Pollinators for Dinner?

Trouble for Pollinators Means Trouble for All

Article and photos by Tom Ress

A more attractive creature than a pollinator can hardly be imagined. A vibrant yellow-and-black tiger swallowtail butterfly, a zebra-like garden tiger moth, a black-and-orange pipevine swallowtail caterpillar, these insects add beauty and life to our gardens and fields. Aesthetically pleasing and environmentally beneficial, pollinators—largely invertebrates—go about their business, pollinating our crops, flowers, and trees, all while adding a flash of color and a hint of movement to our landscapes. Butterflies, bees, moths, caterpillars; an army of critters rove through our gardens, yards, and fields. The life of a floating butterfly or a skittering moth seems carefree and easy.

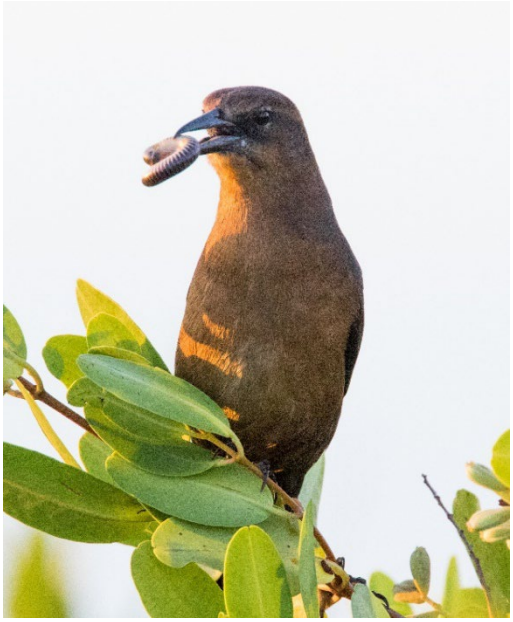
But all is not sunshine and rainbows in the world of a pollinator. For a pollinating insect, it's a precarious world out there. A butterfly blithely flitting around in a flower garden is a vulnerable target for a hungry mockingbird. Although pollination is one of their primary roles in the environment, they have another nearly as important role as a food source for other animals. Caterpillars, butterflies, moths, and other pollinators are primary food sources for a wide variety of birds, reptiles, amphibians, and small mammals.

Many of our most common backyard birds are connoisseurs of pollinating invertebrates. Carolina wrens, bluebirds, cardinals, and nuthatches feast on caterpillars, beetles, and moths. Purple martins are famously known for feeding on mosquitoes, but they are also voracious consumers of moths, beetles, and dragonflies. Orioles are often thought of as fruit eaters, but they prey on caterpillars, moths, beetles, and insect larvae. Tanagers? Skilled hunters of just about any insect. Even tiny hummingbirds, which many of us think of as nectar eaters, consume pollinating insects. According to Narango et al.'s (2017)[1] study on chickadee foraging habits, chickadees preferred to forage and breed in sites with native plants versus those containing more non-native plants, as the native plants were found to harbor higher quantities of caterpillars. The native tree species that chickadees foraged most frequently in included *Quercus*, *Acer*, *Carya*, *Liriodendron*, *Ulmus*, and *Pinus*. Doug Tallamy touts a study performed by Brewer

[1] Narango, et al. 2018. Nonnative plants reduce population growth of an insectivorous bird. Proceedings of the National Academy of Sciences. 115. 201809259. 10.1073/pnas.1809259115.

(1961)[2] which determined that it could take as many as 10,260 caterpillars to fledge a nest full of chickadees. These results suggest that planting more native plants in our gardens not only helps pollinators but also our declining songbirds.

The critical role of pollinators as a food source has recently been emphasized by media headlines about the "insect apocalypse". These attention-grabbing headlines are based on a spate of scientific studies warning of a drastic decline in insect populations that could result in the collapse of the food chain. A 2020 study published in the journal Science found that terrestrial insects are declining at a rate of 9% per decade[3]. This followed a 2017 study suggesting that flying insects had declined by 75% over 27 years.[4] Another study in 2019 indicated that 40% of insect species could become extinct in the next few decades, with insect biomass projected to decline by 2.5% a year[5]. The sad reality is that insect populations, including pollinating insects, are in decline. This decline is apparent to anyone who spends time in the garden or out in the woods. Moths no longer congregate in great clouds around streetlights, fireflies are no longer lighting up the night, and fewer butterflies are fluttering over fields.



All this means fewer plants pollinated but it also means fewer insects on the dinner plate for birds, reptiles, and small mammals. Fewer insects mean fewer birds. As an avid birdwatcher, I have noticed a drastic decline in bird populations over the years. I used to tell people I was out looking AT birds, now I say I'm looking FOR birds. Researchers from the Cornell Lab of Ornithology have found a staggering decline in North America's bird population—a loss of 3 billion birds in the last half-century. This represents 30% of the continent's bird population.

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[2] Brewer, R. Comparative Notes on the Life History of the Carolina Chickadee. 1961. The Wilson Bulletin. Vol 73.4, pg 348-373.

[3] Roel van Klink et al. 2020. Meta-analysis reveals declines in terrestrial but increases in freshwater insect abundances. Science **368**,417-420. DOI:10.1126/science.aax9931

[4] Hallmann CA, et al. 2017. More than 75 percent decline over 27 years in total flying insect biomass in protected areas. PLoS ONE 12(10): e0185809. https://doi.org/10.1371/journal.pone.0185809

[5] Francisco Sánchez-Bayo, Kris A.G. Wyckhuys. 2019. Worldwide decline of the entomofauna: A review of its drivers. Biological Conservation. 232. Pages 8-27. ISSN 0006-3207,https://doi.org/10.1016/j.biocon.2019.01.020.

This can't all be laid at the feet of insect declines of course, the usual impacts of habitat loss and pesticides play a significant role, but the loss of pollinators, a primary food source, will certainly result in starving birds, reptiles, amphibians, and small mammals and a corresponding decline in populations of these creatures. Another knife in the heart of our food chain.

Ditch those pesticides, plant a native garden, keep your fencerows wild. Our pollinators are important, and they need all the help they can get!