

in defense of INCLUSIVE BIODIVERSITY

Garden writer Marianne Willburn argues that when promoting biodiversity in cultivated landscapes, the use of native plants should be encouraged as *a* means to an end, not *the* means to an end. The reflexive demonization of alien species ignores the beautiful but complex truth that nature fights to find a way—and for a planet navigating the pressures of climate change and overpopulation, that just might be our saving grace.

LAST SPRING, a friend volunteered her time to create a pollinator-friendly garden that would overlook a large railway hub in her small city. She publicized the project on social media to solicit donations from the public, and her dedication to re-green an industrial space was universally applauded—until she published the planned plant list that contained a mixture of native and non-native plants.

Three of her would-be donors informed her that if the plants were all native, they would oblige. If not, her re-greening project didn't warrant their support.

Forget about the *Panicum*, *Coreopsis*, *Achillea*, and *Echinacea* that had made the list. Those wildlife-friendly natives were going to be sharing space with cultivars of *Hemerocallis*, frequented by butterflies and hummingbirds but originally from east Asia; *Caryopteris*, beloved of wild bees, but shamefully sharing the same provenance; and *Buddleia*, known commonly and justifiably as the butterfly bush, but whose tough habit and ability to re-green industrial wastelands of its own accord has made it a pariah.

Better to have nothing, these three felt, than to support the willful planting of non-native plants into this inhospitable environment.

Thankfully, my friend persevered. The site's compacted and polluted soil was lightened and amended, and a melting pot of native and non-native plants was established,

creating a garden that both beautified an ecologically damaged space and provided habitat for wildlife displaced decades before.

MOVEMENTS MERGING TOGETHER

People build gardens for many reasons. In recent years, however, the popularity of building gardens specifically to attract an abundance of wildlife has grown exponentially. Such a worthy cause has attracted the otherwise indifferent to a more garden-focused life. It is no doubt one of the reasons we experienced such a resurgence in gardening in 2020, as people forced to quarantine at home became reacquainted with their landscapes and began to observe the many creatures that also inhabited those spaces.

At the same time, a parallel movement has grown in visibility and vociferousness. The promotion and protection of native plants has gained an incredible following throughout the many geographically diverse regions of North America. It has slowly trickled down from industry leaders who have devoted careers to their study, to advocacy groups and Extension agents, and eventually to our schools and everyday gardeners. Awareness of the much-touted superiority of native plants is so great that even some non-gardeners looking for quick solutions to suburban lots mention it as a requirement during the annual spring trip to the garden center.

It is not surprising, therefore, that these two movements should meet and marry,



Gardens are meeting grounds for plants from all over world, such *Echinacea pallida*, from the central U.S., and *Eryngium giganteum*, from western Asia.

creating a sub-movement that supports and promotes the planting of native species to build more biodiverse, wildlife-friendly gardens. But as my friend's experience shows, many native plant proponents go further—favoring the exclusion of *all* exotic species in the landscape to achieve this worthy goal. The purest disciples of the movement also eschew the use of “nativars,” or cultivated varieties of native plants, for their straight-species parents—regardless of merit.

“Merit” is the key word in that last sentence, and precisely the characteristic we should be plucking out of this mire of easy absolutes. Plant species should be evaluated on their *merits* and their *faults*, and how they adapt to, function in, and sometimes remediate specific conditions of soil, exposure and climate, all while providing for wildlife populations.

Making these determinations irrespective of labels that designate a plant “good”

or “bad” based on human chronologies and borders will aid us (and the wildlife we adore) to navigate a planet facing the pressures of climate change and overpopulation.

UNNATURAL CONSTRUCTS

“Native plants are plants that grow naturally in a particular area or ecosystem” says the introduction to native plants in the Bureau of Land Management's *Junior Explorer Activity Book*. A harmless sentence in a child's primer—until you recognize the subtext quietly absorbed by young minds: Non-native plants are not natural.

