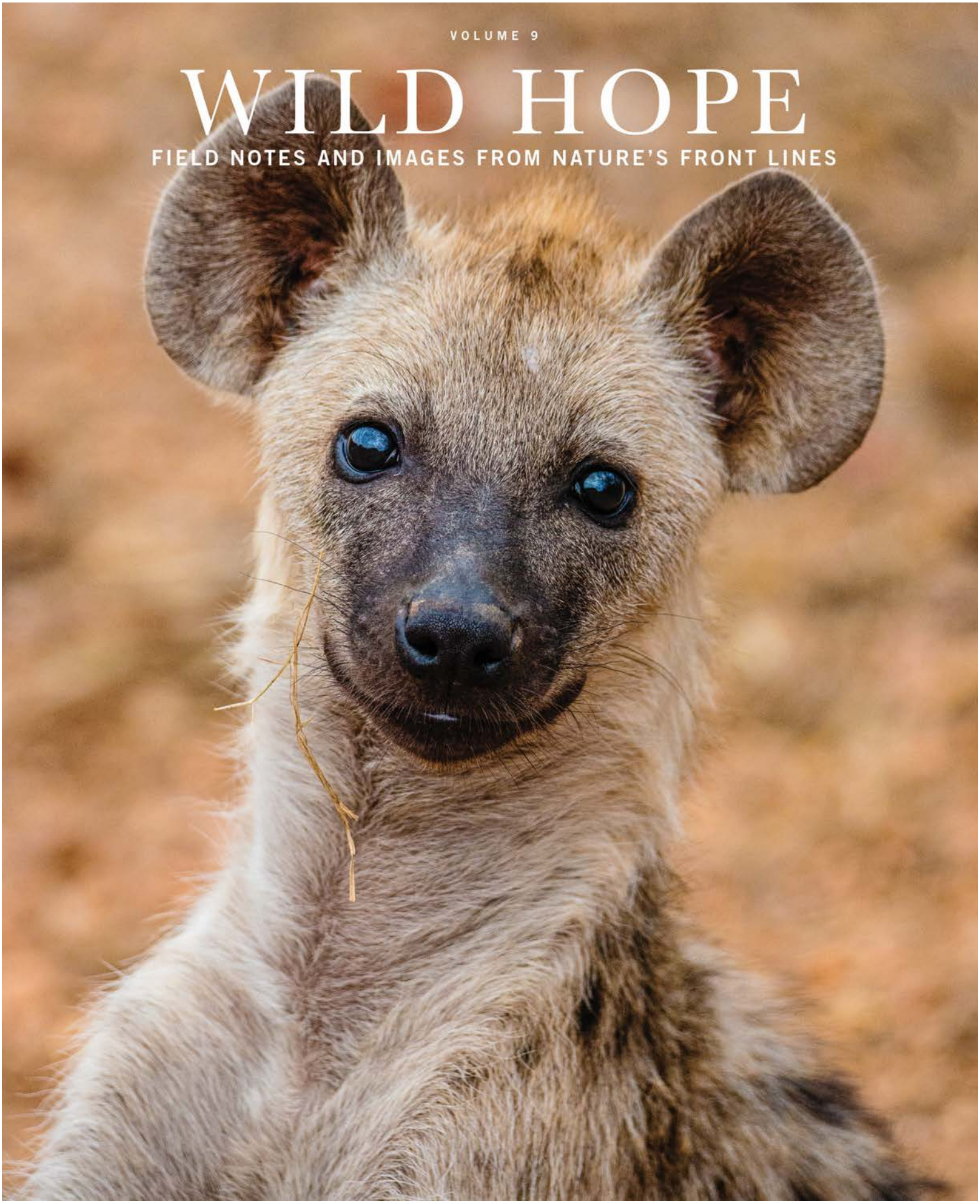
