a voice
for the natural
landscaping
movement

Wild Ones®
NATIVE PLANTS, NATURAL LANDSCAPES

Reprinted from the *Wild Ones Journal,* Oct/Nov/Dec 2013 issue.

For more information, or to join Wild Ones Natural Landscapers, here's how to reach us:

Phone
(920) 730-3986
(877) 394-3954 (Toll-Free)

Mail
PO Box 1274
Appleton, WI 54912-1274

E-Mail
ExecDirector@wildones.org

WebSite
www.wildones.org

Celebrating natives
plant and natural
landscapes
since 1979.

Welcoming Wildlife Into the Garden With Native Plants

By Doug Tallamy

Last summer my wife and I were privileged—but not accidental—participants in one of nature's special performances. A pair of birds nested in our yard. I know that doesn't sound very special. But when you think about what it took for that avian couple to successfully reproduce in our suburban setting, it becomes very special indeed.

I still remember the first time I saw the male blue grosbeak. I thought it was one of our many indigo buntings, but soon realized it was a larger bird, had a beautiful streak of red on its wings, and produced a different song. At first, he spent all day singing. He would flex his azure crest, scan the ground from his perch on one of our ironwood trees, and sing his heart out.

His goal was not to entertain me, but to stake his claim to a breeding territory. He chose our property to raise his young because it is dotted with the small trees and shrubs that are perfect for concealing his nest. Even more important, the insects he needed to feed his nestlings are plentiful here.

The male grosbeak sings for two reasons: to warn off intruding males and to attract a mate. It didn't take him long to find romance; a chocolate-colored female, lured by his melodies, found him and the quality of the territory he was guarding to her liking. Soon she started to construct a nest deep within an alternate-leaved dogwood tree. Blue grosbeaks are among the few birds that use snakeskins as nesting material. The task of locating a suitable skin typically falls to the male, and at our house he was in luck: A black rat snake had left a four-foot skin near a groundhog hole in our meadow. Soon he and his mate had woven the skin among grass blades and sticks to form the nest that would become home for three nestlings. This was his only successful bout of reproduction that year, but he sang in celebration every morning at 7 sharp until mid-September, when he and his mate departed for their overwintering grounds in southern Mexico.

Re-Building Food Webs

Please remember that what I have described did not take place in a national park, or even in a small county preserve. It happened in our yard. It happened in our yard

because we have built our landscape with all of the bits of nature that blue grosbeaks require to make more blue grosbeaks.

Once mowed for hay, our property –a 10-acre lot on the site of a former farm near Oxford, Pennsylvania—is now planted with young oaks, birches, and viburnums; gray dogwoods, flowering dogwoods, and alternate-leaf dogwoods; eastern red cedars, winterberries, and inkberries; American elms, plums, chestnuts, and beeches; silverbells, fringetrees, black cherries, red maples, and other natives. We have planted our yard with a diversity of plants that make the food necessary for grosbeak reproduction. Our woody natives alone support well over a thousand species of caterpillars, as well as myriad other insects that are essential foods for young grosbeaks. After the fledglings leave the nest, these same plants supply the grosbeak family with seeds and berries to supplement their continued diet of insects.

We have the snakeskins our grosbeaks use to build their nest because we have black rat snakes, black racers, milk snakes, ribbon snakes, ring-necked snakes, painted water snakes, garter snakes, and ribbon garter snakes in our yard. We have these harmless reptiles because we have the mice, voles, shrews, salamanders, pollywogs, frogs, and toads that they eat, and because we have groundhog dens that are perfect places for snakes to avoid the weather extremes of winter and summer. And we have snake food because we have the plants that supply the insects and seeds eaten by mice, voles, shrews and toads, and because we leave unmowed refuges for them so they can avoid being decapitated during Saturday mowings.

We have nesting blue grosbeaks in our yard, as well as chipping sparrows, field sparrows, song sparrows, yellowthroats, willow flycatchers, chickadees, cedar waxwings, robins, cardinals, mockingbirds, bluebirds, brown thrashers, titmice, woodpeckers, wrens, and 40 other species of breeding birds because we have redundancy in each of their ecological requirements. If a mockingbird has already built a nest in a suitable dogwood, our grosbeaks can find an unoccupied dogwood—because we have many. If our black cherry trees do not support enough larvae of the Promethea moth, white furcula, and small-eyed sphinx to satiate the baby grosbeaks, our oak trees will fill the void with unicorn caterpillars, redhumped oak worms, confused woodgrains, variable oak leaf caterpillars, and white-dotted prominents. If our black rat snakes shed their skins within a mole tunnel where the grosbeaks can't find them, our black racers will leave their sheds in plain view on one of our mowed paths.

