

Pollinator-Friendly Parks

2023 MRP A Conference

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VICTORIA HALL & RILEY BROWN

CALVERT COUNTY NATURAL RESOURCES DIVISION

WWW.CALVERTCOUNTYMD.GOV/NATURALRESOURCES



Objectives

- Why are Pollinators Important?
- What Pollinates?
- Parks are Important for Pollinators
- Habitats for Pollinators
- Assess Your Work & Agency
- Identify Collaborators & Opportunities
- Educating Others

Parks and Pollinators: Taking Action and Advancing Sustainability



Natural Resources Division

OUR MISSION

To preserve, manage and operate natural resource areas to provide compatible outdoor recreation and educational opportunities for the public.





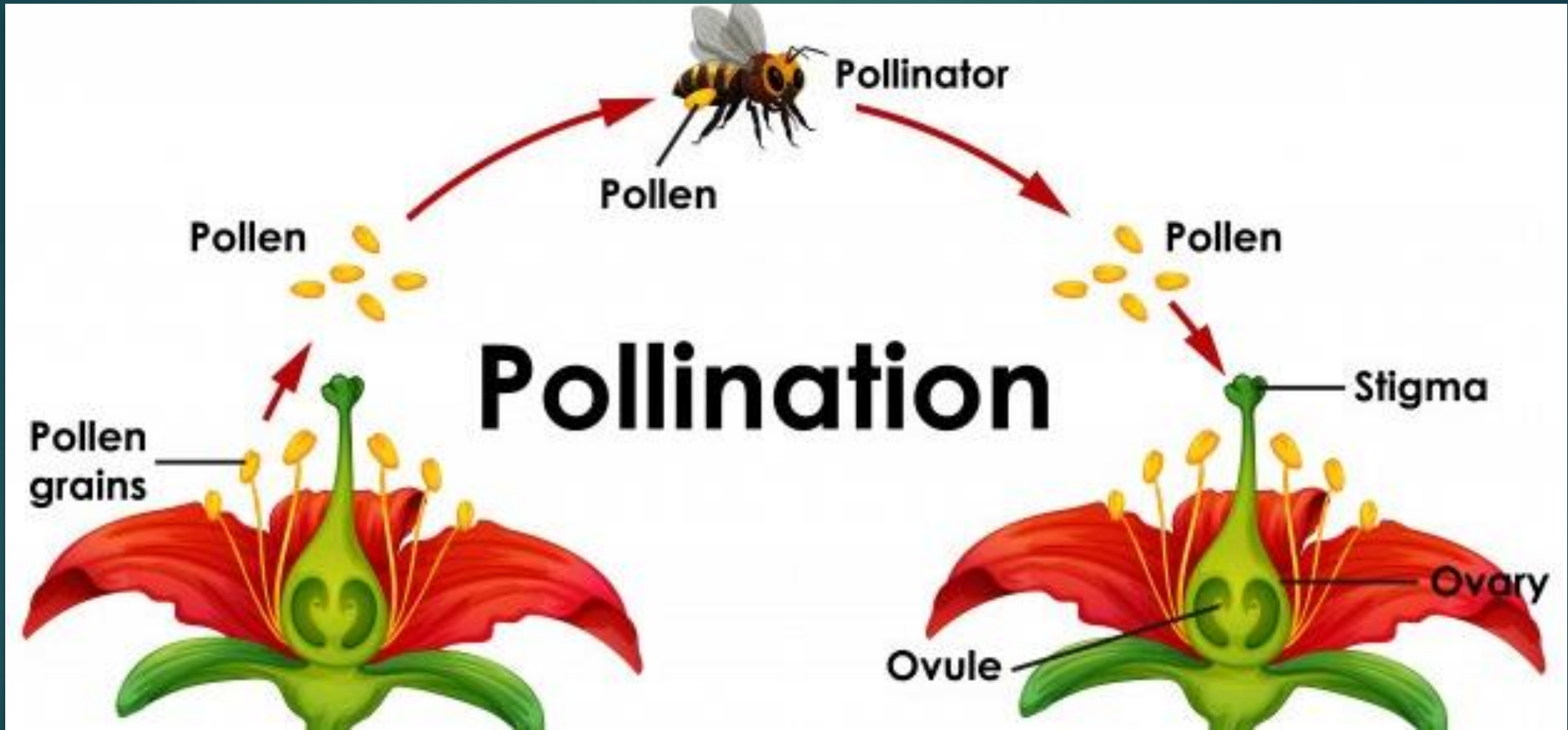
Things To Do		Hiking	Kayak and canoe launch	Equestrian trails	Fishing	Crabbing	Fossil hunting	Boat ramp
	Battle Creek Cypress Swamp		X*					
	Biscoe Gray Heritage Farm	X		X+				
	Flag Ponds Nature Park	X			X	X	X	
	Gateway Preserve	X		X+				
	Hughes Tree Farm	X			X			
	Hutchins Pond				X			
	Kings Landing Park	X	X	X+	X	X		
	Lower Marlboro Wharf	X			X			
	Nan's Cove		X		X	X		
	Solomons Boat Ramp		X		X	X	X	
	Ward Farm Recreation & Nature Park	X						

