



Hummingbirds aren't what they were once thought to be. According to acclaimed entomologist Doug Tallamy, these tiny fliers aren't fueled by a diet composed mainly of nectar. In fact, he says that nectar makes up only 20 percent of what they eat.

Other researchers have found similar conclusions. One completed study followed a female hummingbird for two weeks: not once did she drink nectar.

This news was a surprise to us and brings up a new question: if hummingbirds aren't drinking a lot of nectar, then what exactly do they eat?

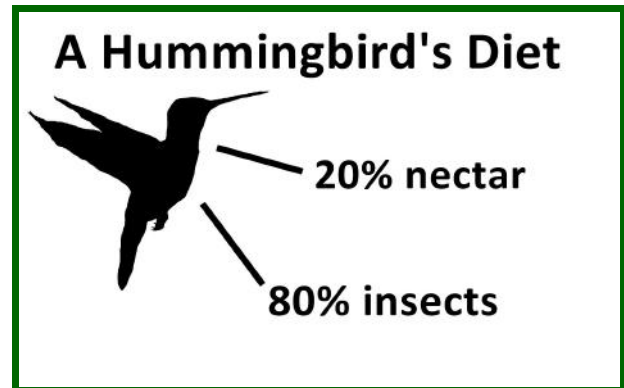
Insects, according to Doug Tallamy. 96 percent of North American land birds depend on insects and spiders for sustenance during their life, and hummingbirds are no exception. "Hummingbirds like and need nectar but 80 percent of their diet is insects and spiders," Tallamy says. "If you don't have those insects and spiders in your yard, it doesn't matter how many hummingbird feeders you have, you are not going to be able to support hummingbirds."

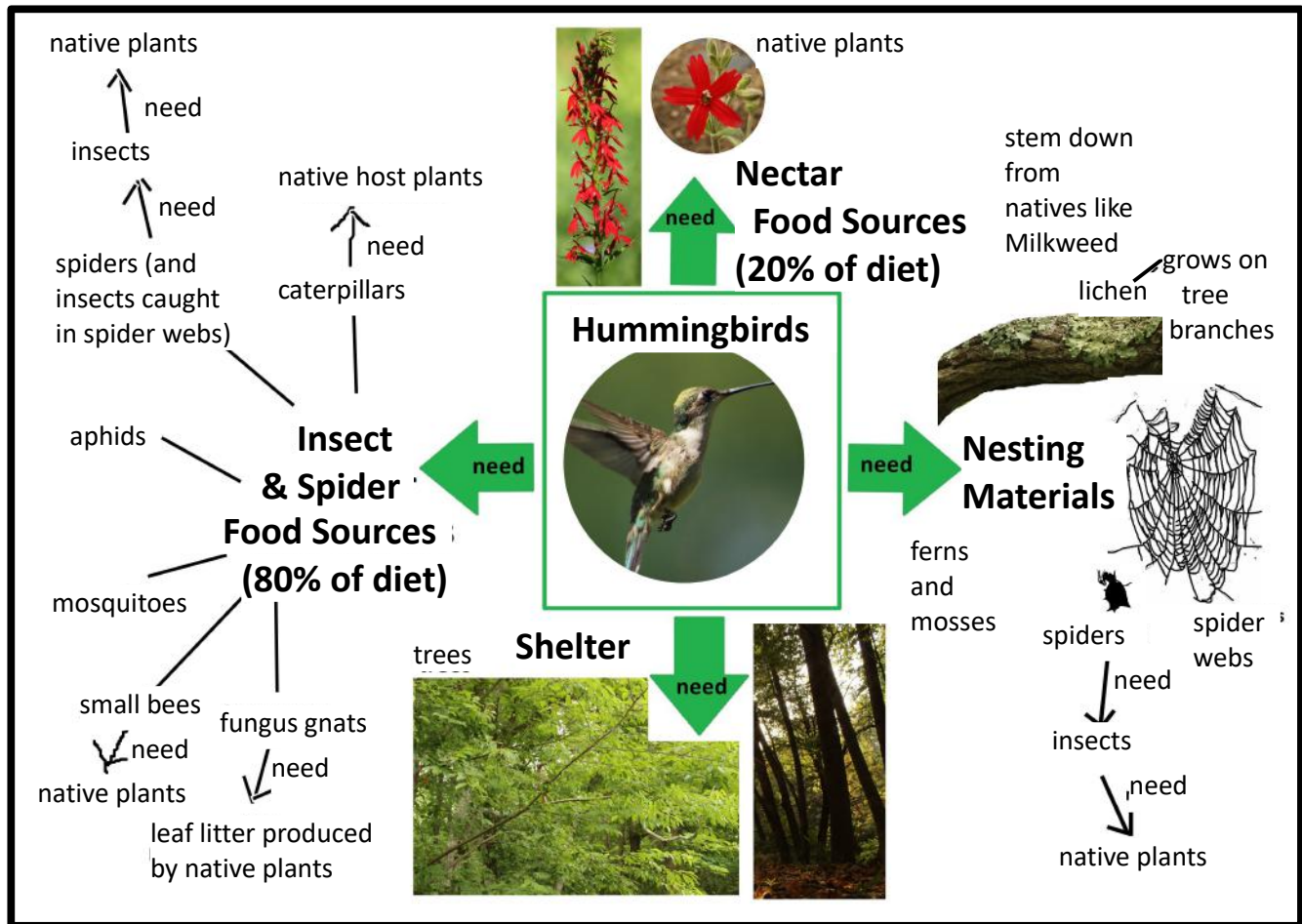
So, at a time when both insect and bird populations are in a downward spiral, and putting out a hummingbird feeder isn't enough, what exactly do hummingbirds need for survival? Let's take a look.

