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A male Eastern Bluebird feeds his fledgling.



Black-capped Chickadee



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A Chickadee's Guide to Gardening

by
Douglas
Tallamy

Carolina Chickadee with caterpillar





Carolina Chickadee

Plants are as close to biological miracles as a scientist could dare admit. They allow us, and nearly every other species, to eat sunlight, creating the nourishment that drives food webs on this planet. Plants also produce oxygen, build topsoil and hold it in place, prevent floods, sequester carbon dioxide, buffer extreme weather and clean our water. Considering all this, you might think we would value plants for what they do. Instead, we value them for what their our yards. Many of us choose beautiful plants from all over the world, without considering their ability to support life within our local ecosystems. Last summer I did a simple experiment at home to measure just how effective plants we use for landscaping are in supporting local animals. I compared a young white oak in my yard with a neighbor's Bradford pear. Both trees are the same size, but Bradford pears are ornamentals from Asia, while white oaks are native to eastern North America. I counted the

caterpillars on each at head height. There were 410 caterpillars on the white oak and only one caterpillar on the Bradford pear. Was this a fluke? Hardly. The next day I repeated my survey on a different white oak and Bradford pear with a similar result.

Why the huge difference? Plants don't want to be eaten, so they have loaded their tissues with nasty chemicals to deter insects. Insects do eat plants. They select those for which they have adapted to those chemical defenses. Thus, many caterpillars have evolved to eat oak leaves (or cherries, or ashes, etc.) without dying.

By contrast, local insects have only just met Bradford pears in an evolutionary sense. They have not had the eons required to adapt to their chemical defenses. And so Bradford pears, and other non-native plants, stand virtually untouched. In the past, we thought this was a good thing. We didn't want insects eating our expensive Asian ornamentals.

But there are serious ecological consequences from such choices. Last year I watched a pair of Carolina Chickadees in my yard feed their young. Both parents



Common Yellowthroat – Virtually all songbirds must have insects to raise their young. Caterpillars are especially important as they provide soft food, which Doug Tallamy calls “like baby food.”



Saddled Prominent on Red Oak Leaf – this caterpillar is trying to avoid becoming a meal by pretending to be part of the leaf. Unfortunately, it doesn't work; birds love them and find them.

took turns feeding their nestlings, each bringing a caterpillar to the nest once every three minutes. They did this from 6 a.m. until 8 p.m. for each of the 16 days it took the nestlings to fledge. That's a total of 350 to 570 caterpillars every day for a clutch of chickadees, depending on how many nestlings they have. So, an incredible 6,000 to 9,000 caterpillars are required to make one clutch of chickadees. Chickadees are tiny birds: just a third of an ounce. What about nesting orioles, which weigh about three times more than chickadees?

What we plant determines what can live in our yards. By favoring productive native species, we can create life. By using non-native plants, we prevent it. A yard dominated by Asian ornamentals does not produce the quantity and diversity of insects that birds need to reproduce. Our yards offer one of the most empowering conservation options we have by simply incorporating life-supporting native plantings.

By the way, you might assume my oak was riddled with unsightly caterpillar holes, but not so, since birds eat most of the caterpillars before they get very large. From 10 feet away the oak looked as perfect as a Bradford pear.