

# OKAEE News

## Springing into action

O k l a h o m a   A s s o c i a t i o n   f o r   E n v i r o n m e n t a l   E d u c a t i o n

### OKAEE OUTINGS

Many OKAEE members responded to the survey that was sent out last year and indicated that they would be interested in having specific programs offered throughout the course of the year in addition to the annual Expo. Two of the top choices were programs on astronomy and bats. We are pleased to offer two networking opportunities to our members - an OKAEE Star Party and a trip to learn about the bats at Alabaster Caverns State Park. We hope to see many of you at these events!

### OKAEE STAR PARTY



OKAEE is hosting a members-only stargazing event at the Sam Noble Oklahoma Museum of Natural History at 6:00 pm on Saturday, April 26, 2008. Members of the Oklahoma City Astronomy Club will be giving a presentation on what you can easily see in the Oklahoma sky, and will then head outdoors to give an introduction to using telescopes. The event will go on regardless of the weather, as there will still be plenty to learn even if the hands-on element cannot be done.

Pre-registration is required. Cost is \$10 per person and includes refreshments, lesson plans, and star charts. Register [online](#) with credit card (coming soon!) or mail with check made payable to: OKAEE, P.O. Box 2382, Stillwater, OK 74076-2382. If you have any questions, feel free to contact [Holli Langlieb](#).

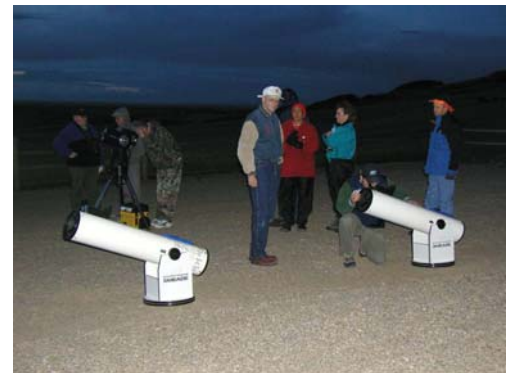


Photo by Elicia Ligon

### OKAEE BAT VIEWING

OKAEE is hosting a members-only bat trip to Alabaster Caverns State park on Saturday, June 28, 2008. This event is set before the general public gets a chance to view the bats. Bat experts will be giving a program that is geared towards educators. OKAEE will provide transportation to and from Alabaster Caverns from up to three locations in Oklahoma (probably OKC, Tulsa, and Stillwater, but will be determined by participant locations). We will depart for Alabaster Caverns around 4:00 pm and will Depart Alabaster Caverns at 10 pm. Bring a pillow to sleep on the ride. Or, if you are already close to Alabaster Caverns or want to make a weekend camping trip, plan to meet us from 7:30-10:00 pm. (Pre-registration is still required).

Pre-registration is required. Cost is \$10 per person and includes classroom materials. Register [online](#) with credit card (coming soon!) or mail with check made payable to: OKAEE, P.O. Box 2382, Stillwater, OK 74076-2382. If you have any questions, feel free to contact [Holli Langlieb](#).



Photo from [www.watchbats.com](http://www.watchbats.com).



# INQUIRY-BASED LEARNING THRU ANIMAL TRACKING

BY KARLA BEATTY

Everybody loves a good mystery. It engages every part of your brain as you try to figure out “what happened here” based on a set of seemingly incomplete clues. However, if you have ever read a Sherlock Holmes story, you know the clues are all there. It is just a matter of learning how to read them and put the pieces together.



Tracking is a process of immersing oneself in the greatest mystery of all -- the mystery of life. A single animal track is a gateway into a world of questions and understandings that can motivate a student to direct their own learning about their surroundings. Historically, humans learned to track wildlife in order to feed themselves. The art of tracking today allows scientists to identify habitats in which animals live and to conduct population surveys. Students can use animal tracking to find out what animals live in their area.

Animals have an innately compelling quality to them. When asked why they want to look at animal tracks, many students say, “to learn more about the animals that made them.” Through tracking they initially see just a hint of the animals, and then they have to use all of their critical thinking and researching skills to fill in the rest of the story.

You don’t need access to a million acres of wilderness to find a track. Wildlife exists all around us, even in the most urban environments. Finding a raccoon track next to a puddle in the school playground may get a student to look at his or her neighborhood in an entirely new way.

You can’t tell a raccoon track from an elephant track? That’s fine. Don’t be intimidated - you don’t need to be a master tracker to use tracking in your teaching. The process of discovery that you undertake with your students will be even more inspiring if you don’t have all of the answers. **In inquiry-based learning, the questions are more important than the answers.** All you need are a few tracking guides, a ruler, some notebooks and pencils, and access to resources about different mammals (computers with web access or encyclopedias).



