



Lynette Lobban

Each year OU  
scientists,  
students  
and volunteers  
have a field day  
taking stock of  
the natural  
wonders  
found within  
Oklahoma's  
borders.

BIOBLITZ



BY LYNETTE LOBBAN

The Oklahoma Biological Survey (OBS) Web site calls BioBlitz a “rapid inventory of biological diversity in a designated area of public land.” Academically accurate as this statement is, an easier explanation might be “a scavenger hunt for critters.”

For 24 hours each fall, teams of OU professors, scientists, students and volunteers canvass the rugged terrain of a selected state park, tallying each flora and fauna, from curlycup gumweed to white-tailed deer. “If it breathes, it’s eligible,” says Ian Butler, biological data coordinator for OBS.

The mission of OBS, which is both a state office and a research unit operated through the University of Oklahoma College of Arts and Sciences, is to gather, analyze and disseminate information regarding animal and plant life in Oklahoma. Each year since 2000, the office has hosted the BioBlitz as a way to focus attention on Oklahoma’s rich biological diversity and add a few lessons of ecological responsibility into the mix.

“Too many Oklahomans think that biodiversity is something they see on TV,” says Caryn Vaughn, OBS director and OU Presidential Professor of zoology, “but if they see it around them, as part of their world, maybe they will appreciate it and take care of it.”

BioBlitz sites have included Mohawk Park in Tulsa, Dripping Springs in Okmulgee and Boiling Springs in Woodward. The most recent Blitz was held at Quartz Mountain State Park in September. Team leaders, most of whom are OU zoology faculty, usually arrive on Thursday to set up a base camp and prepare for public school visitors on Friday morning. As many as 25 organizations participate, including the Oklahoma City Zoo, the Oklahoma Department of Wildlife Conservation and the Oklahoma State Tourism Department.

On Friday morning, teams set up samples of their research under a large open-air canopy. School children rotate through 10 educational stations featuring live reptiles, fish, mammals, birds and insects while talking to researchers about their work. BioBlitz coordinator Doug Fox says they make it a point to invite whatever school districts are in the area. “About 200 or more kids come every year. We even bring butterfly nets for them to use. It’s a completely hands-on approach to learning the basics of what scientists do in the field.”

The really “cool” thing, added Fox, is that about 75 percent of the students who come with their classes on Friday bring their parents back on Saturday. “We trip their trigger with scientific research,” he muses.

*continued*



Photo provided



Photo provided

OPPOSITE PAGE: A Cub Scout from Wichita Falls, Texas, gets up close and personal with nature during BioBlitz 2006. TOP: A volunteer feeds a baby raccoon from one of the wild life displays set up for public school students. BOTTOM: Zoology graduate research assistant Josh Cooper gathers diatoms, a form of microscopic algae living on the surface of submerged rocks in Lake Altus-Lugert.



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ABOVE: OU zoology professor Richard Broughton holds a tiny mosquito fish, one of 27 different species of fish counted and released during the annual BioBlitz. AT RIGHT: Paulette Reneau, a graduate student in zoology, gathers data on fish habitats from Lake Altus-Lugert. BOTTOM: OU zoology professor Elizabeth Bergey, left, directs her aquatic insect team in a field lab set up in a park pavilion.



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After the public school students pile back on their buses, team leaders turn their attention to strategies on how best to search two to four thousand acres of wilderness for creatures great and small. High school and college students are welcome on the teams, and leaders work to link volunteers with their interests. At 3 p.m. Friday, they are off and running. Or not.

“It’s not like the Land Run where we fire a shot, and everybody takes off,” says Butler. “Each team has its own rhythm. The plant people go out early and start marking off quadrants; the mammal people go out about dusk to set their live traps; and the birders get up before dawn. They all come and go until Saturday at 3 p.m. when we take the final counts.”

OU zoology professor Jeffrey Kelly, who heads the bird team, says BioBlitz gives him the chance to examine habitats of birds specific to a given area. “We get the regulars—the cardinals and chickadees. Then you get species like the rufus crowned sparrow or the ladder backed woodpecker that are specific to the area,” says Kelly. “Our teams identify species by song, by call and by sight. The birders are out by six, walking any trails that look birdy.”

As many taxonomic groups as possible are represented in the final tally although Butler admits “the rugged granite hills can



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CLOCKWISE FROM TOP LEFT: No creature is too small to escape dedicated BioBlitzers. Zoology graduate student Melissa Bebak uses a filtering device to gather microbes from Lake Altus-Lugert. Sisters Miracle Grace and Hope Harris of Duncan go eye to eye with a park resident. Ian Butler, biological data coordinator for Oklahoma Biological Survey, keeps a running total of species at base camp while a volunteer looks for lichens on the side of a rock.



