

# Reinventing the American Lawn

*So long, turfgrass. Researchers are testing sustainable lawn alternatives that nurture bees, butterflies and other native wildlife with minimal mowing and irrigation and no fertilizers or pesticides*

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Cornell Botanic Gardens' demonstration lawn (bottom) is dominated by native oat grasses studded with wildflowers, including bushy aster (middle) and wild strawberry (above, with resin bee), that feed a diversity of pollinators and other wildlife.

**TWO YEARS AGO**, when my husband and I bought a place on New York's Shelter Island, the three-quarter-acre property was a nasty tangle of invasive vines and shrubs. I knew I wanted to restore a strip of coastal forest and create a flowery native

meadow. But we also needed some more closely cropped plants around the house where our dogs could run and play.

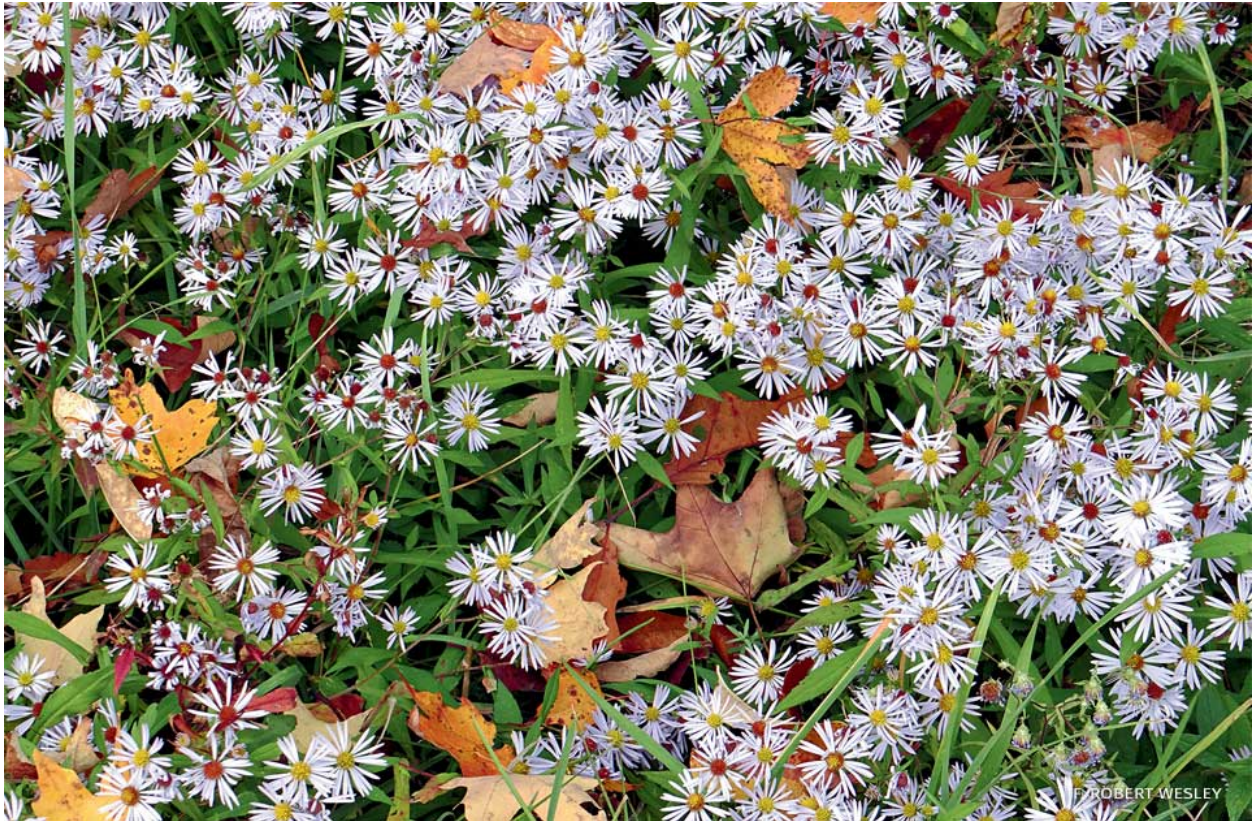
Grasses, which evolved alongside grazing animals, readily tolerate such trampling as well as mowing and are comfortable to walk on. Yet a water- and energy-guzzling conventional turf lawn with little wildlife value was out of the question.