The first thing you need, of course, is a track. To find the track, use the knowledge that your students already possess. Ask them what animals they might expect to find in the area you are about to explore. Where in the area are you most likely to find tracks? If you are in a very urban area, look for puddles or mud alongside roadways or driveways early in the morning. Also take a look near the dumpsters at your school. If you have access to parks or other natural areas, look in the mud along the edges of ponds and along trails. Although different animals may have very diverse food needs, water is a common denominator. This means that a lot of animal activity will be concentrated around water sources.

Once you have found a track or a set of tracks, have the students take out their journals and write down as many questions as they can think of about it. The first time you do this you may need to prompt them at the beginning. They may come up with questions such as:



- What animal made this track?
- When was it here?
- How big was it?
- Why was it in this place?
- Where was it going?
- What does it eat?
- What eats it?
- Where is it now?
- Where does it sleep?
- How might it have been feeling in this place?

Next, use the track guides to try to determine what kind of animal it might have been. Often students will fixate on the first track in the book that has the same general shape as the track they are observing. Students may tell you with conviction that they are looking at a wolf track. As much as we wish we had those animals in Oklahoma, this is the time for you to start asking questions: “Are you sure?” “Would that animal live in this habitat?” “Have you measured the track on the ground?” “According to the track guide, how big is a wolf’s track?” “Is there anything else it could be?”

Once you have identified the probable maker of the track, you can use any research materials you have at your disposal to answer the rest of the list of questions the students generated. This can take you in almost any direction, and the deeper you go, the more invested the students will be in “their” animal. You may find yourselves exploring concepts such as range, habitat, conservation (what are the threats to this animal), food chains, etc.

Animal tracking is an art form that engages every part of the brain. By using their own questions, students guide themselves through the process of learning about the world around them. By researching one animal in depth, you can't help but learn how they are interconnected with the plants, other animals, and even humans inhabiting the same area. With a personal attachment to this animal and an understanding of its habitat needs, your students are ready to take the next step -- a service project.

To culminate your study of animal tracks, consider a restoration project that will create a new habitat or improve the current habitat for the animal you have studied. In the long run, this will make your job easier . . . there will be many more tracks to work with, and therefore many more mysteries to solve.

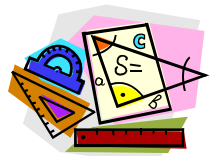
### Tracking Across the Curriculum

**Tracking is an engaging tool that can be used across the curriculum.**



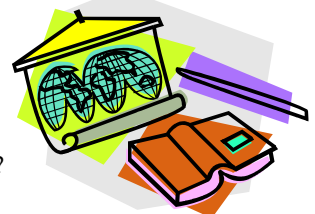
**Language Arts or Creative Writing:** Every track tells a story. Have your students write a story of a typical day in the life of that animal. It could even be in the form of a police report relaying what happened in this spot during the night. They could also take on the perspective of the animal to tell "their" story.

**Math:** This can be a great exercise in pattern recognition. All animals have particular walking and running gaits, which leave distinct patterns. Have your students determine the pattern of the animal you are tracking. It is also a good time to work on accurate measurements, both of the individual tracks and the distance between tracks.



**Science:** This is a great way to learn scientific method. Start with a hypothesis: this track is from a wolf. Collect some data: Average size of a wolf's front foot is 4.25 in. long x 4 in. wide and hind foot is 3.75 in. long x 3.25 in. wide. Wolves disappeared from Oklahoma in the 1930s. All of these tracks are accompanied by human footprints. Assess: Hmmmm....maybe it's not from a wolf. New Hypothesis: "I think it is a domestic dog." And on you go with the process.

**Social Studies:** Tracking can be used to learn mapping skills and how humans have impacted the natural environment. Once students have decided what kind of track they have, they can use range or distribution maps to confirm that the particular animal is found in their area. They can also compare historic and current range maps to see if the animal's geographic distribution has changed. What could have caused these changes? Were humans involved in any way?



**Music:** What do you suppose the birds sounded like when this animal passed by? What would they have sounded like if it were a deer? What about if it was a bobcat or house cat? Try to use instruments to mimic the sound of the birds, or to express the "feeling" of how a deer moves or how a raccoon moves. Maybe even use drums to help remember the pattern of the tracks you see either on the ground or in books. Many aboriginal drumming rhythms come from the natural world.

## SCENT STATIONS



To set up a simple scent station for collecting animal tracks, you just need sand or ashes, bait, and a few days. Ashes will show tracks better, but sand will be better if rain is in the forecast. Simply spread a layer of the sand or ashes in a circle (approx. 1 m in diameter), place bait in the center, and monitor. For carnivores, good bait is liquid from sardines or tuna, for many herbivores a good bait is nuts or raisins. You can monitor as often as you want.