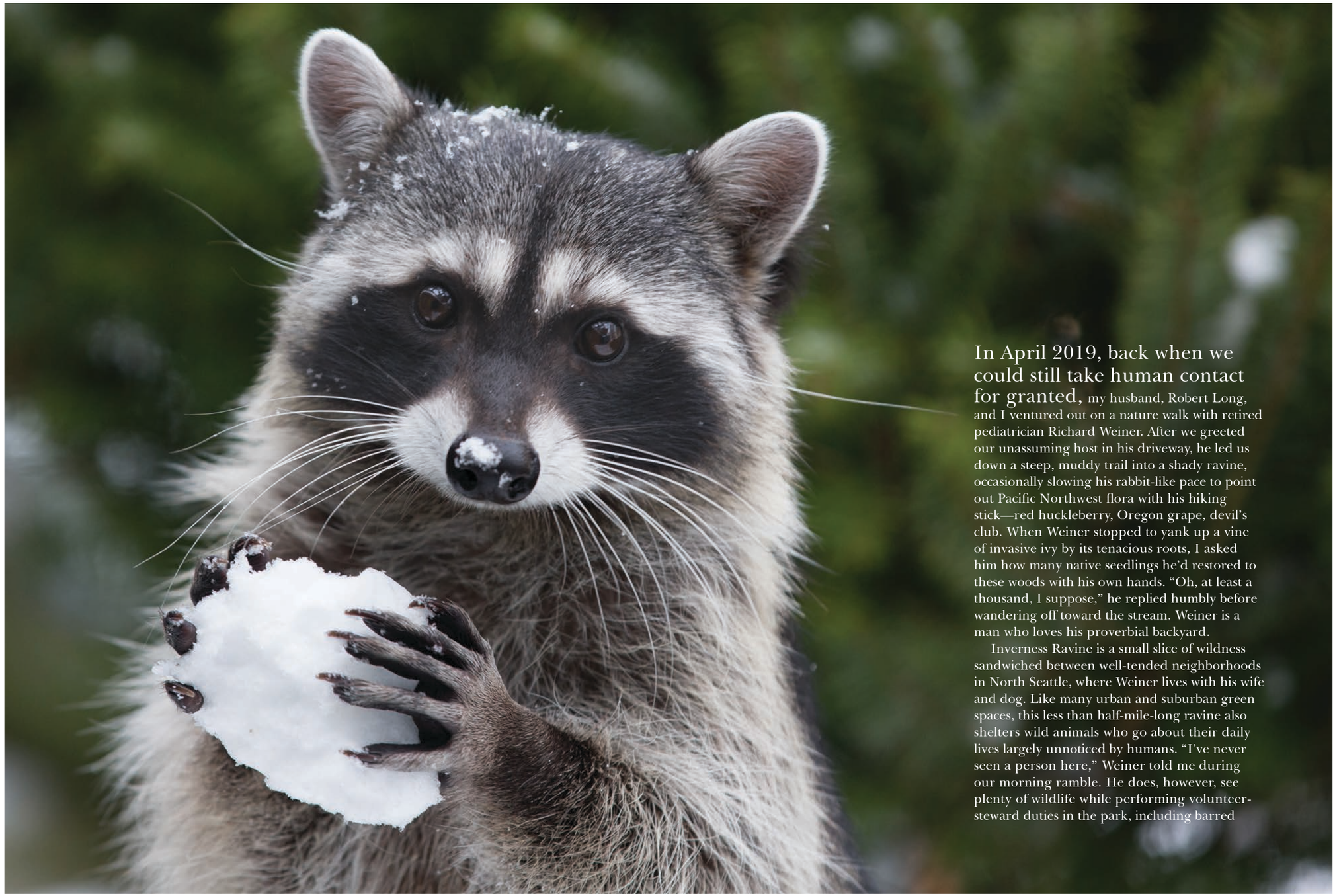
VOLUME 9