*No pets allowed *For a free permit, call 410-535-5327

Approx. 1,600 acres

Outdoor Recreation
 Habitat Management
 Forests
 Wetlands
 Shoreline
 Meadows
 Community Engagement

Pollination 101





VS



Wind Pollinated Plants vs. Insect Pollinated Plants

Pollinators

Bees

Flies

Beetles

Wasps

Moths

Butterflies

Ants

Bats

Birds

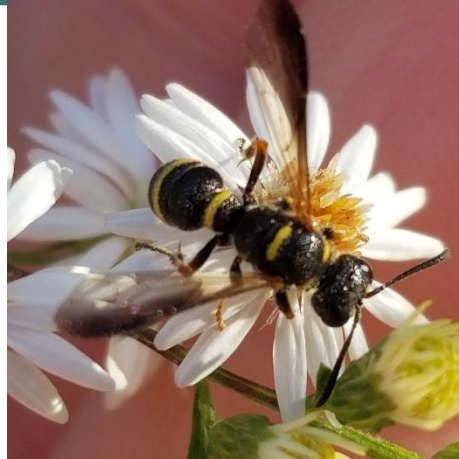
Wind

Plants

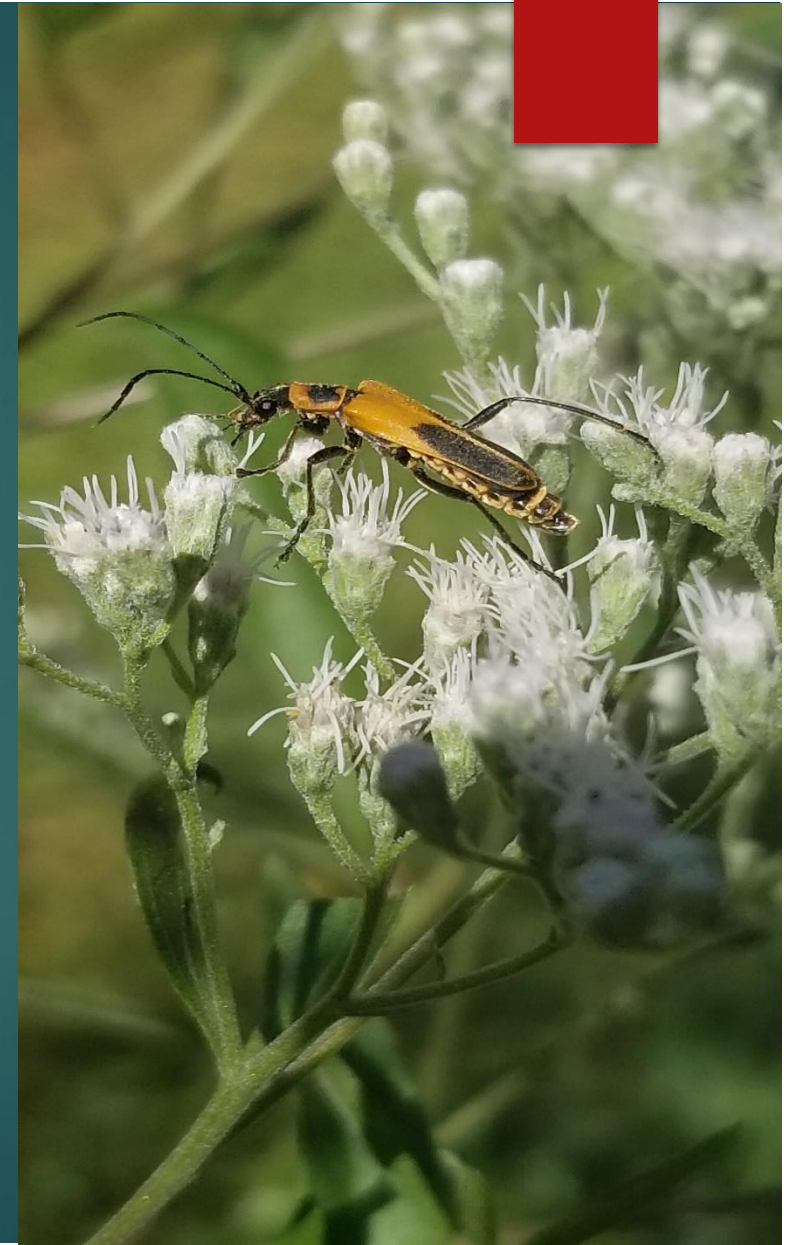


Quiz Time

RILEY BROWN AND TORI HALL



Why Are Pollinators Important?



