



Kingsland Wildflowers Green Roof Top
Image Credit: Rica Robles

Doug Tallamy's Urgent Call for Native Plants and Trees

By Tim Beatley

One of the benefits of a newfound love of the app iNaturalist is that I am able to quickly identify the species and provenance of the plants and flowers I see around me during the course of a day. It is at once delightful (to be able to precisely identify a species) and exceedingly depressing, as it seems most of the visually remarkable flowers I see in late spring in Virginia are non-natives, and many are clearly invasive. My running list of plants includes many ubiquitous non-natives including: red deadnettle; common vetch; periwinkles; lesser celandine; and garlic mustard, which I will say seems to be everywhere right now. Before embracing this wonderful new digital identification tool, I simply had not appreciated the extent to which non-natives had taken over.

University of Delaware professor of entomology and wildlife ecology, Doug Tallamy would not at all be surprised. He has become the high priest of native plants, a persuasive voice on behalf of planting native trees and plants, built on an impressive body of scientific studies and evidence of which we should all take note. I spoke recently to Tallamy, both of us hunkered down in the new pandemic world. Tallamy normally has a busy lecture schedule, but in early March that began to disappear. The timing is not great—Tallamy has a wonderful new book, [Nature's Best Hope](#) (Timber Press, 2019).

Tallamy's main message is a critical one: just about everything many of us care about, for instance my love of birds, depends on a foundation

of native trees and plants. As I write this, several billion birds are migrating to their summer nesting grounds and beginning the process of laying eggs and raising young. For most of these birds nesting success will depend on finding (and stuffing into the hungry mouths of chicks) a startling amount of food. For most species this means caterpillars and many of them. Raising one nest of black-capped chickadees will require an astounding 6,000-9,000 caterpillars! Because of the co-evolution of plants and insects, an exotic ginkgo tree, Tallamy tells me, "is not going to sustain the birds in my yard."

We need more native plants and trees, but we especially need to make sure we plant what Tallamy calls "keystone" plants. These are the super-productive natives

that serve as hosts for a diverse array of invertebrates. "We want to make sure that the keystone plants are the backbone of our landscapes." Some 5-7% of native plants, Tallamy says, provide more than 75% of the food in the food web that sustains birds and other animals. Tallamy and I share a love of White Oaks. In addition to their majesty and beauty, I now have another reason to admire them: they are at the apex of the list of keystone plants and trees, serving as host for a remarkable 557 species of caterpillars.

There are other things we can do. Multiple layers of vegetation in our yards are best. For example, because many insects pupate on the ground it is important to allow wild growth to occur around the base of trees. Eliminating or reducing the use of pesticides and herbicides would also help. An even bolder idea is to begin to see each individual yard as part of a larger ecosystem, with connecting

yards and lawns serving as biological corridors. To this end, Tallamy challenges homeowners to convert at least half of their turfgrass yards to native plants and trees. If everyone followed that advice that would result in some 20 million acres of new habitat. Collectively, this contribute to the newest and largest national park in the U.S., what Tallamy refers to it as a Homegrown National Park.

It is an inspiring vision but one that faces some obstacles including an entrenched American notion of the value of the suburban lawn. When it comes to the monocultural approach to manicured lawns, cultural sway and neighborhood peer pressure often make it a matter of taking the easy way for many homeowners and just fitting in. Local ordinances and HOA covenants often go so far as to outlaw the kinds of lawns that Tallamy has in mind. But, even more of an obstacle may be our

lack of imagination and our staid and static aesthetic about what a yard should look like.

It is worth noting that there has been no lack of writing and advocacy about this in the past, including Yale Professor Herbert Bormann's *Re-Designing the American Lawn* (along with Diana Balmori and Gordon Geballe), which is now close to three decades old. I have been using that book in my classes for a long time and it is a reminder about how long it takes to instigate meaningful change. It has been a perennial challenge and subject of discussion for as long as I have been teaching. What Tallamy and his colleagues add is the pretty compelling body of evidence and research about the ecological value of natives, and native-planted yards, and a sense of renewed urgency about what needs to be done.

I asked Tallamy about cities and whether his advice about

planting natives made equal sense there. “I don’t accept under any circumstances the notion that native plants don’t do well in cities, that it has to be a plant from China. There’s absolutely no logic to that at all.” He described, as an urban legend, the belief that we need to select and plant heartier non-natives in cities.

Tallamy’s work does not specifically focus on natives in urban settings but the implications for what we might choose to plant in cities (but often don’t) are clear. He tells the story in Nature’s Best Hope of a visit to Portland and an impromptu exercise in counting the number of street trees native to the Northwest. To his surprise, he finds the vast majority of the trees he counts are not in fact native at all. Even in an iconic green city like Portland, he finds, deference to nonnative trees seems the rule.