WILD HOPE

FIELD NOTES AND IMAGES FROM NATURE'S FRONT LINES





JEREMY DWYER-LINDGREN/WOODLAND PARK ZOO

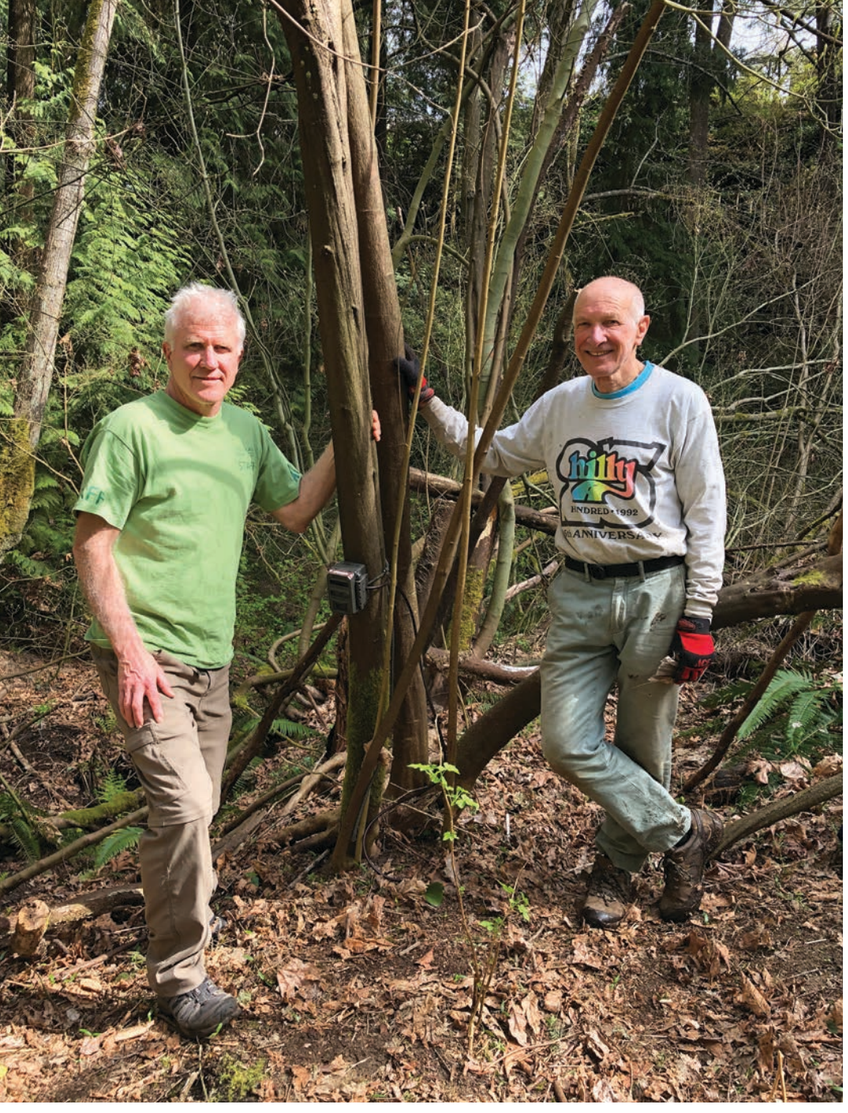
Seattleites are learning about the wildlife living in their midst through a community-based program created by Woodland Park Zoo and Seattle University.

BY PAULA MACKAY

Urban Dwellers

In April 2019, back when we could still take human contact for granted, my husband, Robert Long, and I ventured out on a nature walk with retired pediatrician Richard Weiner. After we greeted our unassuming host in his driveway, he led us down a steep, muddy trail into a shady ravine, occasionally slowing his rabbit-like pace to point out Pacific Northwest flora with his hiking stick—red huckleberry, Oregon grape, devil's club. When Weiner stopped to yank up a vine of invasive ivy by its tenacious roots, I asked him how many native seedlings he'd restored to these woods with his own hands. "Oh, at least a thousand, I suppose," he replied humbly before wandering off toward the stream. Weiner is a man who loves his proverbial backyard.

Inverness Ravine is a small slice of wildness sandwiched between well-tended neighborhoods in North Seattle, where Weiner lives with his wife and dog. Like many urban and suburban green spaces, this less than half-mile-long ravine also shelters wild animals who go about their daily lives largely unnoticed by humans. "I've never seen a person here," Weiner told me during our morning ramble. He does, however, see plenty of wildlife while performing volunteer-steward duties in the park, including barred



owls, raccoons and coyotes—the latter seeming to hold a special place in his heart. Weiner described how one young coyote watched him pull weeds with playful curiosity, dragging burlap sacks around like a mischievous puppy. Ultimately, his intimate observations inspired him to become involved with the Seattle Urban Carnivore Project (SUCP), a citizen science-based collaboration between Seattle University (SU) and Woodland Park Zoo, where Robert serves as a senior conservation scientist.