Insects are Important

- Pollinate Plants
- Maintain Plant Diversity
- Critical Link in Food Chain



Foundation of Food Webs



Coopers Hawk



Chckadee



Caterpillar



Black Cherry



Supporting Pollinators

Two Strategies

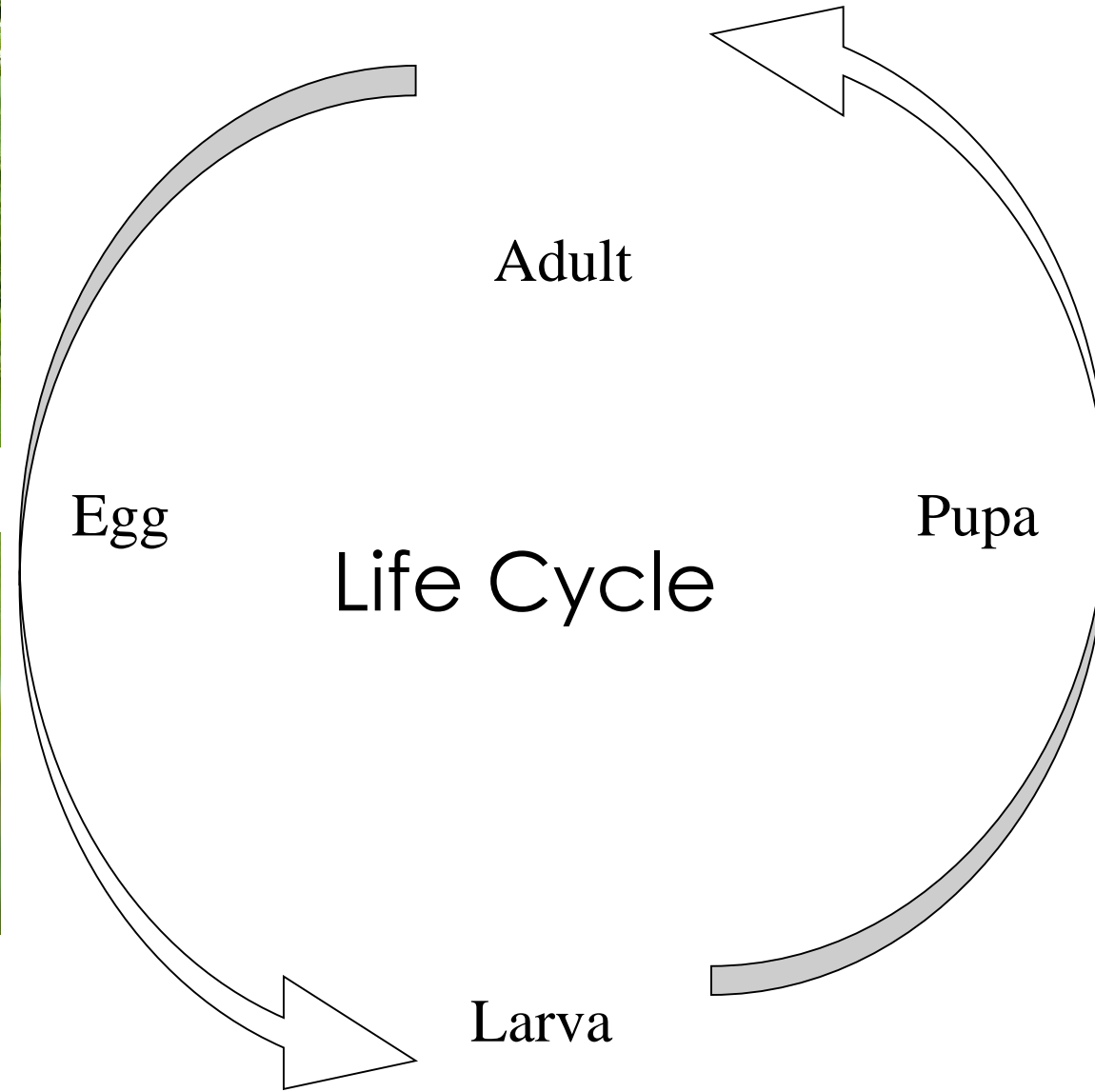
- ▶ Host Plants for Caterpillars
- ▶ Pollen for Specialist Bees

River birch *Betula nigra*
284 species of caterpillar





Photo by Sara Tangren



Nectar and Larval Host Plants

Tiger Swallowtail



Tuliptree
(*Liriodendron tulipifera*)
21 species of caterpillars



Black cherry
(*Prunus serotina*)
340 species of caterpillars

High Value Trees for Caterpillars

- ❑ Quercus (Oaks)

- ❑ 550 species

- ❑ Prunus (Cherry)

- ❑ 340 species

- ❑ Acer (Maple)

- ❑ 238 species

- ❑ Carya (Hickory)

- ❑ 213 species

- ❑ Pinus (Pine)

