Miles rules: SHOULD THEY BE OBEYED?

By Charlotte Adelman

Doug Tallamy says in a National Wildlife Federation article that about 80 percent of suburbia is landscaped with plants from Asia. This statistic is obvious where I live near Chicago. Hostas, daylilies and Eurasian ornamental grasses are so ubiquitous that most people assume they are native to our area. This goes along with the widespread indifference and resistance to landscaping and gardening with native Midwestern species.

Yet, even in the midst of this monolithic viewpoint, there are people who care about the future of butterflies, bees, birds and other living creatures. Finding the like minded, sharing ideas, working together and observing the visiting butterflies, bees and birds make native gardening projects very rewarding.

Giving presentations about gardening with Midwestern native plants in the suburbs and city generally brings small but receptive audiences, including some who are highly motivated, taking notes and asking intelligent questions. I call attention to how native plants are needed by Midwestern butterflies to achieve successful reproduction and explain that these plants host the insects that enable birds to feed their young and achieve successful nesting. During discussions about avoiding potentially invasive nonnative plants, I mention, "The most prudent measure is to choose a regionally native species," according to "*Native Alternatives to Invasive Plants*." When discussing the difficulty of locating local native plant purveyors, I reference the excellent native plant nurseries on the web that carry native Midwestern species.

These discussions inspire many in the audience to start gardening with native Midwestern plants. But sometimes they elicit strong recommendations that everyone should follow the traditional "Don't move plants more than 20, 50, 100-miles, etc. from their original location." This is when it becomes important for me to immediately offer reasonable alternatives. Why?

It is daunting just trying to persuade and inspire city or suburban gardeners to choose native Midwestern plants without adding another requirement. Bringing this up is a good way to alarm and turn off many potential native plant gardeners. Indeed, leaving the impression that it is harmful to the environment and wrong to ignore the miles rules can spell the end to his or her aspirations. And it would be a shame to permit a seemingly arbitrary rule to cause the loss of a potential backyard native plant gardener whose value in helping create a better environment cannot be overstated. To require native plant gardeners to adhere to strict restorationist standards may well be unnecessarily restrictive.

What's wrong with the "miles rules"? First of all, not only are they inconsistent and arbitrary, and not proven scientifically, but they aren't always the best policy, even for restorationists. As an Oregon State University publication notes about restoring threatened and degraded habitats: "It would be nice if there were a consistent distance, some magic number (say, within a 50-mile radius), to indicate how far a plant might be moved successfully, but it is not that simple. For plants, local is best defined ecologically, in terms of climate and environment, rather than in miles." Jeffrey G. Norcini, a University of Florida native plant expert, writes in "Native Plants: An Overview": "Experimental evidence supporting 'mileage rules' is limited at best."

Moreover, attempting to follow a miles rule is difficult and often impossible. Even native plant purveyors may have some or none of the information. Tracking it down requires time, detective skills and proficiency at geography and math. Additionally, due to weather related and other problems, even the finest native plant purveyors frequently obtain portions of their inventory from a variety of growers, and aren't in a position to verify other growers' miles. And, as Norcini observes, "There may be limited or no availability of plants or seed derived from within the specified number of miles of the planting site." (By the way, the place that sells the plants should not be confused with the place where the plants were grown or propagated, such as a nursery.) Fortunately, rather than throwing up one's hands in despair, the native plant gardener can employ ecologically superior ways of gardening that provide practical and realistically appropriate native plant species that will sustain butterflies, bees and birds.

I was pleased to see the Illinois Native Plant Society share a recent ecological study from the Ecological Society of America suggesting an alternative to the traditional miles rules. Related to ecological restoration, the study noted that deploying well-adapted and ecologically appropriate plant materials is a core component of successful restoration projects. "We have developed generalized provisional seed zones that can be applied to any plant species in the United States to help guide seed movement," the study states. "These provisional seed zones can be considered a starting point for guidelines for seed transfer, and should be utilized in conjunction with appropriate species-specific information as well as local knowledge of microsite differences."

An earlier report from the Oregon State University Extension Service also focused on restoration projects, observing: "Because research-based transfer guidelines are not available for most native plants used in restoration, the seed source issue often is overlooked. This can lead to choices at one of two mistaken extremes. One is to stretch project funds by buying whatever native plants are inexpensive or readily available on the market. This can lead to the introduction of inappropriate, poorly adapted plant materials. The other mistake is to rigidly restrict acquisition of plant materials to those from the project site or its immediate proximity. This can lead to loss of genetic variation ... and/or to excessive costs and delays."

The views of Tallamy, scientist and author of "*Bringing Nature Home*," are always relevant. "There are in fact cases when a plant can be moved outside of its native range and still perform some or even most of its evolutionary roles within its new ecosystem," he writes. Moving these plants can be "guilt free" when traits such as leaf chemistry, shape and toughness are very similar. "This occurs typically when the plant is a member of a genus that contains several similar relatives."

One example is the different species of native sundrops *(Oenothera)*. Another is "the very showy azaleas that evolved in and around the Great Smoky Mountains in Tennessee and southwestern Virginia," which "can remain a functioning part of the ecosystem" when he moves them to his house in Pennsylvania because insects adapted to local azalea species ... should have no trouble using the southern species as a resource. "My point here is that a gardener need not be a

complete purist in the use of native plants in recreating functioning habitats for insects and the many birds and animals that eat them."

