

BUTTERFLIES

AS POLLINATORS



Butterflies are crucial pollinators for cotton as they help to transfer pollen between flowers, which is necessary for the production of cotton balls.

Milkweed is a significant plant that increases butterfly attraction and pollination behaviours.

Monarch butterflies are threatened by the decrease in milkweed.



Milkweed does not survive harsh winters.



But can be easily protected: greenhouse, coverings, indoor.

Protecting nectar from harmful insects such as stink bugs enhances the survival rate of pollinators like butterflies.





WHAT YOU CAN DO TO HELP POLLINATORS STRIVE



Bee balm plants are native to Ontario

1. SUPPORT THE GROWTH OF NATIVE PLANTS

Growing diverse plants can be done within small-scale backyards and community gardens.

2. KEEP NATURAL DEBRIS

Twigs and dried leaves make excellent habitats for wildlife and insects.



3. AVOID THE USE OF TOXINS

Garden and lawn chemicals are significant threats to pollinators visiting your gardens.

4. AVOID HARSH TOOLS

Tools like leaf blowers damage insect/animal habitats and functions. For example, noise pollution caused harms bird communication.



Use a leaf rake instead!



Turn lights off when not in use!

5. LIMIT ARTIFICIAL LIGHT

Artificial light can impede the navigation, reproduction, and food-finding abilities of insects and birds.

BEETLES

AS POLLINATORS

Beetles are one of the most diverse groups of insects, with over 400,000 species described worldwide. While some beetle species are known to be pollinators, the majority of beetles are not considered primary pollinators of plants. However, there are a few beetle species that are known to play an important role in pollination.

LADYBIRD BEETLES



Coccinellidae family: Some species of ladybird beetles have been observed to feed on nectar and pollen and may therefore play a role in pollination.

SCARAB BEETLES

Scarabaeidae family: Species of scarab beetles, such as the Japanese beetles, are known to visit flowers for nectar and pollen, thus increasing pollination.



LONG-HORNED BEETLES



Cerambycidae family: Some species of long-horned beetles have been observed to visit flowers for nectar and pollen and may play a role in pollination.

BURYING BEETLES

Silphidae family: some species of burying beetles have been observed to visit flowers for nectar and pollen and may play a role in pollination.



BIRDS & BATS

AS POLLINATORS



Within North America, **Hummingbirds** are primary birds that play a significant role in pollination.

Native plants can add habitats for hummingbirds.

They have evolved with native plants best adapted to local growing seasons, soil and climate.

Hummingbirds prefer large tubular flowers:

Penstemon or **Honeysuckle**.



Bats are **special** animals. They help us pollinate vital food crops and spread seeds that help grow new trees.

As **insectivores**, they aid us in managing pests that plague our homes, agriculture, forests and more.



Habitat loss, hunting, and other factors **threaten** bats.

Conserving bat populations and habitats is crucial for maintaining the biodiversity of ecosystems.



A POLLINATORS SURVIVAL KIT



SEMI-NATURAL HABITATS

Sustainable human interactions with nature: soil conservation, pest control, and pollination service.

BIODIVERSITY

Overall living habitats and landscape composition: Diverse native plants, water.

CLEAN ENVIRONMENTS

Agro-ecosystems should be free from toxic pesticides and invasive species.

References

- Smagghe, G., Boecking, O., Maccagnani, B., Mänd, M., & Kevan, P. G. (2020). Entomovectoring for Precision Biocontrol and Enhanced Pollination of Crops (G. Smagghe, O. Boecking, B. Maccagnani, M. Mänd, & P. G. Kevan, Eds.; 1st ed. 2020.). Springer International Publishing. <https://doi.org/10.1007/978-3-030-18917-4>