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make it a bit iffy for fish.” This year, Lake Altus-Lugert provided a decent yield for OU zoology professor Richard Broughton, who headed the fish team. Broughton netted 27 different species from tiny silver sides to shad and blue gills. Paulette Reneau, a zoology graduate student who works for Broughton, says there is more to BioBlitz than the count.

“When you are in a particular area of study, like fish genetics, you tend to focus on that one organism. BioBlitz gives us a chance to see what others in zoology and botany are doing. And,” adds Reneau, “it’s a great way to visit the state parks.”

A new category, microbes, was added this year in the spirit of intercollegiate competition and perhaps as homage to Ellen Censky, director of OU’s Sam Noble Oklahoma Museum of Natural History, whom Fox calls the “Queen Mother of BioBlitzes.”

While director of the Connecticut State Museum of Natural History at the University of Connecticut-Storrs in 1999, Censky organized one of first BioBlitzes in the nation at a neighborhood park in a run-down section of Hartford. Her aim was to prove biodiversity exists not only in rainforests, but in urban settings as well.

“Connecticut State’s Blitz has a microbe component to it,” says Fox, “and they set the national record somewhere close to 2,600 species in 24 hours. We want to beat that, so we let in microbes this year.”

The task of finding and counting species too small to be seen with the naked eye fell to Bradley Stevenson, who joined the Department of Botany and Microbiology in 2005 as an assistant professor of microbial ecology and environmental microbiology. Stevenson was still in the process of setting up a lab and hiring grad students when the BioBlitzers recruited him for his extensive experience in microbial fieldwork from Antarctica to the Gulf of Mexico.

Even for a seasoned professional, setting up a field laboratory for microbes is not without its challenges. “You have to be prepared for anything,” says Stevenson. “The first time you do something like this, you are bound to forget something.” That something was the red staining solution used to make organisms more visible under the microscope.

“We improvised with cherry Kool-Aid,” he says. “It worked great.”

In the name of science (and to compete with the snakes and baby raccoons at other team stations), Stevenson set up a thermal cycler, a whirring, beeping machine that performs Polymerase Chain Reactions to produce multiple copies of DNA and amplify selected genes.

“Microbes are great, but to be honest, you can’t pet ‘em. That’s one reason I wanted to bring the equipment, to have something to show the kids.” Stevenson says he was pleasantly



surprised by the reaction of his visitors.

“They were absolutely fascinated. They were looking at all kinds of things under the microscopes and watching us do extractions and amplifications of DNA in the thermal cycler. A Cub Scout troop came through, and we told them we wouldn’t have the results for an hour. They actually came back, and we showed them the DNA on the gel, amplified. They got a kick out of it.”

A Friday night barbecue brings all the teams together for informal dialogue and cross-pollination of ideas. Late into the night, scientists putter around each other’s exhibits, posing questions and picking up information in the atmosphere of a biological trade show. Stevenson says it was a great opportunity to share science, “not just with the public, but with each other.”

When the sun rises on Saturday so does the tension in the air. “How many do you have?” is the question of the hour. Traditionally, the plant team, headed by geographer Bruce Hoagland, and the insect teams, directed by zoologists Kenneth Hobson and Elizabeth Bergey, set the pace, but leaders are never content with last year’s totals.

“We use all the tools of the trade,” says Hobson. “Funnel traps, sweet nets. With a sheet and a black light, we can capture hundreds of species. The team collects like mad. We almost always run into something we haven’t seen before.” The different colored soldier beetle or the new mantis fly that resembles a tiny velociraptor can make a scientist’s day.

A few minutes before 3 p.m. Saturday, stragglers gather at base camp, pooling numbers with teammates before leaders announce totals at the closing ceremony.

“There is a spontaneity about the Blitz that is refreshing,” says Butler. “It’s not like this information is collected, written up neatly and coolly delivered. We have guys stepping up to the microphone with handwritten notes they can barely read for the mud and water stains on them. This is straight from the field science.”

Amidst laughter and occasional groans, totals are announced. Once again, insects and plants claim the number one and two spots, with microbes making their debut at third. Overall, the count is 1,192 species identified in 24 hours, up from 1,094 in 2005.

Although the event is great exercise for academics, Butler says the real purpose of BioBlitz is to show that these creatures and plant species are available to anyone wishing to look on any given day in Oklahoma.

“We want to let people know that a place near them is worth checking out,” says Butler. “A fantastic tally is waiting at a park near you.”

*Lynette Lobban is assistant editor of Sooner Magazine.*