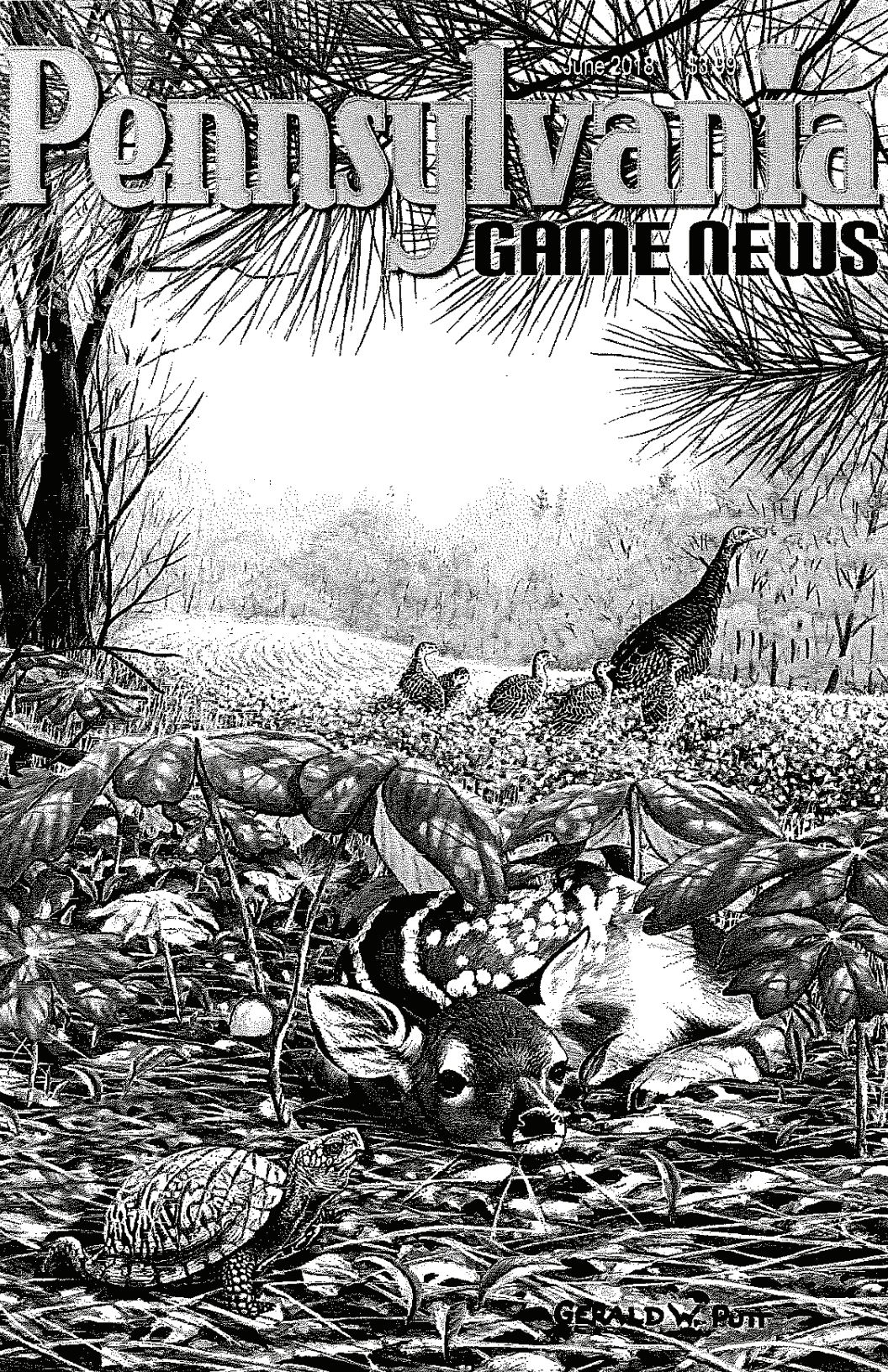


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# Pennsylvania

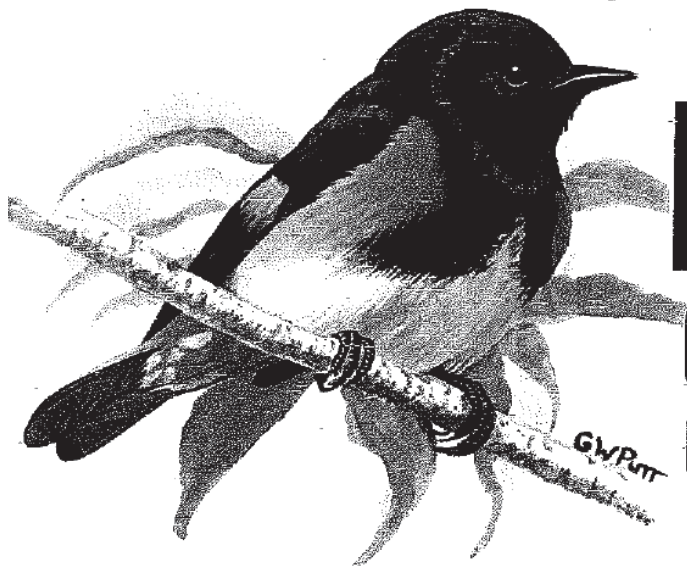
## GAME NEWS



GERALD W. PUTT

# the Naturalist's eye

By Marcia Bonta



## RIGHT OF WAY

### HABITAT LIES BENEATH THE LINES

**I**T'S A HOT, DRY DAY in late June and my 12-year-old granddaughter, Eleanor, and I are among about two dozen people gathered beneath a 500-kilovolt transmission line cutting through State Game Lands 33 in Centre County.