Lawn may be used as a mechanism for formalizing plant communities and for guiding us through our dense plantings.

In short, we have built a landscape that guarantees a steady supply of all of the resources needed by blue grosbeaks to successfully reproduce, a landscape with enough complexity to promote long-term balance and stability in the food webs it creates. We have lawn, but only in the areas we typically walk. At our house, grass carpet is not the default landscape, something we do with the land when we don't know what else to do. Rather, it is a mechanism for formalizing plant communities and for guiding us through our dense plantings.

Our gardens are not destroyed by sharing them with insects, as many people fear, because by encouraging populations of native insects, we are providing the food for the many animals that eat insects: the minute parasitic wasps that reproduce within stink bug and caterpillar eggs, the larger wasps that develop within the bodies of caterpillars and beetles, the assassin bugs and ambush bugs that help control our fall web worms and treehoppers, the damsel bugs that eat plant bug and lace bug eggs, the jumping spiders that pounce on unsuspecting leafhoppers, the entomopathogenic fungi that turn flies and ants into monuments of spores, and the viruses that turn caterpillars into mush. We also have bigheaded flies that make sure we don't have too many planthoppers, small-headed flies that make sure we don't have too many spiders, thick-headed flies that make sure we don't have too many paper wasps, and long-legged flies that make sure we don't have too many aphids. But

our garden ecosystem would not remain balanced without help from local vertebrates: the frogs, and toads, and salamanders, and foxes, and possums, and raccoons, and white-footed mice—and above all, the birds—that eat insects from morning till dusk.

Traditional Vs. Ecological Gardening: An Informal Experiment

We bought our property 11 years ago, one of a number of 10-acre lots resulting from the subdivision of a 150-acre farm. Our immediate neighbors also purchased a single, 10-acre lot. Both households had the usual choices about how to manage their properties. My wife and I (an entomologist by trade) wanted to manage for biodiversity: to do our best to restore the patchwork of forest, meadows, and wetlands that once characterized southeastern Pennsylvania. Our motivation was simple and just a little bit selfish: We enjoy nature and hoped to landscape in a way that brought us into daily contact with its many rewards.

Our neighbors chose the more traditional approach to land management, landscaping their property for neatness, aesthetics, and conformity. The current custom dictates that a property, regardless of its size or location, be planted in lawn that is meticulously maintained and sparsely decorated with standard ornamental plants from Asia and Europe. Throughout the U.S., adherence to this social norm is a measure of stewardship, character, industry, wealth, and status. Our neighbors tolerate our differences in land management because they are nice people and because they have erected an effective screen of Douglas firs that block their view of our property.

Unbeknownst to either of us at the time, we had, with our neighbors, inadvertently embarked on a long-term experiment measuring the impact of suburban landscape choices on the sustainable production of ecosystem services.

Ten years into this experiment, all sorts of interesting comparisons can now be made: We could measure with confidence how well each of our yards sequesters carbon, filters pollutants from rain water before it leaves our properties, holds rainwater on site for maximum water table recharge, and sustains viable populations of plants and animals. We could compare the carbon footprint associated with maintaining each landscape and the number of bird species that have found our yards acceptable breeding sites. We could also compare the number of migratory birds that stop to rest and refuel as they race north to breed in the spring and retreat south to overwintering grounds in the fall.

We could find answers to such questions as: Which property will enable our kids and their kids to catch more lightening bugs on June evenings, marvel over the life cycle of the Cecropia moth or the Polyphemus moth, and watch pollywogs grow little legs and lose their tails? Which of our houses is cooled by summer shade trees or has lower heating bills because of strategically placed windbreaks of vegetation? Which property remains green during summer droughts with no artificial irrigation, and which property is providing more pollination services by nurturing larger and more diverse populations of native bees?

If You Plant Natives, Critters Will Come

I have only begun to tabulate the results, but so far the differences are striking. We now have 103 species of native woody plants on our property, while our neighbors have four; of the 16 species of ornamental plants that adorn their property, 13 are from Asia. Five of their favorite landscape plants—Callery pear, burning bush, Japanese honeysuckle, princess tree, and Miscanthus—are highly invasive and pop up uninvited on our property every year. Their property invariably looks neat and attractive; we enjoy a less controlled profusion of native herbaceous annuals and perennials, including several goldenrods, asters,warm-season grasses, spring ephemerals,

rudbeckias and sunflowers, blackberries, wild strawberries, milkweeds, dogbane phloxes, violets, and eupatoriums. We have allocated 5 percent of our property to lawn, mostly in the form of mowed paths and beauty strips, while 71 percent of our neighbor's 10 acres is in weed-free lawn that is manicured to an even 1.5 inches in height twice a week.

