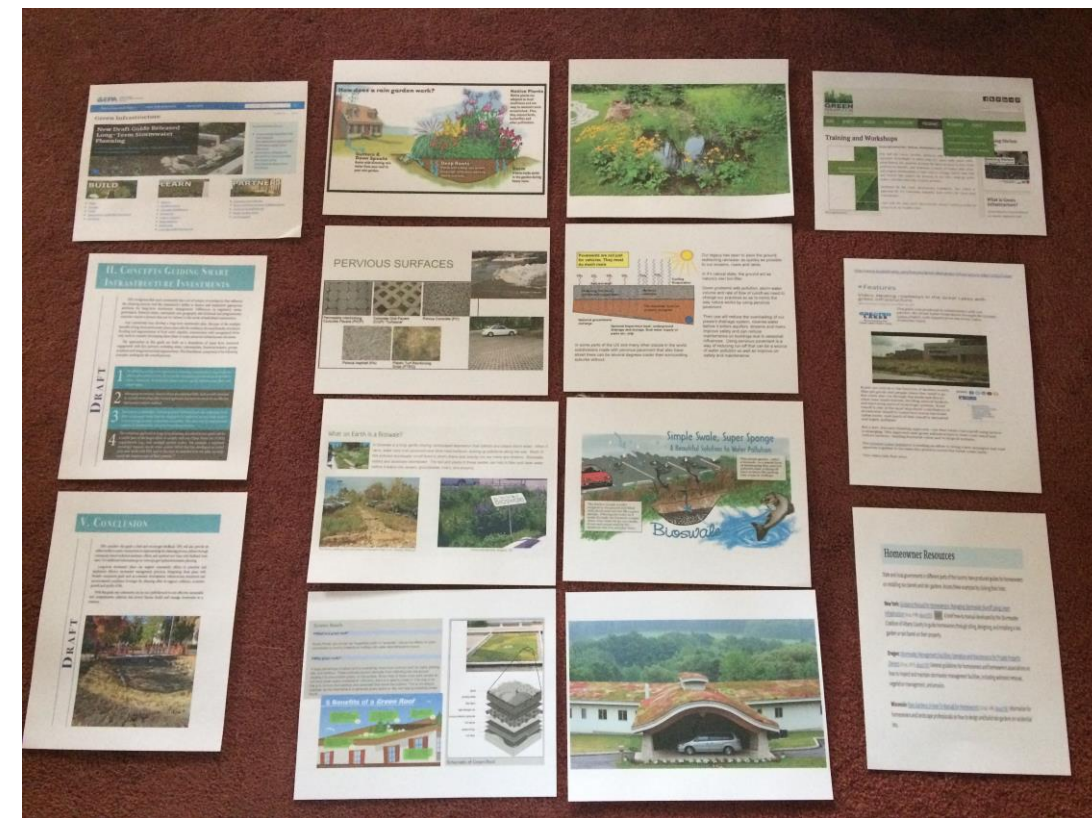
And they control mosquito populations.

Scouting troops love to build bat & blue bird houses.

Provide interested groups with habitat structure plans to get the best habitats for your sites.



Taking it off-site to Lenox township hall – conducting a species inventory



WM created a story board educating about bioswales and rain gardens – both installed at the township but not always understood by residents visiting the township offices.

Taking environmental education off-site --- WM funded the Bioswale educational signage at Orion Center...



Initial success of
Pollinator Gardens at
Eagle Valley...

But again, a constant
struggle due to limited
employee opportunity
to manage AND added
landscape cost \$\$\$.

What once was
successful turned into
an unkept garden.

And ultimately into the
great ground hog war
of 2013...

NEXT SLIDE...

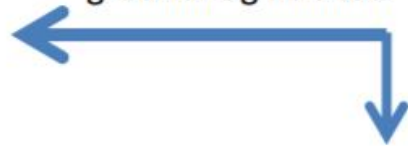


Here's how you manage hostile ground hogs?...remove the failed pollinator garden/habitat. This started out as a pond for the original owners of the site, WM turned into a rock garden/pollinator garden effort. It was then taken over by hostile ground hogs...causing its removal. Not every project is a success...



2013

Failed pollinator garden -
Removed due to unintended
groundhog habitat.



So what we couldn't do successfully on-site, we moved off-site and funded the installation of a pollinator garden at the Orion Center where volunteers maintain the gardens.

**Orion Center
Pollinator Garden**

**Installed by
community volunteers**

**Partial funding
provided by WM**



Landfills by virtue of their natural area buffer zones ARE pollinator gardens



This is the reason we do these programs – community and employee engagement in the natural environment

A butterfly's tale ...

In the hot summer month of August, 2014, Waste Management's Eagle Valley Gas Tech, Adam Stough encountered a Viceroy butterfly while doing his landfill gas monitoring at the site. The butterfly landed on him while he was reading a gas well and it wouldn't fly away. Adam discovered it had a tiny white spider on its back that must have been paralyzing it. He removed the spider and took the butterfly to the Eagle Valley scale house where WJM's scalehouse attendant Christine Stanczak observed it could walk all around but was unable to fly. Christine took the butterfly home where her young daughters Natalie - 8 and Emily - 4 looked on-line for how to care for a butterfly. They learned that butterflies have tongues to eat with and prepared sugar water for it to eat. Shortly after feeding it, the butterfly regained its strength and was able to fly away.



Paralyzed butterfly bitten by spider recovers in the care of landfill employee's daughters.

FUN FYI MOMENT...

How do you tell a **Viceroy** from a **Monarch** butterfly when they look so much alike? It's all in the details...they are very similar with a few differences in wing patterns. It's why nature can be such a great teaching tool for critical thinking and attention to detail.



Monarch
Danaus plexippus



Viceroy
Limenitis archippus

PARTNERSHIPS ALLOW YOU TO DEVELOP AND TELL YOUR STORY



82 in recovery...

He looks much better and happier today than when first found in late December...it will take about 9 months for his flight feathers to molt and grow back in so he can fly again. This means he needs to receive exercise while in captivity so he keeps his wing muscles in good condition for flying. He is in good company with several other adult red tail hawks and a few young fledglings also in recovery. He is being cared for by Linda Bianco of Spirit Filled Wings.



New partnership with Six Rivers Land Conservancy – interns performed nest monitoring from May through July in 2017 and are beginning in April through July in 2018.

Waste Management and Six Rivers Land Conservancy’s partnership is for the birds

Further in support of nature and the environment, this year Waste Management teamed up in a successful partnership with the Six River Land Conservancy. From May through July, Six Rivers provided Waste Management with two summer interns who assisted in monitoring



Site Manager, Scott Rowe, installing blue bird houses.

nest boxes installed at Eagle Valley. Wood duck houses and blue bird nest boxes encourage nesting opportunities for these two species who have seen a decline in natural areas for their nesting activities. Nest monitoring during the active spring/summer reproduction season ensures that invasive species such as European

House Sparrows and Starlings are discouraged. “Partnering with Waste Management has been a phenomenal experience for the interns, as well as staff of Six Rivers,” stated Danielle Devlin program manager for Six Rivers’ involvement in the project. “This effort shows how important attention to natural areas, even small areas, is to wildlife.”



Sparrow Egg



Danielle Devlin, Land Protection Director, with summer interns Anne Leone and Nick Kallabat <https://www.sixriversrlc.org/>

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over \$3,500,000 in community service
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& charitable giving



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BAT CONSERVATION



Six Rivers
Regional Land Conservancy



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