

A Dog's Nose Knows



HOW TO HELP FIGHT INVASIVES



BY PAULA PIATT | PHOTOS COURTESY OF THE NYNJ TRAIL CONFERENCE

Quietly. Slowly. I'm absolutely sure I haven't made a sound. It's out of the wrapper—a cheese stick—ready to snack on. I'm sure I'm alone to just savor the moment, but then I feel them—two eyes, staring, pleading.

From one floor and three rooms away, Finn magically appears. "Aren't you gonna share?" she seems to ask, with those dreamy eyes.

Sound familiar? If you've got a dog, well then, you know. Just like Finn knows, or at least her nose knows. And we've been putting those noses to good use for quite some time—using them to sniff out illegal drugs, explosives, missing people, and cancer.

Now, it's conservation's turn.

Invasive species that harm our environment continue their march across the landscape, and New York is particularly vulnerable in the lower Hudson Valley, as goods from across the globe arrive in the region. Unwanted hitchhikers—invasive plants, insects, microorganisms—come with them in shipping crates, on pallets, in a ship's ballast water, and even on the shoes of visitors.

And, as any conservationist will tell you, they stink. Dia thinks so, too. The two-and-a-half-year-old Labrador retriever is the newest line of defense in the New York-New Jersey Trail Conference's fight against invasive species.

The nonprofit is the host organization for the Lower Hudson PRISM (Partnerships for Regional Invasive Species Management), one of eight PRISMs that encompass all of New York. This work complements their efforts to build, maintain, and protect trails, and includes more than 2,000 volunteers that help maintain a network in excess of 2,150 miles.

PRISMs are funded by the Environmental Protection Fund, in direct contract with DEC.

"We know that the sooner you can detect and deal with invasives, the more likely you are to be successful," said Linda Rohleder, director of land stewardship for the trail conference and coordinator for the Lower Hudson PRISM. "The dogs help us find things earlier and be more thorough with our removals."



Dia searches railroad tracks for the invasive spotted lanternfly.

Dia and handler Joshua Beese now patrol the Lower Hudson region—primarily Harriman and Bear Mountain state parks. With 52,000 acres and over 200 miles of trails, it's a lot to cover. Conference volunteers and crews search for and remove the obvious invaders. Dia then comes through and sniffs out what they've missed.

"We go through, thinking an area is clear and she'll find something that is smaller than what we can see or it's hiding under a bush; she's even found invasive plants that are outside the search area," says Beese. The potential of her impact was evident with her first search—34 sites in a 31-acre area. It had already been scoured by the early detection rapid response team and a number of plants were pulled. Taking about 90 minutes per acre, Dia turned up more than 1,200 plants missed by the human search.

Her current targets include Scotch broom, an aggressive perennial shrub that displaces natives, leading to the loss of grassland and open forest habitat. Additionally, its flowers and seeds are toxic. It was Dia's first detection test, chosen because it's an evergreen plant. With training starting in October, they needed an invasive that Beese could identify himself to make sure Dia was indicating the correct plant.

Dia can also detect slender false brome, a grass that outcompetes existing vegetation and can prevent tree seedling establishment. According to Rohleder, this species was chosen, in part, because it is so hard to find.

"Our crews were having a lot of difficulty with this one," she said. "Even if you're fairly good at identifying plants, grasses can be your downfall. We weren't sure that the dog could