As luck would have it, I learned about the [native lawn demonstration area](#) at [Cornell Botanic Gardens](#) in Ithaca, New York. Dominated by native grasses and studded with dainty wildflowers beloved by pollinators and other wildlife, it sounded like a perfect solution.

Launched in 2009, the project was the brainchild of [Krissy Boys](#), a Cornell horticulturist who was inspired years before when she “met a little blue curly grass growing along a seasonal dirt road” while out hiking. The grass turned out to be *Danthonia spicata*, or poverty oat grass, a North American native commonly found along dirt roads, on hilltops and in power-line cuts, often accompanied by its close relative, *Danthonia compressa*, or flattened oat grass.

Together, these two native grasses formed the foundation of Cornell’s quarter-acre demonstration area, where Boys and her colleagues transformed a nonnative grass and weed lawn into a native lawn that requires minimal mowing, little to no irrigation and no fertilizers or pesticides. Just as important, it provides habitat for a diversity of local plants, pollinators and other invertebrates.

The staff hopes the project will serve as a model that homeowners can replicate. With U.S. lawns collectively occupying three times more land than any other irrigated crop, they say such sustainable alternatives are badly needed.



The two native oat grasses still dominate the demonstration lawn, which originally also included 10 wildflowers, such as wild geranium and moss phlox. Over the years, some species have waxed and waned, or even disappeared, overtaken by new arrivals. Twenty-nine natives have moved in on their own, creating a tapestry of color from early spring through late autumn.

According to [Todd Bittner](#), the botanic gardens' director of natural areas, spring standouts include the common blue violet, which hosts more than two dozen fritillary butterflies and moths, and wild strawberry, a nutritious food source for wildlife. Midsummer brings hairy beardtongue, with delicate, tubular flowers in shades of lavender that attract an array of [pollinators](#), from long-tongued bees to hummingbirds. "It's the host plant for Baltimore checkerspot caterpillars, too," Bittner says, and tolerates mowing. Asters are autumn highlights, including smooth blue aster, heart-leaved blue aster and bushy aster. Too tall for a typical lawn, asters cut to about 8 inches in late summer take on more horizontal growth habits.

The native plants are drawing in native insects. A recent survey found three times as many families of insects in the native lawn as in an adjoining traditional lawn, says Bittner. And the native plot harbors a surprisingly diverse community of insect life—not just pollinators but also herbivores, predators and parasitoids occupying different ecological niches.



The staff is now working on what Bittner calls the native lawn 2.0, in which they'll experiment with different site-preparation methods. Eventually he hopes to develop a native lawn seed mix—including oat grasses and wildflowers—that's as easy to find and use as the turfgrass mixes available today at local garden centers. The mix could be tailored to different regions. Poverty oat grass, for example, is a widespread species found in 46 states. Flattened oat grass is an eastern native, while California oat grass, *Danthonia californica*, grows west of the Rocky Mountains.

Bittner and his colleagues have a laid-back approach to maintaining the native lawn. They do not struggle to remove what they call "benign nonnatives," such as white clover, that self-seed as long as the plants provide some benefit to wildlife. They've found that, once established in a year or two, the lawn needs only two to three hours of care per year. Oat grasses are naturally low-growing—between 8 and 16 inches tall and slightly taller when in flower—so they require cutting just once or twice annually. Because the lawn should not be mown lower than 6 to 8 inches, and the blades of

traditional lawnmowers can't be set that high, it's best to use an electric string trimmer.

My own lawn, which we seeded last September, is just beginning to fill in. But I'm already anticipating whiling away many days this summer watching bees, butterflies and other wildlife flit through the flowers—and not dealing with the 70 hours of annual drudgery needed to maintain a conventional lawn.

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