For two decades, Robert has championed motion-triggered cameras (camera traps), scat collection and other noninvasive methods to survey carnivores in the wilderness, from the Green Mountains of Vermont to the craggy North Cascades. But in his role with the zoo's Living Northwest Program, which he now directs, he wanted to bring some of his research closer to home. Robert envisioned a community-oriented project that would encourage Seattleites to engage with local wildlife, gather data, and become better acquainted with their natural surroundings. Beyond its scientific value, he thought, the project would promote hope at a time when conservation can be overwhelming or even dispiriting. "I wanted people to see that at least some wildlife is thriving, right outside their front door."

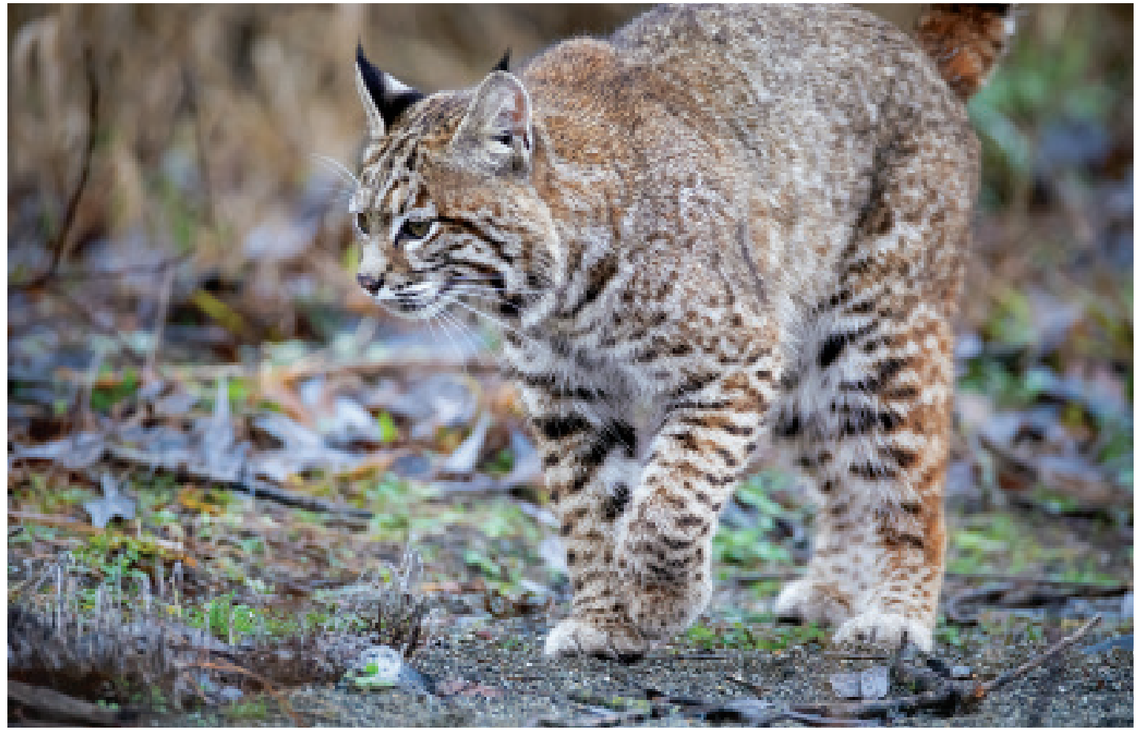
In 2017, Robert began to brainstorm with SU's Mark Jordan, an associate professor of biology who held a similar vision. Jordan had just wrapped up a multi-year study in South Seattle, where he and his students had deployed dozens of camera traps to examine carnivore behavior in the city. "Part of what interests me is how species like raccoons and coyotes are responding to a very different environment from the one in which they evolved," says Jordan, who wonders if foraging strategies and species interactions change when mid-sized carnivores get packed together in urban settings. An analysis led by a former student, Destiny Mims, for example, shows that raccoons—normally active at night—foraged more during twilight hours than the researchers would have anticipated. Jordan speculates that cities are an especially resource-rich milieu for raccoons, given their flexible diet; if the restaurant is open 24/7, raccoons are going to take full advantage of the menu. Virginia opossums, on the other hand, remained characteristically nocturnal.

