



Pollinator Habitat Designations

Bob Sadzinski

Power Plant Research Program

Maryland Dept. Natural Resources

Agenda

- Pollinators
- Pollinator Habitat
- Pollinator Bill
- Next Steps



Pollinators Are.....



- There are four major groups of insect pollinators: bees and wasps, beetles, butterflies and moths, and flies.
- Some are generalists, and visit many flowering plants, and others are specialists that concentrate on a single plant
- FYI.... Honey bees are not native!



Pollinators are Keystone Species:



- Their role is critical in plant reproduction.
- Over 75% of Flowering Plants need Pollination



Maryland is home to at least 450 species of native bees

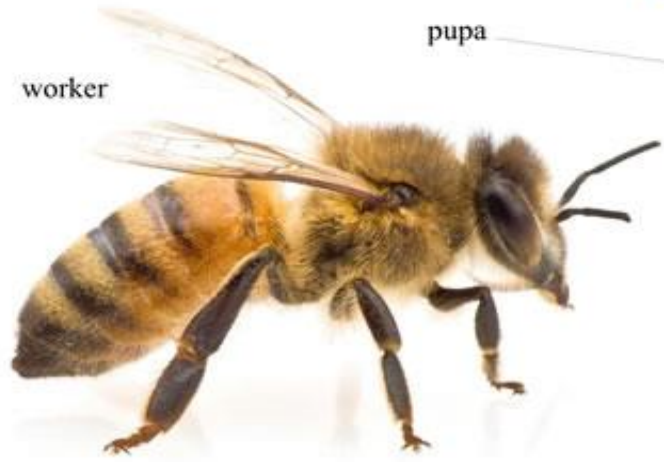
By Alex Surcičá

Digital Museum of Natural History

0.5 inch / 1.25 cm



European honey bee
Apis mellifera



varroa mite - *Varroa destructor* 2X



small hive beetle - *Aethina tumida* 2X



Bee Facts



**A single bee colony can pollinate
over 300 million flowers a day**

In order to produce 1 pound of honey, 2 million flowers must be visited.

A hive (60,000) of bees must fly 55,000 miles to produce a pound of honey.

One honey bee may visit 2,000 flowers per day.



What is threatening pollinators?



Habitat Loss and Habitat Fragmentation:

- Pollinators need flowering plants to provide nutrition
- Fragmentation of habitats increases the distance pollinators must travel between areas providing food and shelter along their routes.
- Chemicals – including pollution
- Disease
- Non-native species



Pollination Fact



Over 90% of all known flowering plants, and almost all fruits, vegetables and grains, require pollination to produce crops.

Commercial Crops

- Corn, soybean, wheat and rice are self/wind pollinated



What is Pollinator Habitat?



Diverse Wildflower Habitat for pollinators provide the nectar that pollinators feed on.

Must be diverse and “year-round”



Components of Pollinator Habitat

- Feeding
- Nesting
- Overwintering Area



Additional Benefits of Pollinator Habitat



1. Serve as windbreaks,
2. Stabilize the soil, and
3. Improve water quality.



Credit: Pollinator habitat on a Montana farm by Jennifer Hopwood, The Xerces Society.

Benefits of Pollinator Habitat on Solar Sites



- Aesthetics
- Reduced air temperatures
- Water and soil Improvements



Benefits of Pollinator Habitat at Solar Facilities



- 1. Solar sites with vegetative cover operate at cooler temperatures**
- 2. May generate 1-3 percent more electricity.**
- 3. Reduces overall site construction costs**

Less Mowing and Herbicides



Increased bird populations



Male Bobolink – photo by John Parke

Transporting Bee Hives to Pollinate Crops



Pollinator Habitat History



- Timing is Everything
- Two Initiatives
 - Federal -
 - State



Federal Pollinator Initiatives

In May 2015, the White House released a *National Strategy to Protect Pollinators and Their Habitat.*



Focused on Three Initiatives:



NATIONAL STRATEGY TO PROMOTE THE HEALTH OF HONEY BEES AND OTHER POLLINATORS

Pollinator Health Task Force

MAY 19, 2015



1. Reduce honey bee losses
2. Increase the Eastern population of the monarch butterfly
3. Restore or enhance million acres of land for pollinators.