- ❑ 200 species



Plants for Pollen Specialists

- ▶ Nectar provides energy
- ▶ Pollen supports reproduction

- ▶ Generalist pollinators will benefit if you plant for the specialists



Long-horned bee. Photo Mace Vaughan, Xerces Society

Pollination

- Bloom Time
- Visual Clues
- Scents
- Flower Morphology
- Pollen Diversity

Narrow-leaf Mountain Mint (white)
Pycnanthemum tenuifolium
And Purple-Headed Sneezeweed (yellow)
Helenium nudiflorum

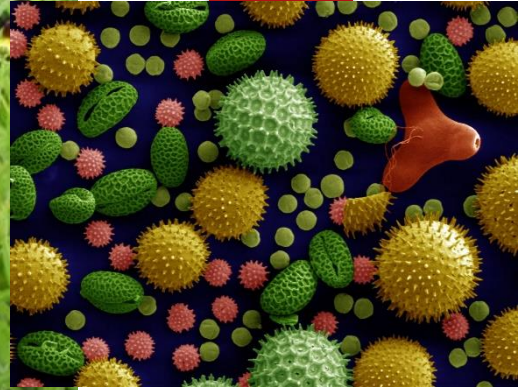


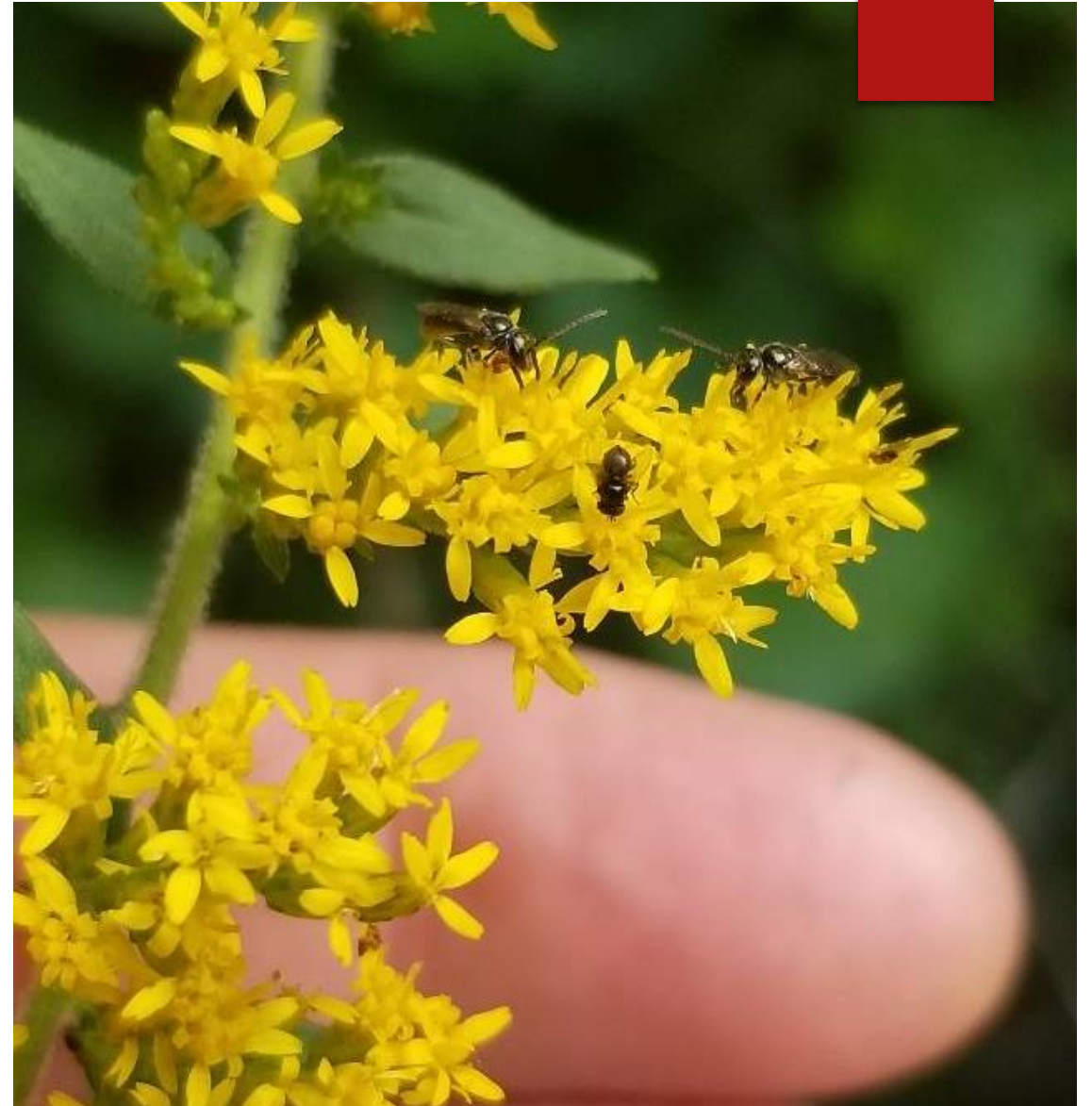
Photo by Sara Tangren

Solidago (Goldenrods)

