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Every critter counts, and so do plants, at BioBlitz

Scientist-led teams of volunteers identify 1,500 species in a sweep of the Santa Monica Mountains.

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Near midnight in Topanga State Park, seven hikers, head lamps strapped to their foreheads, scrambled down an oak-clad hillside. Dry leaves crackled under hiking boots. Branches thwacked faces.

"Here's a closed trap!"

Six beams of light bobbed through the trees toward Debra Shier and the long, skinny metal box she held in her hands Friday night.

Shier slipped one end of the box into a plastic bag and released the trapdoor. She gave it a shake. Out popped a small gray woodrat -- a male juvenile dusky-footed woodrat, to be precise -- with big, startled eyes.

"Hi, honey," Shier said, stroking him through the plastic.

Welcome to BioBlitz.

Shier was one of 120 scientists who led teams of volunteers into the Santa Monica Mountains National Recreation Area for a 24-hour species count that began Friday at noon. More than 3,000 citizen-scientists, half of them schoolchildren, combed state and federal park lands from Malibu to Griffith Park.

The counting marathon was the second of 10 annual surveys planned by the National Geographic Society and the National Park Service in the run-up to the park service's 100th anniversary in 2016. The first was held last year in Rock Creek Park in Washington, D.C. Next year, the survey is scheduled for Indiana Dunes National Lakeshore outside Chicago.

"I wanted to awaken urban communities to the beauty of nature in their own backyard," said a sunburned John M. Francis, a biologist and vice president of research, conservation and exploration for the National Geographic Society.

As the countdown neared its end at noon Saturday, Francis was frantically tallying species. Earlier that morning he had been at Malibu Lagoon, where 90 students from Vine Street Elementary School in Hollywood were catching fish and banding birds. Half the students, he said, had never seen the ocean before.

The BioBlitz, as the event is known, has been around for about a decade. More than just a species count, it aims to connect scientists who might not typically work together and to give non-scientists a firsthand look at what biodiversity -- the wealth of different life forms that exist on the planet -- is all about.

The goal is also to have fun. And it doesn't get any more fun than trapping mice at midnight. After weighing the wood- rat -- 112 grams, or about the same as a stick of butter -- Shier let him go, a process she repeated every two hours.

A postdoctoral fellow with the Zoological Society of San Diego, Shier, 38, knows that rodents aren't exactly star material. They are not, in other words, "charismatic megafauna," the term wildlife biologists use for giant pandas, California condors and other poster critters for conservation.

That doesn't make her any less devoted to the kangaroo rat and pocket mouse that are the main focus of her research and animals she says she likes to think of as "charismatic minifauna."

She extolled their virtues to her volunteers. Small mammals disperse seeds stuck to their fur or carried in their droppings. They help aerate the soil, allowing rain water to percolate through. Their tunnels provide underground houses for other animals. Larger species, such as owls and coyotes, dine on them.

"They're considered a keystone species, even though they're tiny and people don't know much about them," she said.

Rebecca Rogers, a 4-foot, 11-inch Boston transplant who has called Los Angeles home for 11 years, was the only one of Shier's volunteers intrepid enough to actually get on her hands and knees to check the traps set out under the thick chaparral. For long minutes, little was heard except snapping twigs and good-natured curses.

All 12 traps came up empty.

Typically, small-mammal biologists don't start seeing animals in their traps until the third or fourth night, after the critters have gotten used to the new airstream in the neighborhood. Still, in two rounds of checking 200 traps, Shier's team found three species: the woodrat, the deer mouse and the California mouse.

By mid-afternoon Saturday, the various teams had counted more than 1,500 species altogether, a number that was expected to grow as biologists continued to analyze some of the harder-to-identify finds.

The count included 500 species of plants, 91 species of marine invertebrates, 22 algae, six kinds of fish, 86 species of birds and 15 kinds of reptiles, including a rattlesnake that sashayed into the Paramount Ranch base camp and drew a gaggle of herpetologists.

"Somebody must have told him about the event," said Ray Sauvajot, chief of planning, science and resource management for the Santa Monica Mountains unit of the National Park Service.