Doug Tallamy's research shows that, in order to support hummingbirds, this earth has to have everything that they need to survive. Planting and encouraging native plants that provide nectar is a start, but this only supports a hummingbird's diet—and a mere 20% of it. If we want hummingbirds around, we have to encourage the rest of what they need. Here are some things hummingbirds can't live without:

1. First, shelter from trees, in which they can also build their nests.
2. Nesting material: Like all birds, hummingbirds use only very specific natural fibers for

Factors like habitat loss have led to declines in birds, pollinating insects, and more—and if you're planting natives, you've probably heard this. But, what exactly makes a habitat? Here we take a close look at this concept with our namesake, the hummingbird.





construction—the fibers of plant stems that were left standing from last summer, ferns and mosses, and lichen. They then use silk from spider webs to hold everything in place.

3. And, of course, their food sources: 20 percent from flowering native plants, and 80 percent from insects and spiders.

The diagram above reflects this, showing some of the essential things hummingbirds need. If we want to see hummingbirds, here's a rundown of what has to exist, at the very least:

- ferns
- mosses
- lichen
- trees (for nesting sites and for the lichen to grow on)
- spiders and their webs (and everything that spiders need to survive—including insects, and then all of the native plants that each of those insects need to survive)
- and aphids, mosquitoes, small bees, fungus gnats, and caterpillars (and all of the things these creatures need for survival: native host plants for the aphids; animal hosts for the mosquitoes; native plant nectar and pollen sources, as well as nesting and overwintering sites, for the bees; and host plants for all of the caterpillars, along with nectar sources for the adult butterflies that lay eggs that then develop into the caterpillars).

And, there need to be enough of each of these creatures that everything within this system can successfully depend upon each other. And this is just for hummingbirds! What if we want cardinals and warblers and frogs and turtles and bears?

Nature is amazingly complex—there is no working in pieces and parts. Systems in nature only operate as a whole, with all aspects working together in exact harmony. If a link or two is missing, the whole system will collapse. Let's take hummingbirds, for example. What if spiders are killed in an area because they're an unwanted pest? Then, because they depend on spiders, that intolerance means that hummingbirds can no longer thrive.

