



Citizen Science

TRACKING
NATIVE PLANTS
AND WILDLIFE
RESTS ON
VOLUNTEERS

BY KATERI KOSEK



Downy wood-mint.

Foxtail sedge. Slender blue-eyed grass. Agrimony, panicgrass, two-flowered rush. The names may sound like a woodland sprite casting spells, but these are some of over 200 plants listed by Massachusetts as endangered, threatened, or of special concern. They entice volunteers—more than 1,500 across New England, to date—on botanical adventures through swamps, over mountains, or a few steps off the roadside, to document their humble presence, or lack thereof. Equipped with data sheets and maps of the purported location, armed with cameras, GPS apps and bug spray, these amateur botanists have studied their chosen species and timed their trip to coincide with its flowering. If they find it, they cannot reveal the location.

The Plant Conservation Volunteer Corps, created by the Native Plant Trust, the oldest plant conservation group in the country, is one of an ever-growing number of ways that everyday citizens can assist with the monitoring of our rich biodiversity here in the Berkshires—a concept known as “citizen science.” And this year, whether it’s reporting lichens and moths on iNaturalist, or documenting the barn swallows nesting in the eaves with NestWatch, citizen science could be a way to make the most of outdoor recreation close to home.

“I love to have an excuse to tromp places,” says Nanci Worthington, artist and semi-retired massage therapist who has lived in Southfield since 1976. “We get sent places that we would never have access to. A lot is on private land.” Worthington is one of a dozen plant

conservation volunteers, or PCVs, in the Berkshires this year. Once permission from landowners has been secured, they set forth. She has tromped through the Housatonic River and found the plant in question, mostly because her fellow volunteer “fell in the water and landed on it.” Other excursions are tamer such as following the railroad tracks in Housatonic looking for a plant that hadn’t been seen in 30 years.

She didn’t find it. A lot of plants, she notes, were first found in a landscape that’s quite different from the one now, partially because of development, but mostly because of forest growth.

“The light is different. The light is what changes things,” says Worthington. Where her husband grew up on Vossburg Hill near Wyantenuck Country Club is now heavy forest, but it had been open field when his grandparents moved there in 1924. He remembers a young forest and seeing all the way to New York.

As Micah Jasny, botanical coordinator of the Framingham-based Native Plant Trust, explains, “a lot of these plants needs successional changes and frequent fire dynamic. We don’t have that regular disturbance pattern.” Consequently, open, disturbed places like powerline right-of-ways can become rare species hotspots.

One volunteer describes what he expected would be an easy walk to find Virginia snake-root. “I had to go down a steep riprap slope, and I was wearing these minimalist hiking shoes, thinking I wanted to be connected with the earth.” He’s talking to other PCVs at a training session, and everybody laughs. The powerlines were messing with his GPS, and after much scouting amid poison ivy, he found three individual





Bird Count

If eBird, the world's largest biodiversity-related citizen science project that is run by the Cornell Lab of Ornithology, is any indication, it's going to be a big year for citizen science. Worldwide, in the first half of April this year, as compared to last year, eBird checklist submissions were up 46 percent. Photos and audio recordings of birds uploaded to checklists were up 45 percent and 84 percent, respectively, and Merlin Bird ID downloads increased 102 percent. "These are all among the highest year-over-year growth rates we've seen over the past five years," says Ian Davies, eBird project coordinator. "Our normal growth rates are between 20 to 30 percent for each of these metrics."

The Berkshires has its dedicated followers, too. "I've seen a lot more names on eBird that I don't recognize," says avid birdwatcher Rene Wendell. "When I started doing this eight or nine years ago, there was a handful of us going to a handful of places; now there's names I don't even know and it's a beautiful thing for science." eBird data provides a detailed picture of bird population trends for anyone who wants to use it, guiding conservation endeavors worldwide. Even if you're not a researcher, "you have so much information at your fingertips," says Wendell. "It just makes you a better birder. You know things at the click of a mouse that would have taken years of research and diving into books to find out."