We're there to collect bees for research, but also are gaining an appreciation of how valuable the open land of a right-of-way can be in providing habitat for native species that need shrubby, grassy areas.

Research into how to best manage this right of way and others like it – to benefit wild plants and animals while maintaining access to the lines – has been ongoing at this site since 1953.

On this day, students and faculty

from Ohio State University join representatives from First Energy, vegetation specialists from the Pennsylvania Game Commission, and staff and students from Penn State to learn about the right-of-way's management, then catch bees and put them in jars to be identified, studied, then stored at Penn State's Frost Entomological Museum.

The outing was organized by Carolyn Mahan, a professor of biology and environmental studies at Penn State Altoona who has been working at this site since she was a graduate student in the 1990s.

Once a month in May, June, July and August, volunteers collect bees in six different 50- by 25-meter sites for two hours both in the morning and afternoon.

Since the mid-1980s, the areas directly under the transmission lines have been managed for grasses, forbs and low shrubs, while the narrow borders on each side of the wires have been managed for low- to medium-sized shrubs.

One of six treatments might be used.

We were collecting bees in an area that undergoes low-volume basal bark treatment, which targets individual plant stems, such as unwanted saplings with the potential to obstruct the lines.

This treatment has been the most successful in creating early-successional habitat for native bees, and bird-important border zones also respond well to it.

Dana Roberts, a research technologist with Penn State's Department of Entomology, demonstrated how to carefully net a bee and put it in a jar with acetone.

Elanor didn't need any lesson.

She is very proficient with an insect net, having learned from her father, who's been collecting beetles since childhood.

I held and opened the jar whenever Elanor netted a bee.

She caught several as I studied the variety of wildflowers in the wire zone – common milkweed, evening primrose,

whorled loosestrife and goldenrod. Other native plants, such as sweet fern, spreading dogbane, Virginia creeper, dewberry and hay-scented fern also were growing there.

But most of the bees we collected were nectaring on beds of blooming non-native daisies.

Brad Ross, an instructor and research assistant with Penn State Altoona's biology department, told us of the singing surveys he conducts at eight sites, four times a year, during bird breeding seasons.

He and his team also search for nests on the right-of-way, and had found 63 – 15 more than in 2016.

"It's a source, not a sink" for birds, Ross said.

He showed us an eastern towhee nest in a black cherry sapling on a border that had been cut by chainsaw; but not treated with herbicide.

Nearby, a blackberry shrub harbored a chestnut-sided warbler nest.

Since 1982, scientists have identified over 44 bird species on the right-of-way, most notably nesting common yellowthroats, American redstarts, field sparrows, indigo buntings, chestnut-sided warblers and eastern towhees – all species that use grassy, shrubby nesting areas that might feature blackberry, mountain laurel, blueberry, witch hazel, hay-scented fern or poverty grass.

Other, earlier studies found small northern redbelly and northern ringneck snakes use the wire zone; and salamanders the border zone.

Another study identified eight small-mammal species – white-footed, woodland jumping and meadow jumping mice, meadow and red-backed voles, short-tailed and masked shrews and short-tailed weasels – within the right-of-way, but only two species in the adjacent forest.



Still another study showed that, after the right-of-way was treated with herbicide, browsing deer used it 48 percent more than the forest.

Butterflies were found to be more abundant on the herbicide-treated sites than on hand-cut ones. Like the bees, they're valuable in pollinating the many wildflowers from which they collect nectar.

And on the right-of-way, scientists identified such natives as *Aphrodite fritillaries*, little wood satyrs, monarchs, and spicebush and eastern tiger swallowtails.

Bees, however, have been the most abundant and diverse.

Researchers at the site have documented collecting 1,056 bee specimens representing 96 bee species, five of which are not native, and two that had never been identified in Pennsylvania.

All six bee families in North America were represented.

Areas receiving low and selective basal bark treatments yielded the largest number of bees.

Given the plethora of wildlife, it's no wonder researchers concluded these rights-of-way have the potential to provide valuable conservation land if managed to promote biodiversity.

And in the United States alone, there's 4.9 million to 7.4 million acres of rights-of-way that could be similarly managed.



I couldn't help comparing what I saw at State Game Lands 33 with the small right-of-way that goes up and over a mountain on our property.

When we first moved there in 1971, it had been sprayed from the air, killing all the plant life on it.

The plants and trees returned gradually, and we persuaded the power company to



hand-cut the trees and treat the stumps with herbicide.

On the Laurel Ridge side, the right-of-way reverted to mountain laurel, lowbush blueberry, scrub oak and sweet fern; on the steep south side of Sapsucker Ridge, hay-scented fern and pale corydalis.

In First Field, and flatter areas on either side that are part of the right-of-way, blackberry shrubs, goldenrod and asters grow.

No trees have threatened the wire zone.

Over the years, we have hosted many college classes at our property, and we've always pointed out how well our right-of-way was managed, especially the healthy scrub oaks that are loaded with acorns for wildlife every year.

Last fall, we heard chainsaws on the Laurel Ridge side. To our horror, the electric-line workers – following instructions to cut all hardwood species – had cut down all the scrub oak.

Although scrub oak can grow up to 20 feet tall, in inhospitable mountain soil, ours have never grown much higher than the mountain laurel.

It was especially troubling to lose valuable shrubby habitat after spending so much time on a model right-of-way.

Fortunately, care is taken in the management of some of them. **GN**