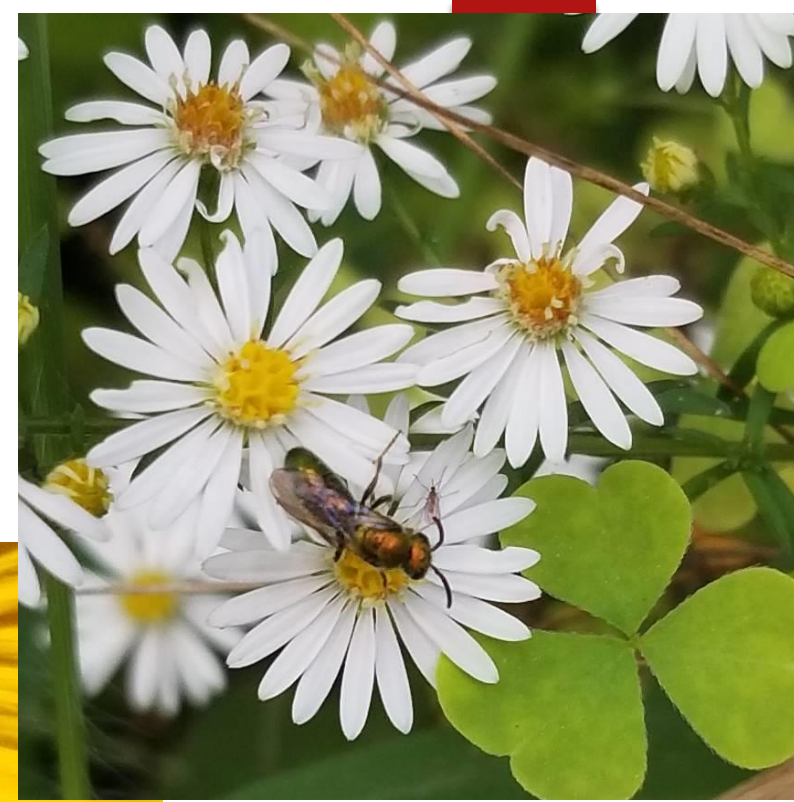
33 Species in Maryland

42 Pollen-Specialist Bee Species

- ▶ Mining bees (*Andrena* spp.)
- ▶ Polyester bee (*Colletes simulans armatus*)
- ▶ Long-horned bee (*Melissodes druriella*)



- Helianthus (8 spp. Sunflowers)
- Symphyotrichum (31 spp. Asters)



Bill Harms
<https://www.marylandbiodiversity.com/record/374270>

Threats

To Habitats

- ▶ Habitat destruction
- ▶ Nonnative invasive species
- ▶ Overpopulation of deer
- ▶ Climate change

To Pollinators

- ▶ Pesticides
- ▶ Habitat destruction
- ▶ Light pollution
- ▶ Nonnative and invasive species
- ▶ Climate change

Dark Sky Lighting Principles

- ▶ Minimize the amount of illumination
- ▶ Minimize the area of illumination
- ▶ Minimize the duration of illumination
- ▶ Use long-wavelength lights

