



North American Pollinator Protection Campaign

WILDLIFE FACT SHEET

INVASIVE SPECIES

The North American Pollinator Protection Campaign (NAPPC) is a tri-national collaboration of diverse partners working to protect pollinators and raise the profile of pollinator issues.

The mission of the NAPPC is to encourage and support actions to benefit the health of pollinating species in North America.

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For more information about how to help pollinators or to make a tax-deductible contribution for pollinator protection, please contact us at: www.NAPPC.org or www.coevolution.org.

NAPPC is coordinated by the Coevolution Institute.

Effects of Invasive Plant Species on Pollinators

Invasive species affect both pollinating animals and pollinated plants by disrupting the structure and function of ecosystems. Non-native plants can alter the community composition of natural habitats, reducing food and shelter resources available for all species of wildlife. Native pollinators have co-evolved with the plants they visit, such that their physiology is matched to most efficiently exploit the nectar and pollen resources of the flowers upon which they specialize.

For pollinators that are physiologically adapted to specialize on particular plants, non-natives may present floral structures that are inaccessible to local pollinating animals, preventing them from reaching the nectar reward that lies within. In such cases, the non-native plant “steals” the reproductive opportunity to spread its pollen by attracting pollinators that unwittingly transfer pollen grains while visiting flower after flower, seeking nectar that is physically inaccessible to them. The invasives rob the ecosystem by propagating throughout the habitat, while returning no ecosystem benefits to the animals that depend on that habitat for survival.



Pollinators visiting invasive species are drawn away from native plant species, which may result in reduced reproductive capacity and degeneration of native plant habitats. Introduced plant diseases can be carried from non-natives to native plants on the bodies of pollinators seeking food, and hybrids can be unwittingly created through the genetic mixing that occurs.



Invasive plants can also directly impact pollinators, as shown in the case of the invasive species, garlic mustard (*Alliaria petiolata*).

Garlic mustard threatens native plants in forests of the Eastern and Midwestern U.S. by out-competing native species in the mustard family, known as “toothworts” (Genus Cardamine).

Toothworts provide the primary source of food for caterpillars of the rare West Virginia White Butterfly (*Pieris virginiensis*). Besides causing local extirpations of native toothworts, the chemicals in garlic mustard have a toxic effect on the White Butterfly’s eggs, keeping them from hatching when butterflies unwittingly lay their eggs on the plant’s foliage. Efforts to re-establish native plant communities should consider the vital importance of specific native pollinators for each plant species in a given habitat.



How You Can Help Native Plants and Pollinators:

- ❖ Cultivate only native plants that bloom from early spring into late fall, and plant them in clusters.
- ❖ Reduce or eliminate pesticides whenever possible.
- ❖ Include larval host plants in your landscape.
- ❖ Create homes for bees. Leave an occasional dead limb or tree to provide nesting sites for native bees. Build a “bee condo” by drilling holes of varying diameter 3-5 inches deep in a piece of scrap wood mounted to a post or under eaves with southern exposure.
- ❖ Add to nectar resources with a hummingbird feeder.
- ❖ Provide additional resources for butterflies and bees. Put out slices of overripe fruit, or a sponge in a dish of lightly salted water. Use a dripping hose to create a butterfly and bee drinking area. Mix a small bit of sea salt or wood ash into the mud.
- ❖ Learn more about pollinators. Get a guidebook and learn to recognize the pollinators in your neighborhood.
- ❖ Seek more information, and support local, national, and international efforts to promote pollinators and native plant communities.

Effects of Invasive Animal Species & Pathogens on Pollinators

Invasive species of animal are also major concerns for the future of pollinators and ecosystems in North America and around the world. Parasites such as Varroa and Tracheal mites, African Hive Beetles, and diseases such as Nosema have been introduced to native pollinators by invasive species, decimating pollinator populations and causing severe declines in pollination services for agricultural crops, resulting in economic problems for growers.



Even introduced pollinators such as Large Earth Bumblebee (*Bombus terrestris*) can become a great concern for the future of native pollinating animals. The Large Earth Bumblebee is currently spreading its range throughout Mexico as fast as 75 km per year, out-competing native bumble bee species as it spreads. The consequences for native habitats and pollinators have been documented in Japan and other countries, and NAPPC has assigned a task

force to specifically address this issue in North America.

Conclusion

The negative effects resulting from the spread of invasive species are becoming evident as we witness declines in crop productivity, reductions in the populations of animal pollinators needed to maintain stable ecosystems, and widespread alteration of native habitats. Failure to immediately address these issues could have dire consequences for the future viability of human and wildlife populations, as well as the structure of natural ecosystems.

The **North American Pollinator Protection Campaign** is addressing the issue of invasive species head-on, and among its numerous task forces and committees, it has spearheaded a recently-funded National Academy of Sciences proposal to determine the status of pollinator populations in North America. NAPPC works closely with the International Pollinator Initiative and other proactive efforts to research, document, and effect positive changes for the future of pollinators.



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