…oaks produce the greatest number of caterpillar species (bird food) of any plant in the Mid-Atlantic States; and oaks sequester the most carbon of any regional hardwood.

We have planted 12 species of oaks in our yard for three reasons: We like oaks; oaks produce the greatest number of caterpillar species (bird food) of any plant in the Mid-Atlantic States; and oaks sequester the most carbon of any regional hardwood. Our neighbors have no oaks on their property. And so it goes. I offer such statistics not to be judgmental but to raise awareness about the unavoidable consequences of traditional landscaping practices, consequences about which most homeowners have not been informed when making choices about their landscapes. Landscape plants are more than decorations! Used properly, they clean and store water, filter air pollutants, reduce heating and cooling bills, sequester carbon dioxide, prevent floods, and maintain food webs; that is, they deliver ecosystem services that are essential to human well-being. The natural areas that used to supply such services for us are now so small and isolated that we need to rebuild functioning ecosystems right in our yards … everywhere. And we can do this only with plants. Every time we add an additional human to the earth, we need more plants, not fewer, in our landscapes.

Traditional landscapes are biologically barren areas that harbor few species, support few natural processes, and thus create few ecosystem services. The species of plants and animals with which my wife and I share our property are important, not because they entertain us, but because they create complex food webs that are essential for sustaining life. They create redundancy in our suburban ecosystem. If one species disappears, or is uncommon one year, several other similar species will be present to perform the ecosystem service once provided by the missing species. Redundancy makes food webs more resilient to natural and humaninduced challenges; that is, it makes them sustainable. We can no longer afford landscapes that do not include life support systems, not if we want to be alive in the future.

My wife and I garden with a heavy bias toward plants that have been part of local food webs for millennia because that is the only way the nature we love will be able to thrive in our yard. Ten years ago, our property was overrun with invasive plants from Asia. We realized that to see local animals, we would have to keep the animals local; and to keep animals local, we would have to restore the food webs that sustain them, Hence, our use of native plants, which provide the best—and in most cases—the only food resources for ur native wildlife, particularly insects that are the protein source for so many of our favorite animals. Are there cases where non-native plants provide food for native insects? Certainly, particularly nectar for butterflies and bees. But there are no cases where plants that evolved elsewhere support insect communities that are more diverse and more abundant than those supported by native plant communities. The Asian butterfly bush (Buddleja davidii) that attracts so many butterflies to your yard does not serve as a larval host plant for any eastern butterflies. If, in our zeal to attract butterflies to our gardens, we only planted alien nectar plants like butterfly bush, we would be left with no butterflies at all. Their native hosts, plants like black cherry, willows, hackberry, and oaks, would be eliminated from managed landscapes. The Callery pears that line the streets in my neighborhood support one species of caterpillar; had the streets been lined with native oaks trees, 534 species of caterpillars could have been made available for hungry birds. Imagine a neighborhood in which native pines are replaced by Deodor cedars from the Himalayas. Our native pine white butterfly is able to develop on Deodar cedars, but if we

replaced native pines with Deodor cedars, over 200 other species of moths and butterflies that can only eat native pines would lose their host plants. Should we tout Deodar cedars as being good for butterflies?

My wife and I have been enormously enriched by our restoration. Rather than ducking inside to avoid the roar of a lawn mower, the nasally whine of a leaf blower, or the sputtering of a weed-whacker, we can now set our watches by the daily sounds of the animals that call our yard home: the midnight scream of our mother fox, as she delineates the territory in which she is raising her seven kits; the dawn chorus of our resident and migrant birds; the midmorning buzz of our annual cicadas as they call for mates; the afternoon whistle of our sentry groundhog as she warns her relatives that a red-tailed hawk is nearby; the late-afternoon hum of our ruby-throated hummingbird as it hovers in front of our coral honeysuckle flowers; the crepuscular echoes of our spring peepers and toads in our marsh; and of course, the 7 a.m. melody of our blue grosbeak male.

This article by Doug Tallamy was reprinted with permission from ***A Native Plant Reader*** a book released this spring by the Brooklyn Botanical Gardens. Niall Dunne, editor of this collection of essays introduces it as “a departure from the typical BBG handbook…this book presents a collection of narratives extolling the virtues of natives, outlining their fundamental contributions to our natural ecosystems, detailing our connections with them, describing the perils they currently face, and advocating for their preservation in the garden and larger landscape.”

Most importantly, www.wildones.org is listed prominently as a “Native Plant Resource”.