8/9

City/Inner
City Sky

7

City/
Suburbia
Transition

6

Bright
Suburban
Sky

5

Suburban
Sky

4

Suburban/
Rural
Transition

3

Rural Sky

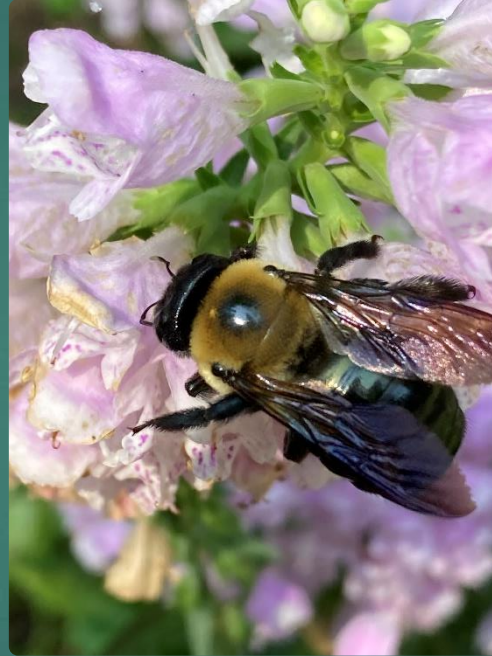
2

Dark Sky
Site

1

