

POLLINATORS AND AGRICULTURE

NATURAL AREAS AND POLLINATION

When natural areas are found near agricultural fields with crops that need insect pollination, crop yields increase considerably because those natural areas provide habitat for native pollinators:

- Canola Farmers in Canada have seen higher profits when they've left 30% of the area unplanted. Having native bee habitat close to agricultural crops provides increased rates of visitation from the bees, which, in turn, increases yields.
- In Germany, studies of strawberries grown next to a natural area showed 90% of the strawberries met commercial standards, while only 48% strawberries grown away from natural areas reached commercial standards.
- A study from the United States showed that wild bees are 2-3 times better at pollinating squashes than honeybees. This led to an increased quantity and quality of squashes produced.
- In the USA, imported Canadian Alfalfa Leafcutter bees led to a 600% return on investment when these native bees were released near the alfalfa crops. Since these bees are native to Alberta, there would be no need to import them - only to provide habitat for them near the agricultural lands.

POLLINATORS IN ALBERTA

- Pollinators in Alberta include: bees, wasps, flies, beetles, butterflies and moths.
- We have over 300 native species of bees, most of which are solitary. Solitary bees are not aggressive, unlike social bees that swarm and live in colonies.
- There are two groups of solitary bees: those that nest in the ground, and those that nest in tunnels.

POLLINATION

There are two ways that crops can be pollinated in Alberta, either by wind or from pollinating insect species.

1. Wheat, barley, oats and other grasses pollinate themselves through wind.
2. Crops with flowers, such as Canola, and fruits and vegetables, are pollinated by insects.

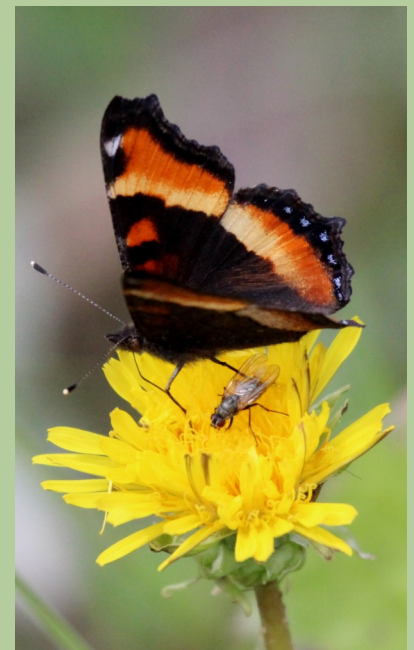


Photo by Dorothy Monteith

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- Ground Nesting Bees prefer exposed or semi exposed soil, and require undisturbed ground (ex. Digger Bees, Miner Bees, Sweat Bees and Bumblebees).
- Tunnel Nesting Bees prefer fallen deadwood or standing dead trees, as well as wooden blocks, bundles of hollow stems, or paper straws (e.g. Mason Bees, Leafcutter Bees and Masked Bees). Bee hotels can provide them with artificial nesting locations, similar to a nest box for birds.
- Albertas native solitary bee species are at least two times better for pollinating plants than honeybees.
- Native bees in Alberta are pollen-collecting bees. This means that they try to obtain as much pollen as possible to bring back to their nests to provide food for their offspring.

IMPROVE YOUR CROP YIELDS WITH POLLINATORS

- Native flower species provide food for pollinators when crops are not yet flowering. Ensuring natural areas contain plants that flower at different times, or intentionally planting native flowers, can provide sustenance to pollinators all season.
- Many bee species are ground dwelling, so leave some soil undisturbed and a buffer of native vegetation around or even incorporated into agricultural fields.
- Allow for a buffer between crops and natural areas when applying pesticides or herbicides, since these can be detrimental to many plant species that pollinators need, or to the pollinators themselves.
- In addition to natural areas, trees and other vegetation at the edges of roads, fence boundaries and shelterbelts, make good habitats for native bees and pollinators. Retaining these remnant and marginal types of vegetation can still provide pollinator benefits, even if there are no large natural areas nearby.

HONEYBEES

Honeybees are not as hairy as native bees, and pollen does not stick to them as well. Honeybees are also more interested in collecting nectar from plants to make honey, so will try to avoid collecting pollen, which results in less pollination.

Honeybee populations are declining due to Colony Collapse Disorder, but native bees are not facing the same issues. This makes native bees and other pollinators even more useful for crop pollination, and emphasizes the importance of protecting their habitat.



Photo by Alana Tollenaar