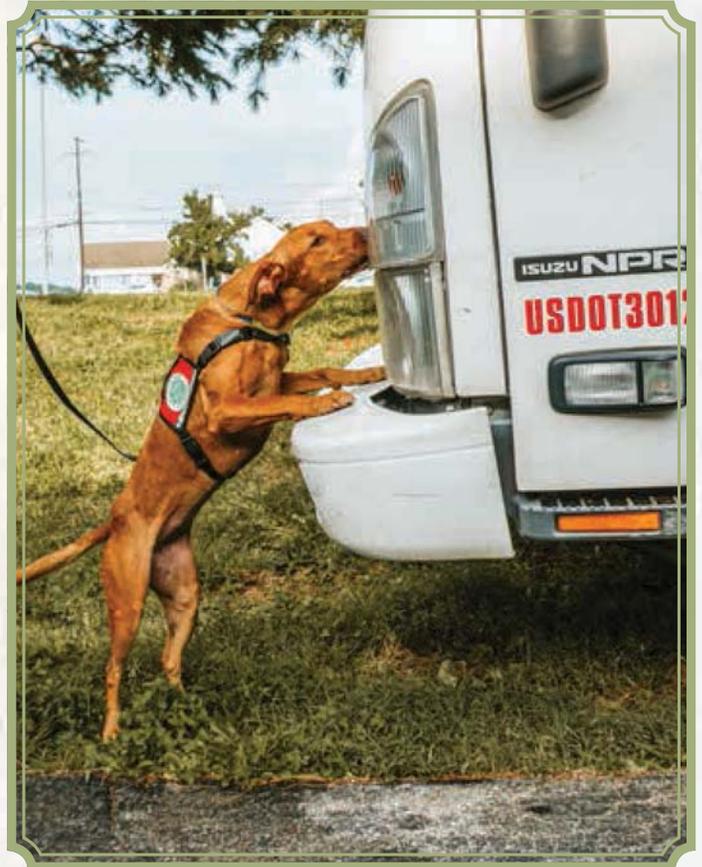
do this, but she does just fine. She can distinguish this grass from other grasses."

In a 12-acre site, Dia turned up almost 1,000 plants, including a small clump 300 feet off the trail. During training in Letchworth State Park, she found a site that searchers didn't even know was there.

Just what is it about these dogs, and how do you go from being a simple canine companion to a super sniffer?



Dia earns a reward.



Dia in a “new” search area with her transportation.

“The key is called play drive,” said Beese, who came to the trail conference with a background in emergency search-and-rescue, having worked with the Federal Emergency Management Agency (FEMA) and the New Jersey Task Force One Urban Search and Rescue. “Essentially, it’s a complete obsession with the toys, and the desire to keep playing with the toy and the handler endlessly,” he said.

Add to that some athleticism—conservation dogs need the endurance for field work—and a work ethic that won’t quit. There can’t be a second thought of heading into a tangle of high grass and brambles.

“The woods are a dream for Dia. She doesn’t stop and her agility is absolutely incredible,” he says of the Wisconsin Lab initially bred for hunting field trials.

She was 11 months old when she came east with Beese in August 2018. She spent about a month bonding and mastering basic obedience, and then they traveled out west for some training with Working Dogs For Conservation, a Montana nonprofit.

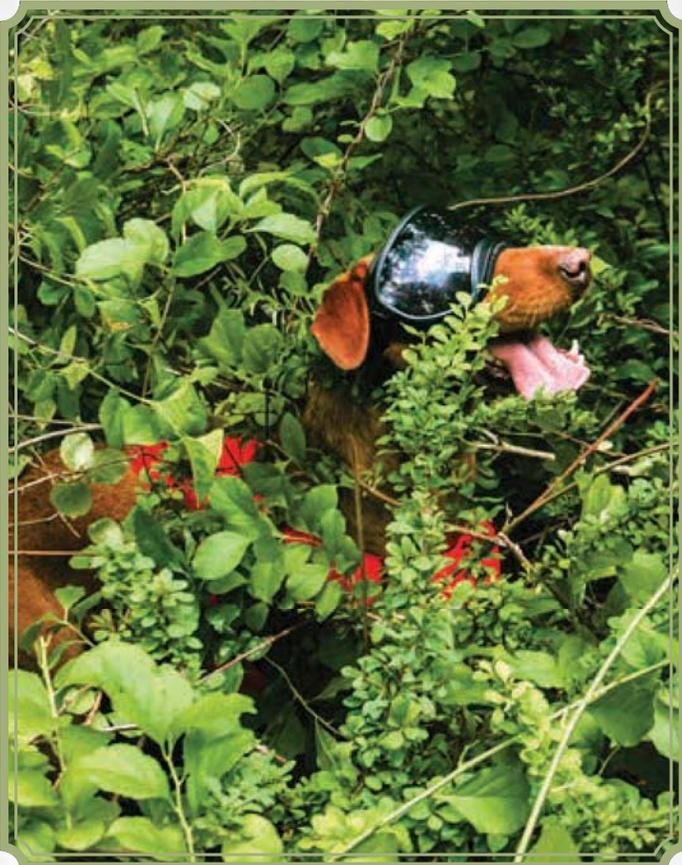
“This work is a lot different than the search-and-rescue work I was doing,” Beese says of the training. “It gave me a chance to see what these dogs could do. There were a lot of new skills I had to acquire.”