Excellent
Dark Sky
Site

Plant Choice Matters





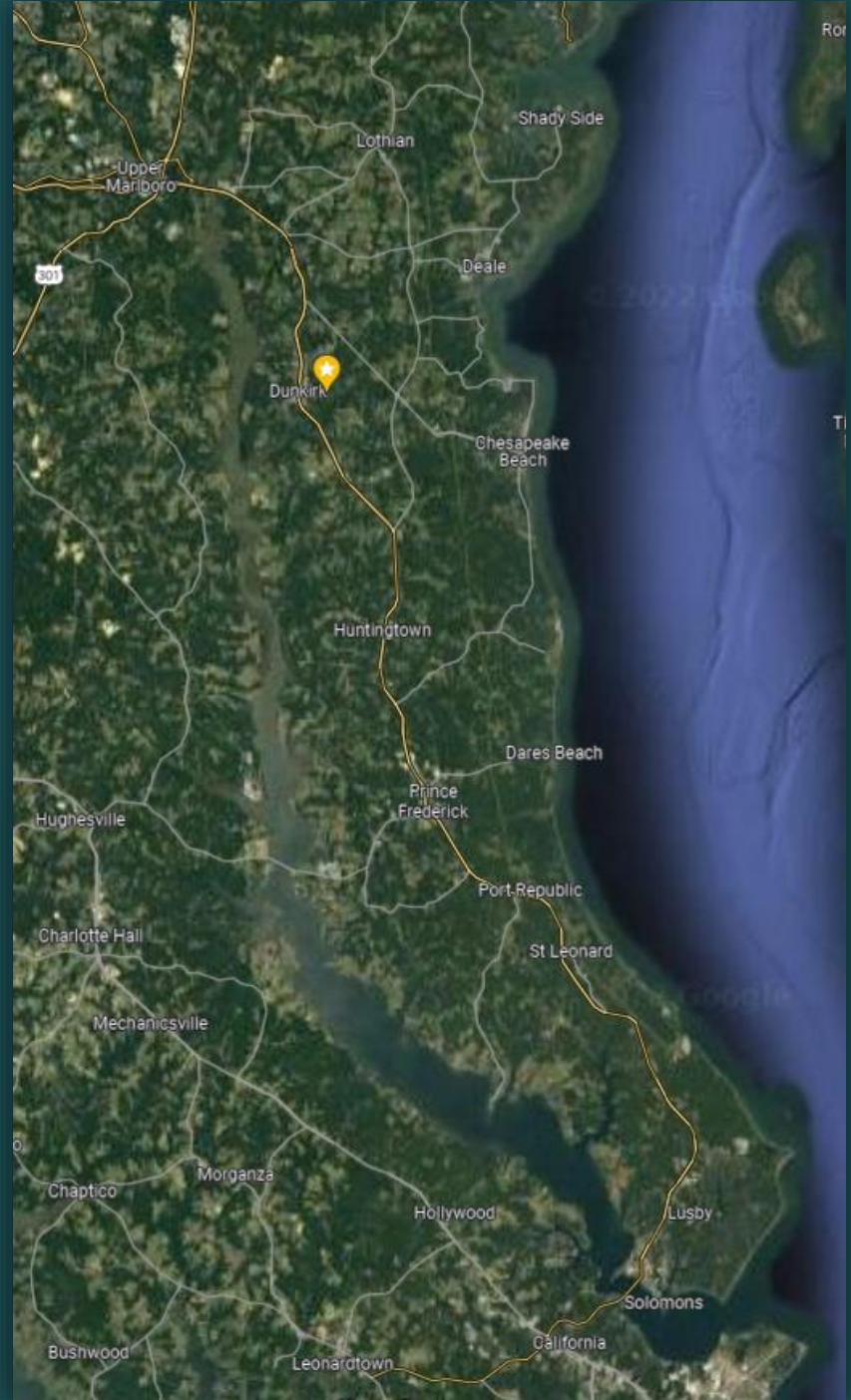
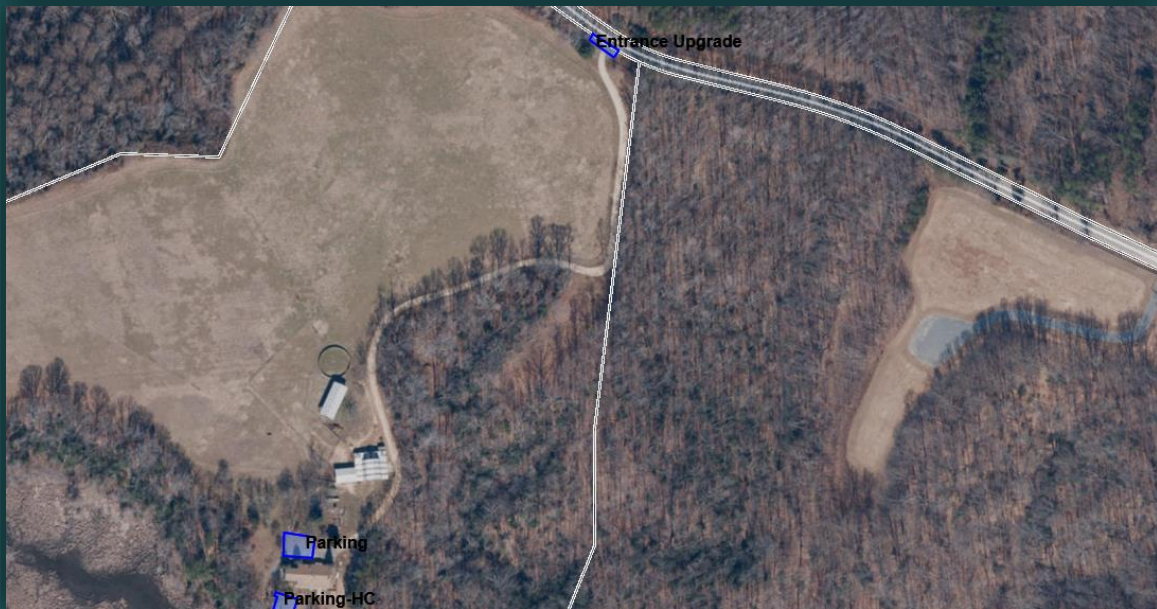
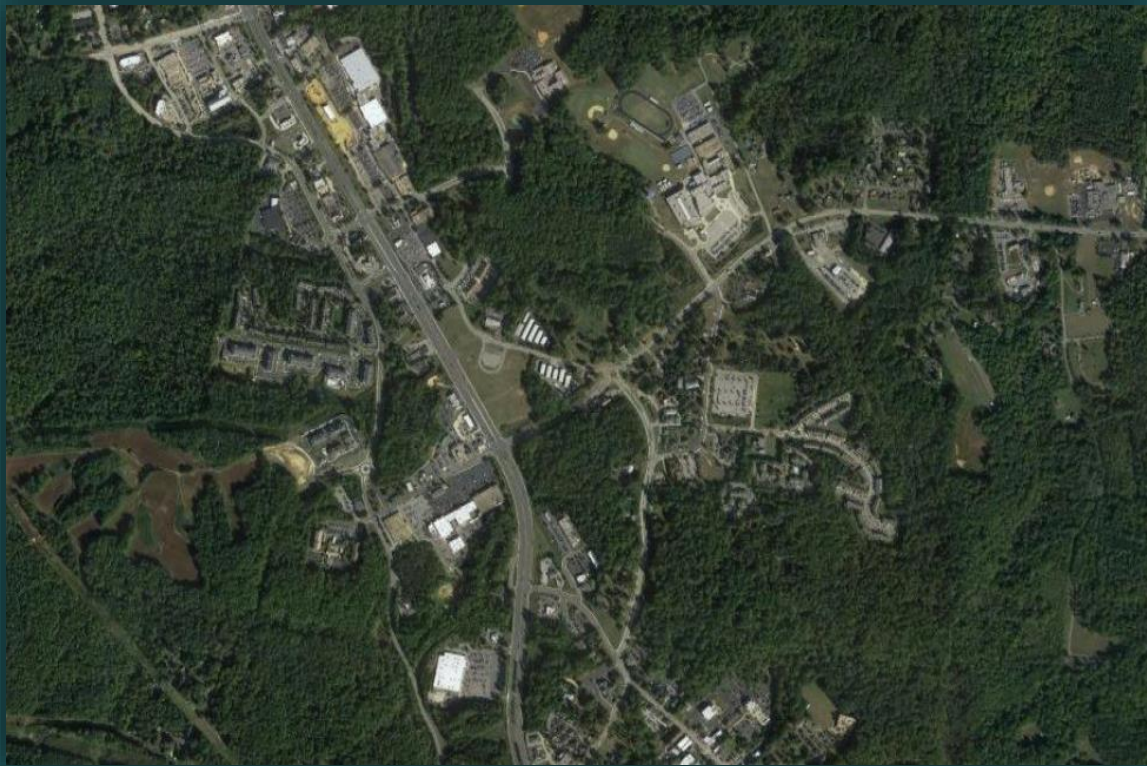
Parks are Important for Pollinators