Every animal and plant that exists on earth operates within a system like this, with its own very specific needs. If we take away just one link, it will suffer, no matter where that link is within its systems. For hummingbirds, this could mean spiders, the insects that the spiders need, or the native plants that the insects need. Each leads to the downfall of the next—and to the downfall of hummingbirds. This is true with all animals, from birds to fish—and also true with native plants. Every native plant is playing a part in a chart



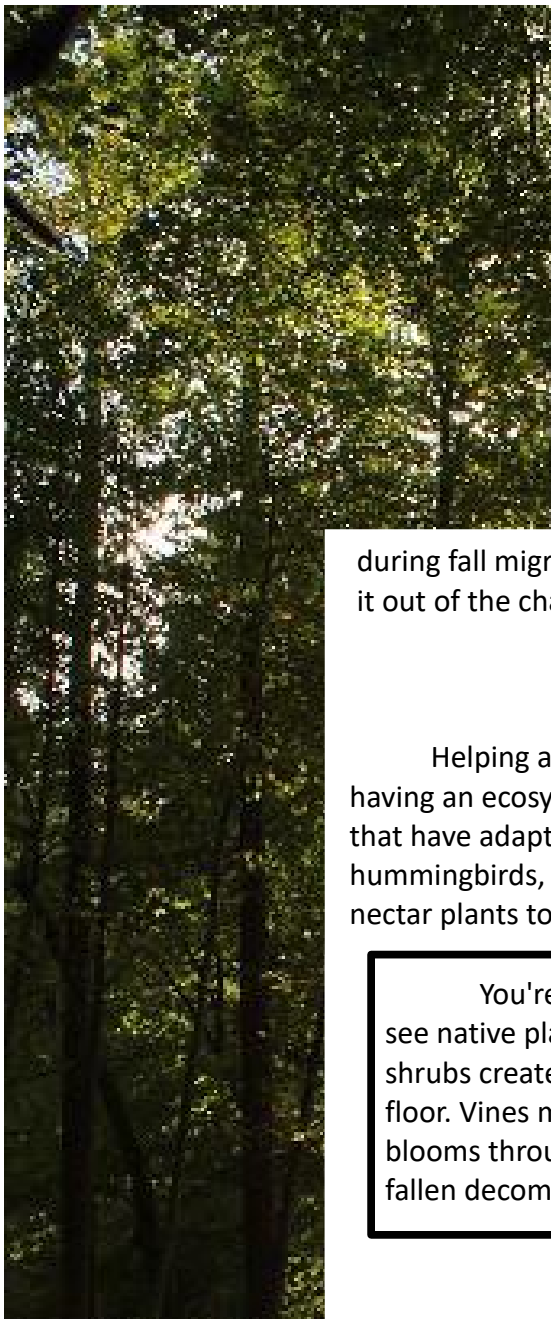
like the hummingbird's, even ones we humans find undesirable. They are here because other parts of wildlife depend on their presence and eliminating them means more than just getting rid of a pesky weed: it's altering the ability of a whole chain of animal species to live. Take, for example, the native poison ivy. We all can't stand to itch from it, but among its roles, it's a necessity for over 60 species of native birds that depend on its berries as a food source

