

Wherever They May Roam

BY JEFF SIMMS

Illustrated by Tatyana Starikova

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ILDLIFE ECOLOGIST SCOTT LAPOINT spent his winter hanging deer carcasses in the woods. What did you do?

Stomping through snow and ice at the 4,000-acre Black Rock Forest to set bait and install cameras designed to track wildlife movement was probably the exciting part. The rest of his winter—maybe not quite as dramatic—was spent in front of a computer, studying the 90-some-thousand images his cache of 30 remote cameras has collected so far.

LaPoint, who connected with Black Rock Forest through his studies at Columbia University's Lamont-Doherty Earth Observatory, is tracking animals' movements as a way of measuring landscape connectivity—one of the most important principles in land conservation today.

As the climate changes, wildlife habitat is changing, too. Food sources dry up or disappear. Stronger storms cause dangerous flooding and erosion, while cool temperatures, historically found in places like the trout streams of the Catskills, are slowly becoming warmer.

Animals, therefore, are on the move. The hundreds of bird, mammal, reptile and amphibian species that call the Hudson Valley home may roam beyond their normal ranges as they seek more favorable conditions. That's why connectedness between protected lands has become critically important.

"Animals don't perceive manmade boundaries," says LaPoint. "They use their senses to understand territorial or physical boundaries, but as far as conservation, we humans have to think about the landscapes beyond our boundaries."

NOT ALL WILDLIFE HAS the same needs. Take New York's timber rattlesnake, for example. The rattlesnake lives within a relatively contained southeastern section of the state, says Paul Beier, a professor at Northern Arizona University and one of the world's foremost experts on wildlife corridors, who visited Black Rock Forest for a series of talks last year. "But some species aren't going to be able to survive in isolated patches," he continues. "They need connectivity to maintain genetic diversity."

The same is true for plant life as well. Plants and trees can survive and reproduce in a particular temperature "regime" of seasonal patterns, but as those change, Beier says, "Some plants can no longer persist in their current area."

As pollen and seeds travel, by wind or by carrier, plants' and trees' ranges can also change. "You need a space bigger than you might think," Beier explains. "It has to accommodate a population of plants over a long time. You have to support the plants, their dispersers and the pollinators for it to occur."

CONNECTEDNESS IS ONE OF two main characteristics of what's become known as "resilient" lands, a term first coined by The Nature Conservancy a decade ago. The second characteristic is complexity, or an assortment of "microclimates" that create a range of temperature and moisture options for species. And the Hudson Valley, with its steep slopes, marshy wetlands, valleys and ravines, is rich with the complex, resilient terrain that conservationists seek to protect.

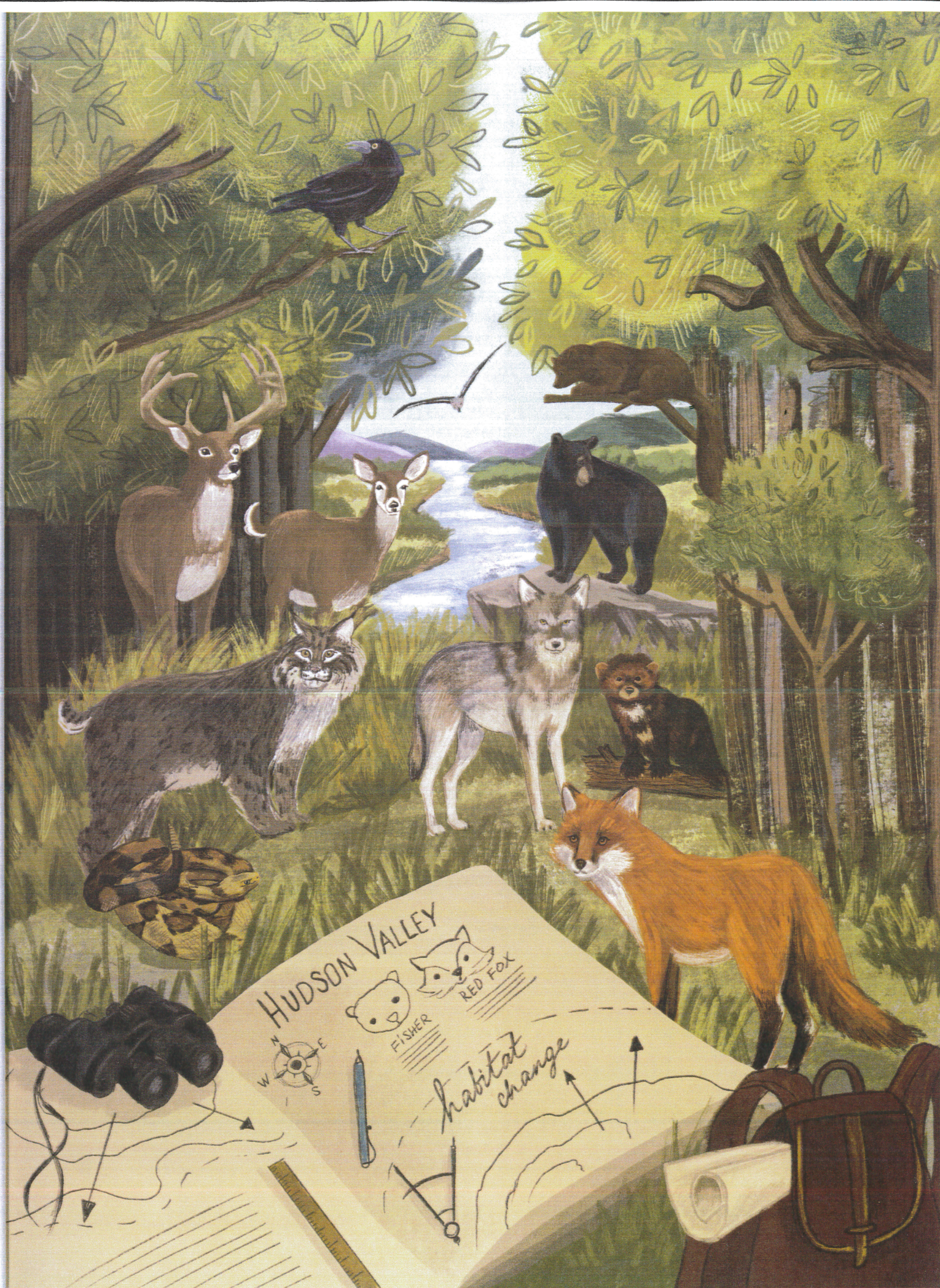
"It's a diverse landscape," says Nava Tabak, the Scenic Hudson Land Trust's director of science, climate and stewardship. "There are a lot of elevation changes and a lot of different types of habitat."