FORAGING

NESTING

HOST PLANTS

A Sense of Place



Types of Habitats for Pollinators



POLLINATOR GARDENS

These are small spaces (generally less than 1,000 square feet) that are located in areas readily accessible to park staff and visitors. These can be flower beds in parks/facilities, container plantings, and formal or informal spaces. Existing mulched beds also can be converted into these small gardens. While small in scale, these gardens can provide an important source of habitat. They also provide good opportunities for staff to educate visitors through interpretive signs or educational programming, allow visitors to see that pollinator gardens are attractive, and can be welcome landscape features in any yard.



SMALL-SCALE POLLINATOR AREAS

Small-scale pollinator areas generally extend more than 1,000 square feet but less than one acre. Prime candidates are areas not heavily used by visitors because their shape, size or location make it difficult to till or mow. Identifying these areas can be done by geographic information system (GIS) analysis or staff familiar with the park or existing public property. After identifying and verifying areas as suitable from a park operations standpoint, actual site conditions can be assessed and developed into pollinator habitat.



LARGE-SCALE POLLINATOR MEADOWS OR PRAIRIES

Large scale pollinator meadows or prairies consist of land areas that exceed one acre. A variety of areas offer opportunities to create meadows or prairies, such as existing fields and mowed turf areas. The level of effort required to establish these types of pollinator habitats depends on the size of the area and the presence of other species established there. Creating these habitats could require a multiyear process of installation and maintenance.





POLLINATOR EDGE HABITAT

Historically, these areas may have been maintained by regular mowing. Some of these areas can include food species for pollinators as well as the pollinator species themselves, so adopting “no-mow” practices is sufficient to create edge habitat. In other cases, these areas may need to be over-seeded or planted to create appropriate pollinator edge habitat.



GREEN INFRASTRUCTURE/STORMWATER AREAS

Green infrastructure/stormwater spaces — designed and constructed to capture, slow, hold and infiltrate water — are common additions to park areas. These include but are not limited to bioswales, rain gardens and retention areas. Maximize the benefits and uses of these spaces by installing native plants. Native plant species can stabilize the soil, help filter water and provide habitat. Using pollinator-friendly practices to create and maintain these spaces also ensures the protection of water quality and aligns with other important environmental practices.



FORESTS, NATURAL AREAS AND RIPARIAN ZONES

Forests, natural areas and riparian zones are equally important and provide early food sources, habitat and nesting areas for pollinators. These can be large habitat areas providing connection and corridors for pollinator migration. Incorporate pollinator-friendly practices to establish and maintain these areas, including: planting native tree/shrub/plant species, leaving nesting materials (leaves, dead trees, wet soil areas), removing invasives, etc.



UTILITY RIGHT-OF-WAY MANAGEMENT

Engagement with utility companies that maintain rights of way through public land is another opportunity for creating pollinator habitat. Limited spraying and removal of tree saplings will be conducted as necessary for meadow establishment and maintenance in accordance with pollinator-friendly practices.



CREATIVE SPACES

Park amenities can be co-managed to support pollinators. Some can be easy to spot, like community gardens, while others might not be so obvious, like replacing turf with flowering lawns or bee lawns. This can also include a wide variety of places like green roofs, container plantings, athletic fields, golf courses, sensory gardens and many more creative locations to incorporate pollinator-supporting habitat.

Self-Assessment for Pollinator- Friendly and Sustainable Parks

Ensuring your policies, practices and resources advance sustainability and pollinator habitats communicates to your agency and city leadership the value of supporting this work. As you bring your community along through these efforts, you build a community that understands and values these changes, as well as supports them through their own efforts.

Use the questions provided below to assess what elements your agency/team are already doing, what could be implemented in the future, and what goals you can set to strengthen your work to advance sustainable practices, policies and actions.

Administrative and Finance

YES NO

- 1. Does your agency have policies or guidelines to help it become more pollinator friendly and sustainable? If so, what are they? _____
- 2. Are native habitat or pollinator protection efforts included in larger park plans?
- 3. Does your agency have staff members with dedicated roles and responsibilities to advance pollinator protection/native habitat or sustainable practices? If so, what are they?

- 4. Do your full-time staff members receive orientation on these policies and understand their roles in promoting them?
- 5. Does your agency provide annual training and reinforcement of your policies or guidelines (for seasonal/full time staff and volunteers)?



Strategies for Success

ASSESSMENT TOOL

SMALL GROUP BREAK OUTS

15 MINUTES

Parks For Pollinators



- ❑ Create Foraging Habitat
- ❑ Support Reproduction
- ❑ Provide Shelter
- ❑ Remove Invasive/Exotic Species
- ❑ Reduce Chemical Use
- ❑ Monitor Efforts
- ❑ Spread the Word



Park Projects



Gardens



Outreach & Interpretation

NRPA Parks for Pollinators

- ▶ Raise awareness of pollinators nationwide by hosting a Parks for Pollinator BioBlitz in your community
- ▶ The entire month of September.
- ▶ Sign up for the 2023 BioBlitz
- ▶ <https://www.nrpa.org/our-work/Three-Pillars/conservation/parks4pollinators/bioblitz/>



Resources



- ▶ Xerces Society: Pollinator Friendly Parks
<https://xerces.org/publications/guidelines/pollinator-friendly-parks>)
- ▶ Monarch Joint Venture, Advocate for Monarchs
<https://monarchjointventure.org/get-involved/advocacy>
- ▶ National Wildlife Federation
<https://www.nwf.org/Home/Garden-for-Wildlife>
- ▶ Homegrown National Park
<https://homegrownnationalpark.org/>
- ▶ Wild Ones Natural Landscapers, Native Garden (designs for residents) <https://nativegardendesigns.wildones.org>

www.calvertparks.org/activities/pollinators





Final Thoughts

WWW.CALVERTPARKS.ORG/ACTIVITIES/POLLINATORS



Questions?

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