

## **Why We Need Native Plants?**

*Doug Tallamy, Ph.D.*



*Great Spangled Fritillary on Butterfly Milkweed. Photo by Rick Darke*

THERE IS MOVEMENT AFOOT. Homeowners across America are taking conservation into their own hands by sharing their yards and gardens with our native plants and animals. Rather than destroying natural food webs to landscape our homes and businesses, we are learning how to use our landscapes to bring nature into our everyday lives. Just in time, we are starting to garden as if life depended on it . . . and we are doing it with native plants.

For the past century we have been painting an American landscape with plants chosen for their beauty rather than their ecological function. Our canvas has been our yards, our parks, our roadsides, and the landscapes owned by our employers. We have been unimaginably successful. In 54% of the U.S., we have transformed the natural world into a suburban/urban savannah in which our North American food webs have collapsed. The impact on our wildlife — our insects, amphibians, mammals, and birds — has been devastating. Scientists now estimate that 33,000 species of plants and animals in the U.S. are on the brink of extinction: no longer common enough to perform their roles in the ecosystems that sustain us.

How has this happened? Easily: we have forgotten why we need plants. It is plants — and plants alone — that transform energy from the sun into simple sugars and carbohydrates, the food that keeps all animals on the planet, including humans, alive every day. We have forgotten that it is plants that supply water and homes for most animals. So when we bulldoze forests to make way for our lawns and sparsely planted developments, we are hugely reducing the carrying capacity — the ability of the land to support life.

Why don't our ornamental gardens support more life? Because we have selected plants less suited to keeping our North American animals alive.

No plant wants to be eaten. Over immense periods of time, plants have developed the ability to produce nasty-tasting chemicals, which they store in their leaves. This strategy of defense is very effective; most animals that eat plants cannot digest the defensive chemicals produced by most plants. Yet, over equally long periods of time, each herbivorous animal species has “learned” how to circumvent the chemical defenses of a particular plant lineage. That is, herbivores have become specialists that rely exclusively on the few plants they can detoxify for food and water.

One of the traits we have valued most in landscape plants is their ability to be “pest free.” We quickly learned that plants that evolved on other continents meet this criterion well, because our animals, particularly our insects, have not had the time to evolve the ability to break their chemical defenses. And so most of our landscape plants are indeed pest-free; they capture energy from the sun, but are less able to pass it on to our local wildlife. The food created by our ornamental plants remains locked in their leaves and our food webs are shattered.

We now know better. More and more homeowners are rebuilding natural food webs in their gardens with the native plants our wildlife need most. We needn’t worry that natives will become defoliated; a diverse planting of natives supports a diverse community of herbivores that, in turn, becomes food for a diverse community of natural enemies, including the birds we would like so much to see in our gardens. Studies have shown that there is no more leaf damage in a garden of native plants than in a garden of non-native plants that are “pest free,” yet the native gardens are full of life.

The University of Delaware Botanic Gardens is leading the way in ecological gardens. Visit our new Lepidoptera Trail, part of the Native Plant Garden to see milkweeds, turtleheads, asters, viburnums, eupatoriums, violets, and rudbeckias in action as they serve as host plants for a variety of moths and butterflies and their larval stages. Watch the buttonbush, oaks, winterberry and willows in our new Wetland Garden raise the carrying capacity of a degraded pasture as they filter nitrogen from the waste water of our dairy herd. Don’t miss the large selection of native plants in this year’s UDBG Spring Plant Sale to help you transform your own yard into a safe haven for our birds and the insects they eat.

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(Top left clockwise)  
*Cercropia* adult,  
*Cercropia* larva,  
 Ruby-throated  
 Hummingbird,  
 American Bullfrog,  
 Red Spotted  
 Purple Butterfly,  
 American  
 Goldfinch

Top left clockwise:  
*Cercropia* adult,  
*Cercropia* larva, Ruby-  
 throated Hummingbird,  
 Red Spotted Purple  
 Butterfly, American  
 Goldfinch photos by  
 Doug Tallamy;  
 American Bullfrog photo  
 by Melinda Zoebler

