Best Practices for Pollinators

Conserving Biodiversity in Open Spaces

By: Dr. Vera Krischik, University of Minnesota, Dept. of Entomology
www.ncipmhort.cfans.umn.edu

This is a land management guide for pollinator conservation in municipal and urban areas such as community parks and gardens, underutilized or abandoned lots, right of ways, or strips of land between lots or buildings.

In a world where habitats are being replaced by urban sprawl and commercial agriculture, creating habitat corridors for pollinators is increasingly more important to their survival. Thoughtful, well-planned best practices can create healthy environments for pollinators to live in and also help reduce maintenance needs, reduce erosion, improve water quality, increase property values and offer ecological benefits to the surrounding landscapes.

Pollinator friendly habitat provides:

1. FOOD: Diverse and abundant food sources including blooms from spring through fall with nectar, pollen, and host plants. Replace areas of mown grasses/turf with prairies, meadows and gardens, and enhance existing habitats.
2. WATER: Include clean water sources such as a pond, lake, or water feature.
3. PROTECTION FROM PESTICIDES: Provide protected areas from pesticide drift. Cease or reduce pesticide use including insecticides, herbicides and fungicides. Adopt Integrated Pest Management (IPM) practices.
4. SHELTER & NESTING AREAS: Allow some untidy areas for nesting and overwintering with bare open ground, beetle banks, mulch, leaf or wood chip piles, shrubs, living trees and dead wood.

Best practices embrace four major principles:

- **Conserve biodiversity:** A naturally diverse landscape discourages outbreaks of disease and pests. Such a landscape also attracts beneficial insects (like lacewings and lady beetles) that prey on unwanted pests. Healthy soil supports plant health and disease resistance.
- **Restore native vegetation:** Consider using native vegetation in landscapes. The plant's natural evolutionary traits provide cues that entice pollinators to visit. Some heirloom garden plants are very attractive such as May nights salvia, catnip, catmint, Mexican sunflower, shrub roses, bee balms, borage, hyssop, verbena, and buddlei “black night”. Be thoughtful when choosing cultivars. Some cultivars no longer attract pollinators for example, the native *Echinacea purpurea* has been cultivated into a floral frankenstein called "butterfly kisses". This cultivar's flower does not attract pollinators and the seed head has virtually vanished.
- **Promote nutrient recycling through composting and soil health:** composting is an ecologically sound way of disposing of yard wastes and is used to increase soil nutrients. Beetle banks, wood chip, dead wood and leaf piles or "untidy" areas not only contribute to soil health, but also provide nesting areas for pollinators and beneficial insects.
- **Use Integrated Pest Management (IPM):** IPM is an approach to solving pest problems by applying knowledge about pests and plants to prevent plant damage before it becomes a problem. IPM means responding to pest problems with the most effective and least-risk and least-toxic option. IPM is a science-based decision-making process that includes monitoring and long range planning. By correcting conditions that lead to pest problems and using approved pesticides only when necessary, IPM provides more effective control while reducing pesticide use. The conservation of beneficial insects, including bees, insect predators, parasitic wasps, and butterflies is an essential part of IPM.

Identify areas in parks and community spaces for foraging habitat, reproduction sites, nesting and overwintering sites, plant species of special interest for pollinators, implement adaptive management (IPM), and engage and inform the public.

Photo: Minnesota Native Landscapes

INVITE THEM IN:

- Water features, ponds, lakes, streams
- Beetle banks
- Host, nectar and pollen plants
- Protected from pesticides
- Some open ground
- Dead wood, wood chips
- Leaf and mulch piles
- Nesting areas
- Flowering trees, shrubs and hedgerows
- Pollinator lawn
- Interpretative signage
- Pathways

Adopt an Integrated Pest Management (IPM) approach in your community, city, county, park system or company. (https://ncipmhort.dl.umn.edu/integrated-pest-management-ipm) Any individual, community or business can adopt an IPM plan for spaces from backyards to public parks to corporate properties. **IPM** is an ecosystem-based approach that employs long-term prevention of pests and pest damage through monitoring of plants, pests and weather to project ahead and plan. While pesticides simply respond to the pest, IPM addresses the source of pest problems. IPM strives to avoid chemicals harmful to pollinators and toxic to the environment.

- **Inspection and monitoring:** Regular and close examination of plants and landscaping is essential to diagnose pest problems and their sources. Monitoring includes devices such as traps, and practices such as observation and recordkeeping. Track numbers of good bugs and pest bugs. If a pesticide must be used, use a biorational pesticide which is less harmful such as soaps, oils, bacillus thuringiensis (Bt), spinosad, neem oil, corn gluten, or miticides.
- **Forecasting:** Weather and plant growth cycles predict if and when pest outbreaks may occur. If properly timed, treatments or pesticide applications can be reduced.
- **Thresholds**: Set thresholds for pest populations and plant damage. Before treating, wait until pest populations reach a determined level that could cause economic or irreversible plant damage. Use hardy plants that are naturally resistant to pests to avoid exceeding pest thresholds.
- **Education:** Regularly update the IPM plan and pesticide/treatment list so it remains effective. All staff should be educated and updated on IPM plans and best practices.
- **Recordkeeping**: Keep updated records to compare year to year and for decision-making. Track data including weather patterns, when pests appear, number of pests in traps, plant damage, and practices that work and don't work. Always count pests before and after pesticide application to determine if application was successful.