You also meet people and make a lot of friends, he says, whom you run into at hotspots like Bartholomew's Cobble in Sheffield. Or, if a Eurasian wigeon shows up at Onota Lake as it happened last spring, everyone knows right away and comes to see it before heading to work. Right now, he says, while people should spread out and go to places that are less visited, "people just want to be outside and do something to lighten the mood. Birds do that. Birds take your mind off it."

To learn about eBird and other bird-related projects, visit the Cornell Lab of Ornithology's home page at birds.cornell.edu. —KATERI KOSEK

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plants, miraculously. "They didn't look like much because they weren't flowering," he notes.

Worthington says of *Agrimonia parviflora*, with affection, "It doesn't look like much. It's a yellow flower with kind of grungy-looking leaves that shows up in rough scrubby sides of swamps." A treasure hunt filled with ups and downs, for a minuscule plant that doesn't look like much and may not even be there, has to be part of the appeal. "We do this because it's fun, and because it's important work to do," she says.

There are 11,000 rare plant populations across New England, says Jasny, and much of New England has never been surveyed comprehensively, especially private lands, where endangered plant species, unlike animals, have zero protection. The state's professional botanists could never monitor these populations alone. Last year, PCVs found over a hundred new populations that weren't being tracked. They also usually collect a small percentage of the plant population's seeds. These are banked at Nasami Farm in Whately, and young cultivars furnish genetically diverse native plants for the nursery trade, as well as reintroduction projects.

The PCV program, created in 1991, has served as a model for other states. It grew out of the New England Plant Conservation Program, which Native Plant Trust created "to help standardize plant conservation on a regional scale," says Jasny. "Each state was protecting endangered species in their own way, not communicating to discuss how they prioritize species."

The Native Plant Trust is not the only group moni-

toring rare plants in the Berkshires. The Appalachian Trail Conservancy (ATC) coordinates with the local chapter of the Appalachian Mountain Club to survey along the trail, sometimes working with botanists from the Native Plant Trust for tricky identifications. "High elevation and alpine areas are particularly vulnerable to human activity," such as trampling and traveling off trail, says the ATC's Marian Orlousky.

All of this data—the presence or absence of species, whether they appear stable or declining—is shared with MassWildlife's Natural Heritage & Endangered Species Program, helping inform management and listing decisions. "The ATC and the trail clubs engage in a good deal of restoration work each year," says Orlousky, often "invasive species management, cutting or burning to maintain early successional habitat, or planting native species."

MassWildlife, which is marking the 30th anniversary of the Massachusetts Endangered Species Act, engages citizens in a host of ways, says Marion Larson, chief of information and education. It solicits information on the nesting activities of peregrine falcons and bald eagles, two species that have recovered nicely. It sends surveys to hunters about what wildlife they've seen, or the size of turkey broods. It works with volunteers and the Department of Transportation to build kestrel boxes, and help animals get across the road more safely in areas of high mortality, based on people's reporting of turtle or amphibian crossings, or even road kill in general.

Beyond state borders, Larson says their ornithologists have been working with eBird to more easily harvest

the data on rare species. eBird is the immensely popular international platform for bird sightings, created by the Cornell Lab of Ornithology. Preliminary statistics show that eBird usage is skyrocketing this year, as people find themselves with more time.

When people pay close attention to the landscape, they begin to notice things. Plants that grow along shorelines appear and disappear in years of high water. If it's a year when deer have "eaten everything in sight," there will be "nothing to see" in the understory, as Worthington recalls. Or the less subtle changes—as when once, in Monterey, a local told her, "You can take a look, but the beavers have taken over in there, so that meadow is basically a pond."

Worthington stresses that though she learns more year by year, she's a volunteer, not an expert. But as an artist and natural sciences illustrator, her artist's eye helps her identify plants, appraising vein configurations and the shapes of leaves. "My eye is geared to putting puzzle pieces together." Once, she found a pink geranium, a common species. "The difference was so minor... The plant I was looking for had a more jagged edge than the geranium. That's what tipped me off."

"As a place-based artist, I've always had a connection to the land. What's changed for me, especially having been on this piece of land since 1976. I think what I've learned is how much the landscape has changed. I see that from a more scientific basis. I can look at the woods now and say, that's transitional forest. I've gotten more of an ecological understanding." ■

