

Maine pollinators need more flowers

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CHESTERVILLE — If you started your day with coffee, if you are about to sneak some chocolate, if you're enjoying seasonal fruits like blueberries, raspberries or blackberries, be sure to thank a pollinator. None of these staples and (guilty?) pleasures would be possible without bees, butterflies and moths, hummingbirds, and even flies and mosquitoes pollinating the world. The little creatures flit from blossom to blossom, gathering nourishment for their offspring, but in the process create food that the world depends on — 35% of Earth's food is dependent on pollinators doing their job.

"Food requiring pollination comprises some of the most nutritious food that we eat," Pollinator Conservationist Eric Venturini told a group gathered in Chesterville Tuesday to learn about ways to buoy pollinator survival at home and on the farm. "Fruits, nuts, berries and many flowering plants themselves can't exist without the presence of pollinators."

Maine is home to 278 native species of pollinators and approximately 3,600 species call the United States home. By some estimates, up to 40% of invertebrates including pollinators are at risk, according to Venturini. The list of factors that may be contributing to insect and pollinator declines is long, and probably includes the 1990s introduction of the class of insecticides called neonicotinoids, broadscale use of certain fungicides, pathogens, climate change, and habitat loss through the intensification of agriculture.

Bees and other invertebrates have suffered declines, some to the point of disappearing from entire regions. The rusty patched bumblebee is one such casualty. Once a common pollinator in landscapes throughout the Northeast and Midwest, now most populations exist in pockets in Minnesota, Michigan, and a few high mountain refuges in the southern Appalachia. The rusty patched bumblebee has not been sighted in Maine since 2009.



Pollinator Conservationist Eric Venturini demonstrates safe methods for examining bumblebees. *Franklin Journal* photo by Nicole Carter

Neonicotinoids are less toxic in agricultural uses to mammals and birds but highly effective against chewing and soil insects, and came to be the most used pesticide in North America and Europe. By 2013, 95% of the United States' major crops like corn were treated with the chemical or one of its related products.

In Maine, potato growers have incorporated its use in their crop management. But the toll on beneficial invertebrates has been substantial. In 2018, the European Union banned the three main neonicotinoids (clothianidin, imidacloprid and thiamethoxam) from outdoor use and the United States Fish and Wildlife Service began phasing out the use on National Wildlife Refuges lands in 2016.

The plight of the yellow-banded bumblebee, one of 17 species found in Maine, has improved over the last few years.

"Populations of the yellow-banded bumblebee crashed hard in New England around 2009, 2010, and 2011," Venturini said. "But starting in 2013 we began to see it rebound. Today a PhD candidate studying bumblebees at the University of Maine, Kalyn Bickerman, estimates that yellow-banded bumblebees make up about 5% of the relative abundance of Maine's 17 bumblebee species. Maine and a few other states in northern New England seem to host rebounding populations of the species, although it has disappeared from much of its original range. Unfortunately the US Fish and Wildlife Service decided that calling the species Federally Endangered was not warranted just last week, but we continue to work hard for good conservation on the ground for the species in New England."



A tri-colored bumblebee, heavy with pollen, forages among goldenrod in a Chesterfield meadow. *Franklin Journal* photo by Nicole Carter

Loss of habitat is another challenge facing pollinators, especially in the U.S.'s farm belt regions. Effects from climate change can also hurt an entire population of invertebrates.

"Land use change," Venturini notes, "is another factor in pollinator declines, although more so in some states than in others. Maine remains about 95% forest, I don't expect that land use change here is a major contributor to the declines we've seen. In the corn belt, where crops are grown in large unbroken swaths, improvements in herbicide and weed management while beneficial for farmers, unfortunately creates a virtual food desert for pollinators. When flowering weeds are eliminated from crop land, fewer food sources are left for pollinators.

“Another danger to invertebrates is when triggers in the natural world misfire. If a pollinator relies on one plant for nutrition but the weather delays its emergence or affects the plant’s growth, it will be a bad year for the insect, which ripples to pollination of other plants. This year we had late blooms on apples and blueberries, which affected insects foraging on those flowers.”

Venturini is heavily involved with efforts in New England to conserve Maine pollinators. The Xerces Society, University of Maine Cooperative Extension and the NRCS Maine have created a program for Maine growers to address red flag issues to pollinators and use practices to increase their habitat. The goal is to incorporate 7,600 acres of cropland in New England to pollinator-friendly practices.

NRCS is awarding grants to farmers to establish pollinator vegetation and cover crop areas in which to grow- with buffer zones separating them from treated crops, maintain wildflower meadows and establish plants that attract beneficial insects like hover flies, and plant flowering trees and shrubs that support pollinator activities. Hover flies are not only pollinators, but the larvae eat plant-damaging aphids.

Home owners can also impact the health of pollinator populations, Venturini said. Less manicured landscaping is an easy option to promote pollinator habitat.

“Old fields are critical to pollinators,” he said. “Mowing a field early in the season- by the first week of June- will give milkweed a chance to flourish and feed monarch butterflies and other pollinating insects. Instead of an early mow to promote milkweed, leaving fields and meadows unmowed until late fall when the plants have finished flowering will help to support more pollinators.”

Venturini is also working on insectary plants specific to assisting growers.

“Insectary strips include plants that attract beneficial insects,” said Venturini. “After several years of on farm trials, my favorite mix so far is a simple one. We have settled on



Rosetta Thompson of Fayette and Robert Webster of Strong work at the edge of a meadow to identify which pollinator species they have captured in their nets. *Franklin Journal photo by Nicole Carter*

a combination of four species– plains coreopsis, sweet alyssum, partridge pea and bachelor’s button. This mix stays at a short height, is easy to establish, fits well into an annual cropping system, and more importantly, is liked by farmers and beneficial insects alike.”

The Xerces Society was established in 1971 and was named for the Xerces Blue Butterfly, which has been extinct since the 1940s. The non-profit organization is committed to conserving the habitat of pollinators and beneficial insects through partnerships with scientists, land managers, educators, policymakers, farmers, and citizens. Learn more about ways to help Maine’s native pollinators on their [website](#).

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