“Natural” is a powerful word, and today's young people are tomorrow's consumers and decision makers. If something is not natural, it is artificial, and suspect.

And yet, in this context—pitting plant against plant—the absolute opposite is true. A strict adherence to a “pure” native

plant landscape, with all of the editing, eradicating, and protecting necessary to preserve it, puts an unnatural construct on nature and natural selection—a process that does not issue passports but instead relies on ecological adaptability to determine if a plant will survive or fail. Nature does not tag favorites beyond these criteria, and gives no preference to human economies or personal attachments.

IS A STATIC ECOSYSTEM “NATURAL”?

Were I to give up on my annual quest to rid my woodland of multiflora rose (*Rosa multiflora*), I am well aware that a very natural process would resume once I stopped directing traffic.

This invasive species would once again take the upper hand in the landscape, working inevitably toward a new, balanced, but completely unrecognizable ecosystem whose evolutionary partners

and predators I can no more predict than I can control.

It might take 5 or 500 of my lifetimes to create, but a human lifetime on a 4.5-billion-year-old planet is many times less than a second, a fact that we appear to have forgotten in our myopic quest to curate static ecosystems.

Multiflora rose, which is native to Asia, was originally brought to North America as root stock for rose breeding programs, but became popular throughout the first part of the 20th century as an ornamental plant in gardens due to its vigor, incredible fragrance, and abundant bloom.

Its ecological attributes were many. It remediated erosion (particularly along stream banks), re-greened strip-mining reclamation sites, created cover and thorny habitat for small mammals and birds, and created impenetrable hedgerows to contain farm animals. In addition, its flowers provided nectar and pollen food sources for insects, and its nutrient-packed hips provided a food source for fruit-eating birds. However, the species' successful adaptation to unmanaged areas has put it on the invasive list in many states.

Multiflora rose is one of the earliest plants to leaf out in my Mid-Atlantic landscape, and each plant has the potential to produce up to 500,000 viable seeds that can exist in the soil for up to 20 years. It can reach 15 to 20 feet or more by attaching itself to small understory trees, slowly blocking their ability to photosynthesize. This is much like our various wild grape species (*Vitis* spp.), which best it by 20 or 30 feet, and smother trees in my landscape with often superior vigor; but which are graciously termed "aggressive" due to their native designation.

Despite multiflora rose's deservedly bad reputation, one can't ignore its ecological attributes. Many is the time I have watched a songbird eating the hips of roses slated for my winter-wielded shovel and wondered, "What if we're at the very *beginning* of a co-evolutionary process?"

Even as I pull out hundreds of multiflora roses by their roots and plant delicate Virginia bluebells (*Mertensia virginica*) to take their place, my desire is irrelevant here. It is the excellent adaptation of the rose to my stream valley that is at play.

What will co-evolve to become its predator over thousands of years? Currently, rose rosette disease favors this rose above all

others. What will co-evolve to be protected by those early leaves and nourished by those oblong winter fruits? Even in these early days of its introduction, some species of leaf-cutting bee have been shown to significantly prefer it in the building of brood cells; and its hips persist into winter when the more delicate berries of native *Ilex verticillata* and *Callicarpa americana* are gone.

If successfully incorporated—giving just as much as it gets—when could it earn the coveted label of native? Ten thousand years from now? Twenty? Will the North American ecologists of the future battle to save multiflora rose from extinction by another newly-introduced species, or will we at that point have recognized the arrogance of imposing human chronologies on the face of an ancient planet?

HUMANS DIRECTING NATURE

However much one loves native spe-

cies—and I do—insisting on a native plant orthodoxy is an intensely anthropocentric position to take. It appoints human beings as authoritarian curators of a natural world that, in an historical sense at least, we have recognized as constantly evolving and changing—often beyond our current understanding.