Photos by Elicia Ligon

## EDUCATOR OPPORTUNITIES

### On the Road With Oklahoma Ag in the Classroom, 2008

July 22-24



**Who?** Pre-K through 8th grade teachers

**What?** “On the Road with Ag in the Classroom” focuses on the diversity of Oklahoma agriculture.

**Why?** If you are interested in learning more about southwestern Oklahoma agriculture, On the Road is a windshield view and hands-on link with Ag in the Classroom lessons, activities and resources that can be integrated in all subject areas.

**Where?** The 3-day traveling workshop begins in Oklahoma City. We will travel by charter bus to Lawton where we will make our “home base”. We will visit Alfadale Feedlot, Medicine Park, OKC Stockyards, Wichita Mountains Refuge, Van Der Laan Dairy, Windmill Winery, Blue Canyon Wind Farm and more.

**How much?** \$50 participation fee. Lodging, travel, meals and snacks are sponsored by the 59,000 beef producers through the beef checkoff.

For more information, contact  
[Jamey Allen](mailto:jallen@okae.org), 405.522.6768; [Dana Bessinger](mailto:dbessinger@okae.org), 405.522.2105; or [Mary Ann Kelsey](mailto:maryann@okae.org), 405.522.5513  
 Mail or FAX the completed [application](#) to:  
 Oklahoma Ag in the Classroom  
 Oklahoma Dept of Agriculture, Food & Forestry  
 2800 North Lincoln Blvd.  
 Oklahoma City, Oklahoma 73105  
 FAX: 405.522.4855

## 2008 EE EXPO

EE—Not Just Today, but Everyday was the theme for the 2008 EE Expo at NSU- Broken Arrow. It was a great meeting with classes on composting, recycling, outdoor learning spaces, plants in the classroom, using resource trucks and finding EE funding. Dr. Chris Butler of UCO gave the keynote address on birds of Oklahoma, and Teresa Randall led a visioning activity to see where members envisioned OKAEE heading in the next few years. Over 100 individuals attended the expo, and had a chance to network with organizations from across the state. For more photos, visit [www.okaee.org](http://www.okaee.org).



Photos from the 2008 EE Expo at NSU—Broken Arrow Left to Right: Visiting the exhibitor booths, participating in the composting class, winner of the OGE drawing for the electric lawnmower. Photos by Melissa Willis.

## CALENDAR OF EVENTS

### April

- 11: Family Night Out: Nature Game Night at the [Sam Noble Oklahoma Museum of Natural History](#). Enjoy a fun night out with the family at the museum. Don't worry about dinner and entertainment- it's all here! We'll introduce a topic, enjoy a kid-friendly dinner, and complete a project to take home. Space is limited, and pre-registration is required. Cost: \$10 per person members, \$12 per person nonmembers (ages 4 and under are free). (Cost includes dinner and take-home project ) 6:00-8:30 pm.
- 26: Adult Program: Animal Tracks: Identification and Collecting at the [Sam Noble Oklahoma Museum of Natural History](#). Did you ever wonder what was walking through your garden late last night? If so, join museum staff curator, Dr. Nick Czaplewski, as he demonstrates how to identify and collect native Oklahoma animal tracks. Your day will begin in the classroom with an introduction to animal track identification; then it's off to a local area to find, identify, and prepare a plaster cast of a track to take home. Space is limited and pre-registration is required. Cost: Members \$20.00, Nonmembers: \$30.00. 9:00 am-1:00 pm.

### May

- 2 or 3: Stars Over the Wichitas Tour at the [Wichita Mountains Wildlife Refuge](#) will be conducting "Stars Over The Wichitas" and the public is invited to participate in an evening with the stars. Participants will search and locate major constellations and other heavenly bodies with assistance from an amateur astronomer. Bring your own optics, or view the night skies through a 13" Dobsonian telescope. The two hour program begins 30 minutes after sunset. Participants should meet at the Boulder/Lost Lake picnic area entrance gate. For reservations call which are required and may be made by telephoning the Visitor Center at (580) 429-3222. A \$5.00 reservation fee per participant is collected prior to the program.

- 3: Spring Bird Count, [Byron Hatchery Watchable Wildlife Area](#), Cherokee, OK. Starts at 5:30 am! Bring sack lunch. For more information: 405-424-0099.