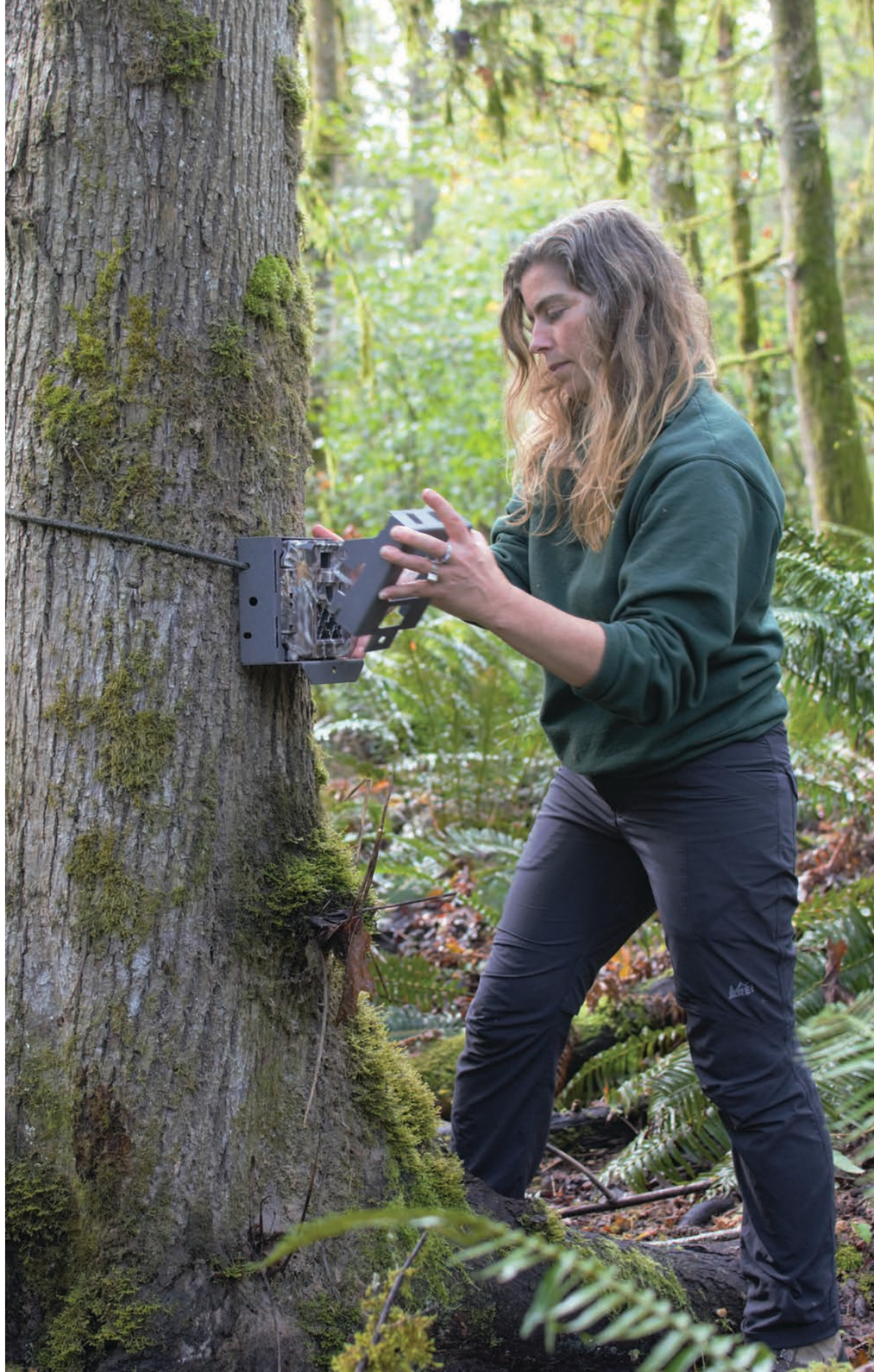
SUCP was officially launched in early 2019, with two science-driven goals. "First, we need to better understand what types of urban landscape features best support coexistence with wildlife by looking at factors like trail density and habitat connections among green spaces," Robert explains, adding that camera traps are an ideal tool for collecting such information because they're relatively easy for volunteers to deploy and maintain. "Then, we need to apply this knowledge to urban design and conservation policy."