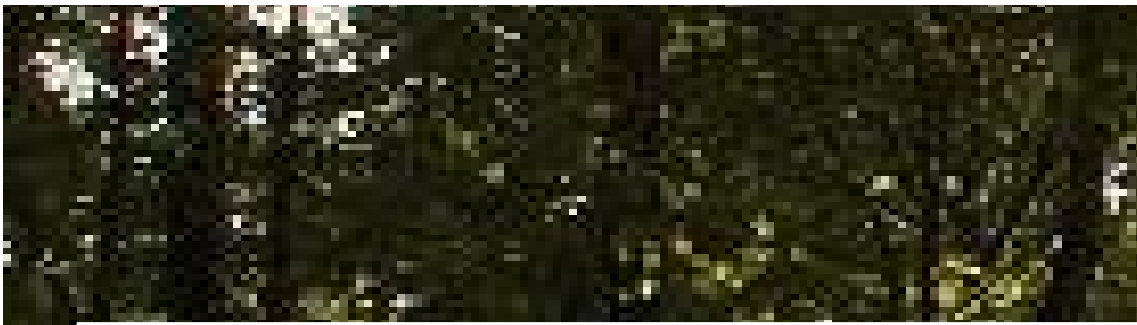
during fall migrations and while overwintering. Take it out of the chart, and these birds suffer.

Every species in nature plays a role in the lives' of other native species: from the spider web hanging in our nursery, to the New York ironweed that this monarch found in a wet meadow, to the fallen leaves that were left in this yard, surrounding a mourning dove. No part of nature can survive unless we accept, allow, and encourage the presence of all parts.

Helping any living thing starts with having high quality habitat—having an ecosystem with the proper combination of plants and wildlife that have adapted together and depend upon each other for survival. For hummingbirds, having quality habitat means encouraging everything from nectar plants to spiders to lichen. Now, let's imagine this:

You're walking through a wooded area. You look around and see native plants everywhere. A canopy of trees hangs overhead, shrubs create a middle layer, and perennials speckle the woodland floor. Vines merge the layers. There's lots of foliage, with a few blooms throughout. A layer of leaves carpets the bare soil, a rock or fallen decomposing branch poking up here and there.

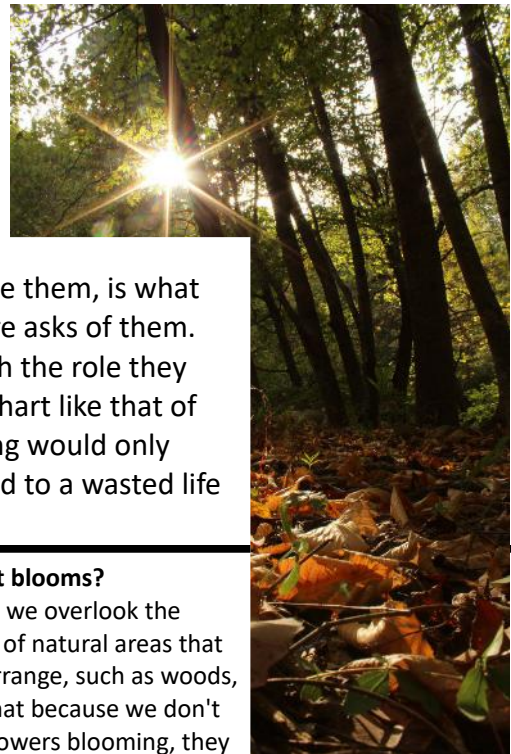




These native plants haven't just randomly popped up here. In natural areas, seeds do not just land where they may and grow in a random, disorganized fashion. Native plants grow in very specific areas based on characteristics like climate, elevation, soil moisture, sun level, and soil acidity and composition, and the plants you find in this area will be different from those growing in a wooded stretch on the other end of the street. However, if you see woods with the same conditions as this one, you are likely to see similar plant species.

Specific insects and wildlife are able to live within this woods because of the plants that exist there, while a different combination of insects and wildlife live in that one down the street. The plants, insects, mammals, and birds all living within a certain natural area have adapted to work together in a complex way—and they only work well together because everything they need is available in that spot.

These complex relationships are what forms a habitat. Naturally-occurring native plants end up in the exact right spot, and wildlife is depending on them right now. The exact right plants growing in the exact right conditions, where the exact right insects and birds and mammals will know how to use them, is what makes native plants able to fulfill the role that nature asks of them. Taking some natives out of this wood would diminish the role they are able to play, removing or minimizing a link in a chain like that of the hummingbird's. Adding others that do not belong would only cause harm and interruption. Both would simply lead to a wasted life for the native plant. This reveals the importance of protecting native plant species that are pre-existing on a property, first and foremost.