IN THE HUDSON VALLEY, places like the Shawangunk Ridge State Forest and Hudson Highlands State Park score highly for resiliency, which is one reason why conservation organizations have consistently acquired and added lands to these preserves over the years.

West of the Hudson, Black Rock Forest combines with thousands of protected acres—Harriman, Bear Mountain and Storm King state parks—to keep intact a major spring and fall flyway for migratory birds.

LaPoint was recruited by BRF officials last year to study just how well the forest is connected to other surrounding landscapes. Harriman and Bear Mountain, for instance, may be close as the crow flies, but are animals actually traveling to and from these protected lands?

"We wanted to put more data behind the decision-making process of identifying priority lands for future conservation initiatives," LaPoint says. While a nearby parcel may one day be available for sale, "If it's not strategic, it may not make sense to acquire."



ON THE OTHER SIDE of the river, Scenic Hudson is doing similar work. In 2016, the organization introduced the Hudson Valley Conservation Strategy, a mapping tool that identifies the most “efficient” conservation projects to achieve the organization’s goals in three categories: biodiversity, climate resilience and landscape connectivity.

In the 11-county Hudson Valley region, almost 900,000 acres have been permanently protected (by the state and numerous land-conservation organizations), and Scenic Hudson suggests another 750,000 acres could still be preserved to help wildlife adapt to climate change. The organization’s mapping identifies the areas where opportunities for such conservation may exist, Tabak said.

Much of LaPoint’s time at Black Rock Forest last winter was focused on fishers, the 8- to 12-pound carnivorous mammal that’s related to the American marten and is the only known North American mammal that can kill and consume a porcupine.

The fisher, however, was nearly wiped out in the United States more than a century ago, save for a few isolated pockets, one of them the Adirondack High Peaks region. Hunted for its fur and dependent on what was then-dwindling forestland habitat, fishers were the subject of some of New York State’s first conservation laws, including a highly restricted trapping season.

BY THE 1970S, THE species had bounced back and was reintroduced elsewhere in the state. Today, fishers can be found in New Jersey, Massachusetts, Rhode Island and Pennsylvania. “This is an animal in New England that you could only find in the most remote areas,” LaPoint says, “and now you can find them almost anywhere—at least where they’re supposed to be.” One was even found five years ago in the Bronx, “But that’s another story,” he adds.

Will the resurgence of the fisher provide clues about which parts of a landscape are most valuable? “Any sort of fisher expansion down here is natural,” LaPoint points out, “and would be a very good indicator that things are going well ecologically.”

By trapping and fitting animals with a GPS collar called an accelerometer, species’ movements can be tracked more accurately than ever before. If connected lands are actually functioning as scientists believe they do—allowing animals to roam freely—the data should reflect as much.

The devices have been used on raptors to track flight patterns, and they’ve even given scientists a better understanding of mountain lions’ hunting patterns by tracking the animals’ expenditure of energy. But after two months of camera-trapping (i.e., looking) at Black Rock Forest, by early February LaPoint had yet to find a fisher: “We’ve seen bobcat, coyotes, black bear and red fox here in the forest, but so far, no fisher.”

The species has been seen nearby—in places like Newburgh, Sterling Forest State Park and West

Point—but save for isolated sightings in 2013 and 2015, they haven’t been found in Black Rock Forest. Could this part of the Hudson Valley mark the southern edge of the mammal’s expansion so far?

That’s why LaPoint’s answer, as far as the region’s connectivity, may take some time and involve more than simply connecting swaths of green on a map. Over the next two years, he hopes the data will reveal which aspects of a landscape are most important to animals and perhaps explain why.

“We’re going from ‘we don’t know where animals are’ to very detailed information as to where they actually go through the landscapes,” LaPoint says. “To me, this is how science works. You may have a prediction, but then you find out the story is way more complicated than you thought it would be.”

For more information on Scenic Hudson’s HV Conservation Strategy, visit www.scenichudson.org/HVCS and for more information on the conservation efforts of Black Rock Forest, visit www.blackrockforest.org. ■

