

Agricultural Climate Solutions

Living Lab – Nova Scotia

Wild blueberry farmers often bring honeybees into their fields during bloom to assist with cross-pollination to improve yield. However, many wild bees are naturally present in and around lowbush blueberry fields, with around 200 species. Wild bees are great pollinators because:

- They are free pollinators
- They fly in damp, cool weather
- Blueberry flowers need shaking to release pollen. Wild bees can buzz pollinate, vibrating to release pollen.

Major Families of Bees Found in Blueberry Fields

Major families include:

Apidae: Includes bumblebees, effective pollinators due to their size and buzzing behaviour.

Halictidae: Often referred to as “small black bees” or sweat bees and contains various species contributing to pollination.

Andrenidae: These bees are among the best pollinators for lowbush blueberries. Some species within this family are specialists, relying primarily on blueberry pollen for their diet.

Understanding and supporting these bee families can enhance pollination and improve blueberry yield. Fostering bee diversity contributes to the

ecosystem's overall health, which benefits other plant and animal species.



An andrenid burrowing in the ground. Some wild bees construct their nest by digging long burrows with side tunnels in the ground. The dirt at the entrance of the tunnel is called tumuli.

Why is Living Lab – Nova Scotia Looking at Wild Bees?

One of the beneficial management practices being tested in Living Lab – Nova Scotia is the establishment of shelterbelts along lowbush blueberry fields. This is done to provide a wind break and to maintain snow cover to help prevent winterkill. A co-benefit of shelterbelts could include higher wild bee populations thanks to the increased food and habitat from the planted trees and shrubs. This would benefit blueberry producers (more free wild bees for pollination = less money spent on honeybees, and potentially better yields). Wild bees also greatly support biodiversity and conservation on farmland in general, providing services to many native plants.



Blue vane traps are used to monitor bee population in living lab shelterbelt sites.

Beneficial Shelterbelt Species for Pollinators

We have planted several species in our shelterbelts that are highly beneficial to pollinators. These include red spruce, red maple, sugar maple, and willow and speckled alder. Here is how each species contributes:

Red Spruce: This evergreen species is a priority for Wabanaki/Acadian Forest restoration, particularly in permanent shelterbelts that can mature fully. It is an effective windbreak during winter, protecting blueberries from winter damage.

Sugar Maple: Another priority for restoration, Sugar Maple is long-lived and shade tolerant. As it ages, it creates old-growth habitats with cavity trees, supporting wildlife like Chimney Swifts and Owls. Owls, in turn, help control rodent populations in agricultural areas.

Red Maple: This fast-growing, shade-tolerant species blooms early, providing a vital source of nectar and pollen for bees in the spring. Over time, it can also develop cavities that benefit wildlife.

Willow and Speckled Alder: Both species offer early foraging resources for bees and are strategically planted at the edges of the shelterbelts. This placement ensures they receive enough light, extending their beneficial presence over the years.

By incorporating these species into our shelterbelts, we enhance habitat diversity, support pollinators, and contribute to the overall health of our blueberry farms.



A red spruce was planted at a shelterbelt site with a mulch mat to reduce root zone competition.

For more information:

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