Habitat loss—a cause for declines in pollinating insects, birds, and more, and a reason to consider planting natives—is not simply a loss of native plants. Wildlife populations are not declining because of a lack of these plants—they are declining because of a lack of *habitat*, and it's important to recognize and understand this difference. Planting native plants doesn't automatically counteract habitat loss—this

What about blooms?

Sometimes, we overlook the importance of natural areas that we didn't arrange, such as woods, assuming that because we don't see many flowers blooming, they can't possibly be as beneficial as a pollinator garden. But, it's important to remember that a buzzing array of bumblebees and butterflies doesn't signify a healthy, sustaining habitat—it simply signifies a source of nectar. Living things, including pollinators, need more than just nectar—a whole habitat that supports every stage of their life cycle is at work within a natural area. Each plant is playing a larger role at every moment through their roots, leaves, stems, and seeds, all providing critical support for wildlife and plants that live within this community, as well as the soil and the ecosystem as a whole.

can only be done by planting and caring for natives in a very specific way, one that recognizes that every native plant can only play out its role if it's in a specific environment and understands that these plants are just one piece in a system where everything—insects, birds, leaves, stems, fungus, rocks, and decaying logs—works together only because all are present.



Native plants are how they are and where they are for a reason. It can be hard to think of them as living beings of nature, just like any bird or mammal. Man-made industries often surrender them from functioning organisms of nature to articles of color and texture meant for simply looking pretty where we plant them. Humans have altered them—bigger flowers, shorter heights—in ways that we have never touched other pieces of nature. Who would dream of changing the color of a bluejay or making a chickadee remain smaller and flight-less? Imagine how interrupting and confusing this would be to the rest of nature! But, this has been done to native



plants: They've been bred into cultivars that suit preferences for beauty and tidyness—and unaltered ones have been condemned just because they aren't garden-worthy.

But, it is exactly because of these natural qualities that native plants are able to fulfill their roles in habitats. There is a reason Great Blue Herons don't live in deserts, just as there is meaning behind Cardinal Flower growing only in wet areas. And there's a reason Monarchs migrate clear across the country, rather than staying put—as there too is a purpose for Common Milkweed's fast-spreading personality. Rather than trying to contain, alter, or control any of these habits—from the soil moisture of the cardinal flower to the spread of the milkweed or monarch, counteracting habitat loss begins with respecting these qualities, and understanding that they are for a reason. Poison Ivy and Virginia Creeper and Coral Honeysuckle, yes, are all vines, but they are all equally important in the

habitats where they live—and none can be replaced by the other, whether we planted it or not. If we eliminate Poison Ivy, birds that eat their berries cannot simply switch to eating those of Coral Honeysuckle.

Rather than trying to contain, alter, or control any native plants' habits, counteracting habitat loss begins with respecting these qualities and understanding that they are for a reason.

There is a reason every native being exists, both plants and animals. Some plants spread by rhizomes or seed, and many have flowers that are less than showy. That isn't the point: Their

purpose is more than looks, and embracing this factor is one of the best ways we can help nature and wildlife on our own properties. Plant them in the right spot. Give them room to spread; let their seeds float away to colonize distant locations. Let's all work together to encourage native plants to be exactly what they are—this way we can strengthen nature and help reconnect the wild areas that are left to us.

Next time you purchase a potted native plant, I encourage you to look at it and see it for what it is—a living piece of nature, a baby bird in a temporary cage, waiting to be let out so it can fill the role nature asks of it. Where would you release a young warbler, an egret, a hummingbird? How would you care for it?

Where will you release that plant?



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All photos and diagrams courtesy Hummingbird Hill Native Plant Nursery