State Initiatives: Pollinator Protection Bill of 2016



Maryland 1st in Nation to Ban
Neonicotinoids



Pollinator Habitat Bill



- **SB1158 (Department of Natural Resources - Solar Generation Facilities - Pollinator-Friendly Designation)**

- *This bill expands the activities of the Power Plant Research Program (PPRP) within the Department of Natural Resources (DNR) to include an evaluation of the pollinator benefits that would occur under a pollinator-friendly vegetation management standard or pollinator habitat plan implemented on land on which a proposed or an existing ground-mounted solar generation facility is located. DNR, in consultation with the Maryland Department of Agriculture (MDA), must designate a solar generation facility as pollinator-friendly if it meets specified requirements, and may charge a reasonable fee to cover costs associated with the designation. The owner of a solar generation facility is prohibited from making specified claims regarding the pollinator benefits of the facility unless it has been designated as pollinator-friendly by DNR. DNR must adopt implementing regulations. The bill takes effect June 1, 2017.*



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Bill viewed at:

http://mgaleg.maryland.gov/2017RS/chapters_noln/Ch_372_sb1158E.pdf

Pollinator Bill Requirements for Solar Facilities



- Evaluation of the potential pollinator benefits through a scorecard
- Requiring long-term maintenance of the pollinator habitat
- Department may charge a reasonable fee
- Takes effect June 1, 2017 with existing scorecard




Pollinator Bill Requirements for Solar Facilities – cont'd



- PPRP has created a Working Group to review the scorecard, drafted by UMD Bee Lab
- Likely meet in June
- No present deadline for any scorecard tweaks

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Solar Site Pollinator Habitat Planning and Assessment Form

To be used in the process of site and seed mix planning/designing or site evaluation.

<p>1a. Percent of site with flowering plant species (select one)</p> <table style="width: 100%; border: none;"> <tr><td><input type="checkbox"/> 1-15 percent</td><td style="text-align: right;">5 points</td></tr> <tr><td><input type="checkbox"/> 16-30 percent</td><td style="text-align: right;">10 points</td></tr> <tr><td><input type="checkbox"/> 31-45 percent</td><td style="text-align: right;">15 points</td></tr> <tr><td><input type="checkbox"/> 46-60 percent</td><td style="text-align: right;">20 points</td></tr> <tr><td><input type="checkbox"/> 61+ percent</td><td style="text-align: right;">25 points</td></tr> </table> <p>1b. 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Pollinator Scorecard

Points:

- Educational Signage
- Percent of Site Planted
- Variety and Density of the seed mix
- Native plant species
- Vegetative Mgt. Plan
- Vegetative screening including Pollinator plantings



Points OFF for:
Pesticide use

Pollinator Scorecard



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6. Planned/existing management practices (add all that apply)

- Mowing occurs no more than once per year 5 points
- Detailed establishment plan 10 points
- Detailed monitoring plan 10 points
- Creation of nesting habitat features (e.g. boxes, tunnels) 0.2 points per

Total:

7. Vegetation "screen" adjacent to the solar site (add all that apply)

- At least 50% of screen area planted with flowering plant species 5 points
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Total:

8. Signage/Education (add all that apply)

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Grand Total:

Meets Standard 70-84

Provides Exceptional Habitat >85

Developer: _____

Project Location: _____

Project Size: _____

Target Seeding Date: _____

Send completed forms to: MD Dept. of Agriculture, MD Dept. of Natural Resources PPRP

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“Honey Do” List for the Working Group



- MDA – Matt Tefteau has agreed to Chair the Working Group.
- Fee structure
 - Annual?
 - Dependent on acreage?
- Inspections
- Application Process
- Presented to our Stakeholders



Source: The Backyard Naturalist

Working Group Participants



MDA - Matt Tefteau

UMD – Dennis vanEngelsdorp and
Karen Rennich (Bee Lab) & Bee Informed Partnership

WHS – Jennifer Selfridge

SunEast Development. LLC - Marcia Hass

HB Solutions - Dane Bauer

MD Farm Bureau - Colby Ferguson

USGS – Sam Droege

Other contacts:

Maryland Grain Producers

PPRP Consultant

Power Companies



Questions / Comments?

Bob Sadzinski

Bob.sadzinski@maryland.gov

410.260.8668

Power Plant Research Program

