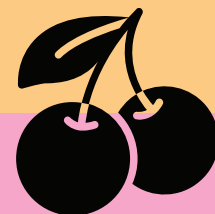


Do You “Know Your 5”?

STONE FRUIT POLLINATION



With more than 350 species of bees in Vermont, it can be daunting to understand them all. This factsheet presents a brief overview of stone fruit pollination and some important pollinators for — and supported by — blossoms of these crops. By identifying and understanding the natural history of these bees and pollinators, you can provide the specific habitat that will help to ensure resilient and abundant pollination services and the tasty treats that result from the bee/plant relationship.

The domesticated western honey bee (*Apis mellifera*) gets credit for most of the agricultural pollination in North America. However, in many cases, wild bee species are more effective pollinators. And unlike honey bees in the Northeast, wild bees do not need human assistance to survive. They just need a safe place to nest and plenty of flowers to eat from.

Stone Fruit Pollination Overview

The genus *Prunus* contains commercial stone fruit, plus a number of native trees and shrubs. Most species bloom in early spring when Northeast weather conditions are often cool and unpredictable. Stone fruits are likely more dependent on wild pollinators, who are more tolerant of lower temperatures and windy conditions as compared to western honey bees. Furthermore, the presence of native bees has been shown to increase honey bee movement between trees, which is important for pollination of self-incompatible fruits. Cross-pollination requirements of stone fruits are species and variety dependent, so careful attention should be paid when making crop selections. Peaches and tart cherries are self-fertile, receptive to pollen from their own variety, and can be planted in solid blocks of a single variety to achieve fruit, but still need insect mediated movement of pollen. Most commercial plums, apricots and sweet cherries are not self-compatible and should be interplanted with different varieties of the same species for fruit set.

General Recommendations For Supporting Diverse Pollinators

Provide flowers, especially native blooms, for as much of the growing season as possible. Also leave a messy area with leaf litter and dead plant stalks, which provides important nesting and overwintering habitat for many bees. Be careful and conservative with any pesticide applications. Avoid spraying during bloom when possible, and follow an integrated pest and pollinator management plan.



The following five bees are important for pollination of and/or are supported by stone fruit blossoms:

Mining Bees (genus *Andrena*)

Many different species of mining bees have been recorded on plums and cherries, both cultivated and wild. The cherry miner (*Andrena pruni*) is often associated with *Prunus* and serviceberries (genus *Amelanchier*), though is limited to the western valleys of the state. All mining bees are ground nesters and most prefer sparsely vegetated, sandy soils.



Bumble Bees (genus *Bombus*)

The ubiquitous common eastern bumble bee (*Bombus impatiens*) is one of the later emerging species, and may not be active when some stone fruit varieties are blooming. Several uncommon and rare bumble bee species are active earlier and likely play an outside role in plum and apricot pollination. Early blooming flowers (willows, maples, etc.) and nesting habitat (hedgerows, woodlots) are important to maximize local populations. There are 13 species in Vermont and with practice many can be identified in the field. Having multiple species on a farm adds resilience and increases pollination in inclement weather.



Mason Bees (genus *Osmia*)

These shiny blue bees are efficient pollinators of many spring blooming fruits. Several species fly early in the spring, making them important for stone fruit production. The blue orchard bee (*Osmia lignaria*) is a well-known fruit tree pollinator that is active as early as late March. Females can be identified by the pollen (or pollen collecting hairs) underneath the abdomen. Many species nest above ground in pre-existing cavities (including bee hotels).



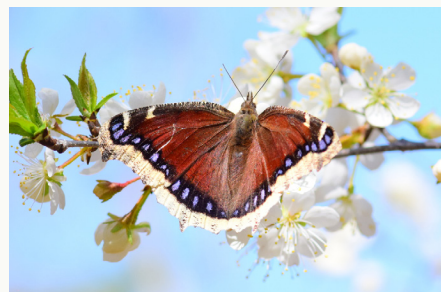
Nomad Cuckoo Bees (genus *Nomada*)

These brightly colored bees are brood parasites of other bees! Most species lay their eggs in the nests of Mining Bees (genus *Andrena*) where the Nomad larvae develop in place of their hosts. Although they don't gather pollen, the adults still visit flowers, including stone fruit and are potential pollinators. Their presence indicates a healthy population of their host species. Most abundant near sandy soils in April and May.



Mourning Cloak (*Nymphalis antiopa*)

Bees aren't the only pollinators! The mourning cloak is a common butterfly that overwinters as an adult and starts flying on warm days in March. Caterpillars feed on a variety of native plants including native plums and cherries. Overwintering sites include woodpiles, peeling tree bark and deep leaf litter. (Photo courtesy of Bernie Paquette.)



All photos courtesy of Spencer Hardy unless otherwise noted. "Do You Know Your 5?" is a project of the Vermont Pollinator Working Group, with funding from the Gund Institute's Apis Fund (<https://www.uvm.edu/gund/apis-fund>). For more information about bees, email shardy@vtecostudies.org. For questions about pollinator support practices on farms, email laura.o.johnson@uvm.edu.