Page 36: Raccoons have adapted to life in Seattle and other cities. Lucy is an ambassador animal at Woodland Park Zoo. Left: Woodland Park Zoo's Robert Long (left) visits a camera trap with volunteer Richard Weiner (right). Right: A coyote and a black bear caught on camera in Greater Seattle.

PAULA MACKAY

WOODLAND PARK ZOO (2)





Left: Though seldom seen by people, bobcats quietly wander the outskirts of Seattle. Right: Woodland Park Zoo's Katie Remine deploys a camera trap for the Seattle Urban Carnivore Project.

JEFFREY VANDERVEER

KODI JO JASPERS/WOODLAND PARK ZOO

To help extend the project's reach across greater Seattle, Robert and Jordan brought in Katie Remine, who specializes in community engagement at the zoo. Remine had previously launched a successful program called "Coexisting with Carnivores" in Issaquah, Washington, a scenic suburb in the foothills of the Cascades, where black bears and cougars share territories with condominiums and other development. Through its partnership with the city and middle schools, the program promotes scientific, collaborative problem-solving to reduce human-wildlife conflict, sparking new ambassadors for conservation in the process. For Remine, making science a public pursuit is an important facet of SUCP, which is now expanding Coexisting with Carnivores to other parts of Seattle.

"All people can be a part of science and conservation, and not feel excluded," Remine says, citing the fine line between fear and fascination in carnivore conservation. "I think engaging in carnivore research—especially this kind of research, getting remote camera photos and seeing patterns of behavior in these animals—helps people develop empathy for and understanding of their lives." Maintaining camera sites also creates comradery and a deeper sense of place among project volunteers, observes Remine, who for years has volunteered for camera-trap studies herself.

The camera-trapping component of SUCP currently consists of 45 survey sites spanning urban and suburban neighborhoods. All cameras are situated in green spaces, ranging from backyards to public parks, and each camera trap is assigned to a volunteer team. The project is committed to achieving diversity and inclusion in its volunteer pool—an aspiration its leaders want to prioritize now that cameras are up and running. "We'd really like to engage more communities that aren't traditionally part of the wildlife conservation conversation," says Jordan, noting that initial respondents to their call for volunteers tended to be white, well-off and retired. "I think there's a real opportunity for connecting to underrepresented communities with urban wildlife research that you don't necessarily have with other types of research."

Arctic biologists Kristin Laidre and Eric Regehr were drawn to the idea of learning about wildlife in the city for a change of pace. During non-pandemic times, their field research with the University of Washington's Polar Science Center takes them to vast stretches of sea ice, where they study polar bears and other marine life. But at home in Phinney Ridge, only blocks from the zoo, Laidre and Regehr encountered smaller carnivores who piqued their curiosity. In particular, Laidre was intrigued by the coyotes she occasionally saw wandering the streets during her daily walks with their dogs. "I started thinking about where they are denning in this neighborhood and how they make a living," says Laidre,

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who strives to be a keen observer of nature wherever she goes. She and her husband decided to maintain two cameras for SUCP.

"We get a lot of squirrels and crows, and people playing fetch with their dogs or eating pie and making out in front of the camera," quips Laidre. "But we've also gotten a couple of coyotes on the pea patch camera, and a lot of raccoons." Laidre says she enjoys trying to actively understand the behaviors of these animals via science versus listening to rumors or reading community listserves, which aren't always accurate. And now she and Regehr can act as local resources—by reminding neighbors to refrain from feeding raccoons and other carnivores, for instance. "Any way to help people get more educated about the wildlife around them, and to ground their choices in scientific knowledge, is good," Laidre concludes. Wise words from a woman who hangs out with polar bears for a living.