Considerable progress has nevertheless been made in many

cities. Our Australian partner city Fremantle, for example, runs a program to subsidize and assist in the [planting of natives along roadway verges](#). Phoenix, another partner city, has witnessed a significant shift from turfgrass yards to desert natives and xeriscaping, much of it motivated by the need to conserve water. Tallamy estimates that we use 8 billion gallons of water per day irrigating our turfgrass lawns. Phoenix recently [converted the landscaping at its Sky Harbor airport from high-water turfgrass to low-water natives](#), saving energy and public funds as well as water.

There are reasons to be hopeful as we see the establishment of native plants in many parts of cities--for instance on rooftops or building facades and the landscaping around and between public buildings. Cities like New York and San Francisco now have rooftop mandates (requiring the installation of either

photovoltaics or green roofs) and much of the planting can take the form of natives. A wonderful New York City example is [Kingsland Wildflowers](#), a former warehouse in Brooklyn, with a rooftop converted to a 10,000 square foot “wildflower meadow”. By one estimate, there are some 40,000 acres of rooftop space in New York City alone that could serve as habitat for bees, butterflies and birds.

Even in cities where residents are able to change our planting choices, effective control of non-native invasives remains a serious challenge. The amount of labor required is large and the task never-ending. Alternatives, such as the use of herbicides, are not very attractive. There are some 3,300 invasives found in the U.S., so the challenge is great indeed. My iNaturalist observations have given me a sense of how Herculean the task would be.

Urban lighting is another serious problem, Tallamy stresses. We

can plant natives everywhere, “but when you surround them with lights ... they don’t work anymore.” By reducing our outside lighting, we can reduce the insect loss. Shifting to yellow-hued LEDs, when and where lighting is needed, would also help. “Immediately you’ve stopped the slaughter of insects at your lights all summer long.”

I must admit that I am at a loss to understand why we need to plant non-natives, when we have so many natives that are beautiful and magical. Two yellowwood trees in our front yard are for me exhibit number one. In bloom now as I write this article, they are a quite resilient native that puts on a show of fragrant white flowers every spring and is a hardy species that will do well in our increasingly hotter cities. I have recently taken on the mission of planting some native flowers in my yard and several are truly spectacular, including Marsh Marigold and Green-and-Gold. There is something reassuring in knowing they belong and that they are in their small way helping to undergird a larger food web.

But there are hiccups to overcome. Our small local native plants nursery, where I sourced my native plants, has stopped taking orders and isn’t even answering my emails. This is a good sign on one level as demand for natives picks up. But, I am sure there is no shortage of conventional (and non-native) alternative plants available in the bigbox and chain garden shops. We buy what we know and what is easy to find I am afraid. Cities like Fremantle that emphasize natives are bolstered



Black-Capped Chickadee
Image Credit: Tom Murray

by well-established and long-standing native plant nurseries (such as the [Apacé Revegetation Nursery](#) in Fremantle); indeed it is quite common for Australian local councils to operate their own nurseries.

The cover of Tallamy’s book (an American Robin clutching a caterpillar) suggests that the way to our hearts may be through our love of birds. Birds are a definite “hook” he tells me. The birds that have kept me company in recent weeks, the goldfinches, house finches, blue birds, and nuthatches, are truly like members of the family during this age of coronavirus. Tallamy notes in his book the important emotional connections that we develop towards birds: “The cardinal in your yard is not just a cardinal in your yard,” he says “it is your cardinal.” And, in this way, we care deeply about their health and wellbeing, their ability to secure adequate food and water, and their ability to find sufficient caterpillars to raise their young! I believe Tallamy is right, but I must also say I

care similarly and deeply about the goldenrods and the marsh marigolds, and especially the two yellowwoods living in the front space of our home.

Resources:

- Apacé Revegetation Nursery. <https://apacewa.org.au/nursery>.
- Anne Barnard (Oct. 27, 2019). How a Rooftop Meadow of Bees and Butterflies Shows NYC’s Future. *The New York Times*. <https://www.nytimes.com/2019/10/26/nyregion/green-roofs-nyc.html>.
- F. Herbert Bormann, Diana Balmori, and Gordon T. Geballe (1993). *Redesigning the American Lawn: A Search for Environmental Harmony*. New Haven, CT: Yale University Press.
- City of Fremantle (May 21, 2019). Freo verges getting a makeover. News & Media. <https://www.fremantle.wa.gov.au/news-and-media/2152019-freo-verges-getting-makeover>.
- Phoenix Sky Harbor International Airport (June 27, 2019). Airport Saves Water, Resources by Swapping Turf with Xeriscape. <https://www.skyharbor.com/media/PressReleases/2019-archives/2019/06/27/airport-saves-water-resources-by-swapping-turf-with-xeriscape>.
- Douglas W. Tallamy (2019). *Nature Best Hope: A New Approach to Conservation That Starts in Your Yard*. Portland, OR: Timber Press.



A Splash of Yellow-Marsh Marigolds
Image Credit: Ian Preston