Pollinator Protection

Who are Maryland's pollinators?

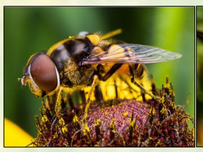
Pollinators include any organism that transfers pollen - the genetic material of plants – from one flower to the next.


Over 150 species of butterflies


Over 400 species of bees


Ants


Beetles


Flies


Moths


Wasps


Hummingbirds

Facts about Pollinators:

- **Half** of the world's oils, fibers and raw materials rely on pollinators
- Pollination services to agricultural crops are valued at **$10 billion** annually
- Pollinators are responsible for bringing you **1 out of every 3** bites of food you eat
- Pollinators have been steadily declining since the 1950's
- There are over **4,000** species of bees in the U.S.
- Managed bee colonies in the U.S. have declined from **6 million** in 1950 to **2.5 million** today

How can you help pollinators?

Preserve natural bee habitats

- Leave field borders, woodlots, ditch banks, stream/pond edges, hedgerows, utility line easements, land around garages and barns, roadsides, wetlands and south-facing embankments unmanaged. These areas provide spaces where bees can safely nest, raise their young and overwinter.
- Avoid disturbing existing ground nests – which resemble ant hills.

Provide floral and nectar resources

- Leave weeds like clovers, mustards, dandelion, ox-eye daisy and yarrow to bloom in areas where they will not compete with crops.
- Plant flowering cover crops, which can provide pollen and nectar resources during otherwise fallow periods.
- Plant a pollinator garden around your home, or grow native flowers in window boxes and containers in apartment-style living spaces.
- Support land conservation in your community.

What is causing pollinator decline?

Habitat loss, degradation and fragmentation

Much pollinator habitat has been lost to agriculture, resource extraction, and urban/suburban development. Habitat degradation is another serious concern. For example, ground nesting bees require loose soil which can become trampled by heavy foot traffic or off-road vehicles. In cities, ground-nesting bees may be especially limited due to the large amount of landscape that has been covered with concrete and other impervious surfaces.

Non-native species and diseases

Plants or animals brought here from other places can decrease the quality of pollinator habitat. When non-native shrubs like autumn olive and multiflora rose take over open fields, they crowd out the wildflowers needed by certain butterfly and bee species for survival. Introduced parasites, such as the varroa mite, have severely compromised honey bee colonies.

Pollution, including pesticides

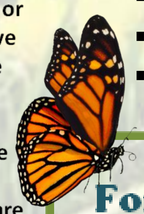
Air pollution poses serious problems for pollinators that rely on scent trails to find flowers. Light pollution can harm moths by increasing their susceptibility to predation when attracted to artificial lights at night. Pesticide misuse and drift are also major threats to insect pollinators. Systemic insecticides applied to seeds can contaminate the pollen grains that provide an essential food source for bees and their young. Sub-lethal amounts can also be detrimental to pollinators by impeding their ability to navigate or forage.

Climate Change

Studies predict that climate change will alter the close relationship between bees and the plants they depend on for reproduction. Flowering plants migrating north or to higher elevations may not move in sync with their pollinators. The composition of pollinator communities is also expected to change. Recent observations have suggested that bumble bees adapted to cooler temperatures are beginning to decline, while those adapted for warmer temperatures are expanding northwards.

Protect bees from pesticides

- Always read and follow all directions on the pesticide product label.
- Look for the EPA bee hazard icon on pesticide labels.
- Look for pollinator language under the "Directions for Use" section of the pesticide label.
- Only certified applicators can legally apply neonicotinoid pesticides to landscape plants in Maryland.
- Use IPM principles to control pests and only spray when necessary.
- Spray after sunset when bees have stopped foraging.
- Leave unsprayed crop buffers at field margins wherever possible.
- Choose sprayer and nozzle configurations designed to reduce drift.
- Be aware of potential pesticide applications to nursery-bought flowers.



For more information check out the Maryland Pollinator Protection Plan on our website!