But there is a distinction, notes Tallamy, between installing a native plant from Tennessee in New Jersey and planting one from some distant location like China, the Rocky Mountains or the Pacific Northwest. The plants' isolation from each other for millions of years produces little likelihood of New Jersey insects being able to use the distant ones as host plants, even if they are in the same genus. Developing so far away from each other makes it likely that their leaf chemistries developed to be so different that local insects will not recognize them as host plants, or if they do, the caterpillars won't be able to safely eat and digest the plants, he writes.

So what should we do to choose the best natives for our backyards and gardens? Wild Ones advocates selecting plants and seeds derived, insofar as is possible, from local or regional sources at sites having the same or similar environmental conditions as the site of the planting. This plant material is often termed the local ecotype. Two plants can be the exact same species, but the one from Wyoming will be of another genotype than the one from Illinois. Due to the differences in their acclimatization (temperature range, diseases, rainfall, pests, etc.,) plant material that originates in and is native to your geographic region is generally the best to use.

These regions have ecological, not political boundaries. Therefore, it is better to use a source from your geographic region but outside your state than to use a source from a different geographic region inside your state. Such regions, often referred to as ecoregions by scientists, are best delineated by the USDA Forest Services U.S. Ecoregions Map, which can be downloaded from Wild Ones here. In general, the more closely you match the environmental conditions of the source of your plant material to that of the planting site, the better it will grow.

To prevent the local extinction of native plants, as well as the insects and birds that rely on them, plants should not be dug from natural areas, but should be bought from reputable nurseries. Ask for seedling stock, not clonal stock, cultivars, nativars or horticulturally enhanced plants. These lack genetic variation, having been usually selected for traits such as bigger, showier flowers or fruits, different colored leaves, or shorter or sturdier stems, a goal of aesthetic uniformity at the expense of genetic diversity.

A list of nurseries carrying (at least some) native plants of local ecotypes can often be obtained from local nature centers, state natural resource departments, local Wild Ones chapters, native plant organizations and the web. Nature centers or nurseries dealing exclusively with native plants are more apt to have stock of local ecotypes. For more information, go to the Wild Ones Local Ecotype Guidelines.

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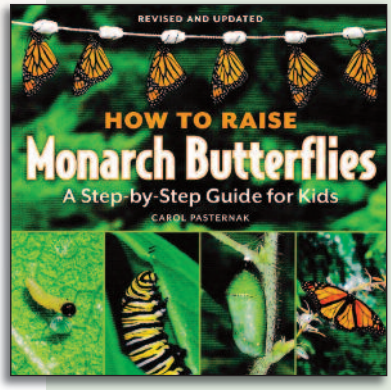
BOOK REVIEW

By Barbara A. Schmitz

If you would have walked into my living room anytime during the summer 15 years ago, you would have seen my fireplace mantel lined with rows of quart canning jars, each filled with milkweed leaves, sticks, monarch caterpillars and chrysalises or pupas. My son was 5 then and into bugs, but especially monarchs, in a big way.

Throughout that summer and the next few summers, we watched the metamorphosis of more than 100 monarchs take place. If we were going away for the weekend and knew that a monarch would magically emerge while we were gone, we packed up the jars in boxes and they went with us, too. We needed to watch them become butterflies, and we always let them free outside once they did.

I learned a lot about monarchs in those days; I could easily tell a male apart from a female, thanks to the black dot on the hind wing of males. I also learned then that they taste with their feet and smell with their antennae, and that their poop was called frass.



But the book, ***"How to Raise Monarch Butterflies: A Step-by-Step Guide for Kids,"*** by Carol Pasternak, quickly showed me there was still a lot I could learn. For instance, did you know monarch butterflies are deaf? Or that a monarch eye has thousands of individual lenses, or that monarchs that emerge in early summer start mating when they are only three days old?

The 48-page book, first published by Firefly Books Ltd in 2012 and revised in 2015, is well done and well organized. It can be purchased through the Wild Ones store.

The book gives clear guidance on what you'll need to raise monarchs, explains the monarch life cycle, and includes a list of resources, plus a handy glossary. It's written for those who have never raised monarchs before, and includes information and beautiful photographs that show you just what to do and expect. But even if you're an old pro at raising monarchs, there are things you will learn.

The book includes sections on what you'll need to create your monarch's home, to how to find caterpillars, and most importantly, how to take care of them. It stresses the need to treat your caterpillars just as you would any pet — and that means taking care of them daily by cleaning their container and making sure they have food, which in the case of monarchs, means leaves from the milkweed plant. It also gives tips for their eventual release.

It includes information on predators and perils, and on mating and migration. But once you and your children are hooked on raising monarchs, the book encourages you to create your own pollinator garden, giving tips how to do that so you can attract a variety of butterflies to your yard the following summer.

The book is an excellent resource for any child who wants to learn more about monarchs. But it's also a great resource for any parent or grandparent who wants to share with their child or grandchild the circle of life and the beauty that the outdoors holds.