It demonizes plants that, despite the best efforts of human beings to lay waste to ecosystems through irresponsible methods of mining, quarrying, drilling, clearing, and industrial pollution, still find a way to reclaim and re-green those ecosystems by providing oxygen, wildlife habitat, soil aeration, and nutritive value to other pioneer species.

In effect, it seeks to stop time.

A GENTLE CALL FOR PERSPECTIVE

The concept of alien species as planet rescuers is heretical in many circles. However, it is not intended to dismiss the initial



Multiflora rose has escaped cultivation and invaded natural areas in much of North America.



A silver-bordered fritillary (*Boloria selene*)—a butterfly found in both Europe and North America—feeds from the flowers of *Buddleia davidii*, a vigorous and nectar-rich shrub from Asia.

and sometimes devastating economic and ecological consequences of highly successful alien species in new ecosystems, or the pace of change that human activity has accelerated. It simply seeks to acknowledge the greater time frame that has overseen the often painful processes of evolution in the very ecosystems we seek to preserve.

These processes must begin somewhere. Wildlife species will most probably prefer the native plants with which they co-evolved, just as many humans reflexively favor the foods and habits of their formative years. But studies consistently show that they do not necessarily reject new sources of food and habitat; and in some cases, have already adapted to rely on them.

Surely our focus should be on re-greening the planet, not re-greening it with plants that despite their delicacy, still continue to enjoy favored-child status.

REMOVING HUMANS FROM NATURE

“Natural” also becomes a problematic designation when it is not applied equally to humans as a species on this planet—albeit an almightily destructive one. Our North American designation of native vs. non-na-

tive is rooted in lines drawn in the sand between European colonialization and those populations native to the area at that time, themselves immigrants approximately 10,000 years before, perhaps even earlier. This line effectively separates historical migration of humans from the natural world, and categorizes human migration and its associated effects as alien and non-natural.

With thousands of species initiating new migration routes on a warming planet, some experts are drawing further lines between those species migrating of their own accord in response to climatic pressures (understandable and good), and those introduced to new ecosystems through human intervention (unacceptable and bad). It can be argued that both are ultimately the result of human actions—carbon emissions and trade routes respectively—but both view humans as separate from the equation, and neither take into consideration species that naturally expand their range in response to presumably favorable factors such as increased forestation.

As we face increased challenges with climate change and overpopulation, and battle with those who still would put de-

struction before conservation, wouldn't it be better to stop drawing lines between cultures and species and instead recognize our shared investment in this planet? If pioneering species are able to mitigate the egregious acts of a misguided population, is it wise to participate in floral xenophobia?

I have stood with conservationists and ecologists witnessing the beauty of butterflies landing on *Hemerocallis fulva* in a woodland badly impacted by campgrounds, illegal dumping, and storm runoff; and I have watched them express righteous, palpable, anger at the sight of it.

That type of zealotry makes a person blind to a process that ultimately *should* inspire us, and give us hope—a hardy, vigorous plant taking something broken and making it whole again.

Unfortunately for the daylily, it didn't present the right passport at customs. And no one seems to be interested in a species at the beginning of its evolutionary process in an established ecosystem.

Climate change may soon change that way of thinking.

TURN GARDENERS ON, NOT OFF

New gardeners are frustrated easily, and absolutes topped with a dollop of shame may shut them down—preventing the building of public pollinator gardens because they are not ecologically pure, or biodiverse private gardens, because the owner found many of their favorite bee-magnet plants on the wicked list.

Instead, let's focus on educating the public on the structures and habits of both native and non-native plants that make them superior or inferior support for wildlife; balancing immediate impact to human economies and native species against the possibilities for species adaptation in the future.

Strict orthodoxies will keep us endlessly fighting natural processes and curating toward an ever-in-the-distance, species-perfect landscape. And in our righteous fight to keep what is, we just might miss the critically important lesson Darwin sought to teach us: The miracle of adaptation.

Our currently native ecosystems may well be sacred, but they should not be sacrosanct.

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