SUCP volunteers operate their cameras for a minimum of one month per season to align with a data-sharing collaboration initiated by Chicago's Lincoln Park Zoo. At present, 24 cities participate in the Urban Wildlife Information Network (UWIN), including Seattle. "The whole idea behind setting up this networked system of field sites was to study urban wildlife writ large," says UWIN's executive director, Seth Magle, who became concerned as a graduate student that wildlife studies from different cities showed different urban ecologies (e.g., coyotes in City A eat dissimilar foods to coyotes in City B). "The only way to get past that, as I saw it, was to create a network of people who were using the same protocols, who could say, 'these data are comparable, and if we're seeing different things, it's because the animals in our cities really are different from each other.'"

Meanwhile, under COVID-19 restrictions, cities in the United States and around the world are experiencing profoundly altered patterns of human activity and movement, which could, in turn, have ramifications for urban carnivores. According to Magle, some residents of Chicago claim that they're seeing more coyotes, and anecdotally, Jordan reports, carnivores in Seattle might appear to be changing patterns as well—although both researchers emphasize that it's too soon to know if this is a real phenomenon or if people are simply noticing more wildlife while they're working from home. "I suspect it's a little of both, but I think it may be more attributable to people being in different places rather than the animals," says Jordan. Researchers with SUCP and UWIN plan to probe this question with camera-

Left: Seattle University's Mark Jordan checks a camera trap with his son. Right: River otters like this one at Woodland Park Zoo are often spotted in the wild around Seattle.

MAT HAYWARD/WOODLAND PARK ZOO

trap data collected before, during and after the pandemic's stay-at-home orders. As with everything related to COVID-19, we're in the midst of a global experiment.

Prior to the pandemic, SUCP introduced the third component of its research and outreach efforts: an online portal where the public can report carnivore sightings in the greater Seattle area. The project developed "Carnivore Spotter" based on an earlier website at Woodland Park Zoo that tracked river otter observations, broadening the new site to also include black bears, bobcats, cougars, coyotes, raccoons and opossums (who are actually marsupials, not carnivores, taxonomically speaking). In addition to entering their own observations, visitors can view data points logged by others on a colorful map of Seattle, which depicts more than 4,250 reports to date. "When I see how many dots are on the map, I'm blown away by how much interest there is in using and contributing to this site," says Jordan. "It illustrates to me that everybody is a bit of a natural historian inside."

For those enthusiasts seeking to further satisfy their inner researcher, SUCP has partnered with Zooniverse, a crowdsourcing platform that invites volunteers to enter and peruse camera-trap data. SUCP/Zooniverse participants are asked to identify animals captured in Seattle-sourced photos and to code the images accordingly, thereby enhancing the efficiency of follow-up analyses conducted by experts. These data become part of a Smithsonian-hosted repository for camera-trap images, which ensures that wildlife information is made widely available to the public. Community science comes full circle.

Of course, the best way to engage with urban wildlife is to watch, listen and wait.

Back at Inverness Ravine, Weiner guided us to his SUCP camera site. This same camera would soon come to photograph exuberant coyote pups exploring the forest, their wild canid faces a blend of the familiar and the sublime. But in the moment, I couldn't help but be dismayed by the pervasive signs of humanity—a red inflatable ball floating in the stream, houses flanking the ravine, barking dogs in the background, distant traffic noise.

"I feel a little sad seeing coyotes in such a confined space," Weiner said, perhaps picking up on my mixed emotions. "I feel a bit better about the owls," he continued, recounting how he sometimes watches chicks from the comfort of his deck. As if on cue, a barred owl flew past us like a feathered apparition, followed by the call of a second, maybe his or her mate. Even in the city, the pulse of wildlife beats on.

An hour later, while we were exchanging goodbyes on the sidewalk, I commented to Weiner on the neighborhood's sweeping view of Lake Washington and the distant Cascades, both clearly visible from where we stood. Yes, agreed Weiner, nodding politely. Although his eyes scanned the horizon, I could see that his mind went somewhere else. "But I prefer the view of the ravine." **WH**

Visit zoo.org/seattlecarnivores and carnivorespotter.org to get involved in the Seattle Urban Carnivore Project or become a Carnivore Spotter. Find out more about the Urban Wildlife Information Network at urbanwildlifeinfo.org.