As extraordinary as this skill seems, the training is actually as simple as putting the scent between the dog and its toy. Samples of the plant are placed in small boxes and the dog is rewarded when it sniffs out the correct scent. With a nose that is reportedly 10,000 to 100,000 times more acute than ours, it’s really not about the smells.

“There’s a guideline out there that dogs can learn about three scents a year, but it’s more about teaching all of those scenarios that go around the scents; it can’t just be that they can just find the scent in the box,” said Beese.

Case in point is the third invasive in Dia’s nosy repertoire—the spotted lanternfly. An invasive from Asia first detected in neighboring Pennsylvania in 2014, it primarily feeds on the Tree of Heaven, but has also moved on to grapes, hops, maple, walnut, and fruit trees. And it can hide anywhere.

“If you’re training out in the woods, you can’t just bring the dog to a car and tell them to search. You have to teach those skills,” said Beese. “Now, instead of searching the ground for invasives, I had to teach the dogs to extend their body up the trunk of a tree. We also were searching train cars and finding the invasives hiding under the rails, so you have to teach the dogs to run their noses all the way along the rail.”



Dia wearing RexSpecs to protect her eyes from contact with potentially harmful plants.



Dia with her handler, Joshua Beese.

Soon after, the team was asked to participate in roadside vehicle inspections with DEC, New York State Department of Agriculture and Markets, and the State Department of Transportation. It was a great time for Beese to add his Belgian Malinois, Fagen, to the team. Trained for search-and-rescue in a more urban environment, it was just a matter of tweaking his indication response from a bark to a sit.

Rohleder is energized by the work of the dogs. While the PRISM has had an invasives stewardship program since 2011, the introduction of Dia and Fagen promises to be a game changer. “This is just going to increase our effectiveness and efficiency,” she said.

Both dogs are now training on oak wilt, a fungus that attacks all oak trees, but is especially deadly for red oaks, killing the trees in less than six months.

“One of the other great things about the Conservation Dogs program is involving the dogs in education and outreach,” said Rohleder. “The dogs allow us to engage new audiences and introduce the concept of invasive species in a memorable way.”

Because who doesn’t like dogs? Even with those two, staring eyes.

Paula Piatt is a freelance writer from Pennsylvania with a soft spot for dogs, especially her own Labrador retriever, Finn. An advocate for the outdoors, she enjoys hunting, fishing and introducing others to nature.

PRISMs for Protection

The fight to prevent and control invasive species in New York requires a coordinated, collaborative effort. DEC is helping lead that effort through PRISMs (Partnerships for Regional Invasive Species Management), bringing a variety of partners together to combat invasives. These organizations include resource managers and users, non-government organizations, industry experts, concerned citizens, and other state agencies. Collaboratively, the PRISMs plan invasive species management activities, develop early detection and rapid response capabilities, implement eradication efforts, support research, promote education, and more. Volunteers—and, of course, dogs—are a crucial tool to help achieve these goals.

Current PRISMs include: the Adirondack Park Invasive Plant Program, the Capital Mohawk PRISM, Catskill Regional Invasive Species Partnership, Finger Lakes PRISM, Long Island Invasive Species Management Area, Lower Hudson PRISM, St. Lawrence-Eastern Lake Ontario PRISM, and Western New York PRISM. To learn more about New York’s PRISMs, visit: www.dec.ny.gov/animals/47433.html.