- 10, 17 or 24: Wildflower Walk at [Wichita Mountains Wildlife Refuge](#). A casual walk will be enjoyed at two or three stops in order to identify wildflowers located in a variety of habitats. Each tour will last approximately two and one half hours. Due to the length of the program, children must be at least eight years of age to participate. A \$5.00 reservation fee per participant will be collected at the beginning of the tour. Reservations will be retained until ten minutes prior to the beginning of the tour. After that time, standbys will be accepted. If the bus seating is filled after accepting standbys, late arrivals with reservations will not be able to participate in the program. The bus will depart promptly at 10:00 a.m. Reservations are accepted on a first come, first served basis and may be made by telephoning the Visitor Center on the following line only: (580) 429-3222.



Photo by Elicia Ligon

### June

- 2, 5, 9 or 12: Master Naturalist Workshops – Norman. Learn about basic ecology, forest ecosystems of Oklahoma, aquatic and wetland ecosystems and prairie ecosystems. Volunteers completing the training are eligible to participant in a variety of additional trainings, field trips and service projects. For details go to [www.okmasternaturalist.org](http://www.okmasternaturalist.org) and click on "join us" or contact [info@okmasternaturalist.org](mailto:info@okmasternaturalist.org).

- 4, 6, 9 or 12: Master Naturalist Workshops – Tulsa. Learn about basic ecology, forest ecosystems of Oklahoma, aquatic and wetland ecosystems and prairie ecosystems. Volunteers completing the training are eligible to participant in a variety of additional trainings, field trips and service projects. For details go to [www.neokmasternaturalist.org](http://www.neokmasternaturalist.org) and click on "join" or call 918 342-1569.

- 5, 16, 21, 22, 28 or 29 : Wildlife Tour at the [Wichita Mountains National Wildlife Refuge](#). The public will have an opportunity to view wildlife on a bus tour of Pinchot Loop in the Special Use Area. A unique feature of this season is the young buffalo and longhorn calves. Reservations for the programs are accepted on a first-come, first-served basis by telephoning the Visitor Center weekdays between 8:00 a.m. and 5:30 p.m.. All tours will last approximately three hours. Due to the length of the program, children must be at least eight (8) years of age to participate. For reservations call which are required and may be made by telephoning the Visitor Center at (580) 429-3222. A \$5.00 reservation fee per participant is collected prior to the program.

- 28: Butterfly Count, Byron Hatchery Watchable Wildlife Area, Cherokee, OK. 9:30 am to 4 pm. Bring sack lunch. For more information: 405-424-0099.



Oklahoma Forestry services has launched its new website at [www.forestry.ok.gov/](http://www.forestry.ok.gov/)

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# HELP MAKE EE PART OF THE CURRICULUM IN OUR SCHOOLS

BY VANESSA BULLWINKLE



The federal No Child Left Behind Act (NCLB) is up for reauthorization. Whatever you may think about this extremely controversial law, I hope you'll agree it's critical that environmental education be included in what is, by far, the most significant piece of education legislation this Congress will consider.

NCLB is the name given to the federal Elementary and Secondary Education Act (first enacted in 1965) when it was reauthorized in 2001. NCLB dictates how schools will be held accountable for students' learning and is perhaps best known for the testing it mandates. As teachers are well aware, devoting so much time to prepare students for the high-stakes tests in math and reading has greatly reduced time spent learning about the environment, especially in the outdoors. However, learning through environmental education is not incompatible with math and reading instruction. In fact, some studies have shown that students who learn science, math, reading, social studies, and other subjects using environment-based curricula such as Project Learning Tree (PLT) are more engaged in and excited about their learning. In some cases, students' test scores improved dramatically. If you haven't already, you might want to read the April 2007 [Science & Children magazine article](#) published by the National Science Teachers' Association.

Many people feel that fixing NCLB's high-stakes testing and teacher certification requirements would be a good thing. Others would argue that these provisions should be eliminated. No matter the merits of NCLB, it is the major legislative vehicle for a wide array of education funding, and some version of the law must be passed to guarantee that federal education funding continues.

Project Learning Tree believes that if NCLB remains the driving force for the content of K-12 curricula, teachers and school systems should be given greater authority, flexibility, and incentive to incorporate environmental education into core subjects, and help reconnect children with nature by taking them outdoors to learn.

Senator Jack Reed of Rhode Island and Congressman John Sarbanes of Maryland agree and have introduced legislation, the No Child Left Inside Act of 2007, to include environmental education in the final version of NCLB. Their legislation, which would amend the NCLB Act, would:

- Provide federal funding to states to train teachers in environmental education and to operate model environmental education programs, which include outdoor learning.
- Provide funding to states that create environmental literacy plans to ensure that high school graduates are environmentally literate.
- Provide funding through an environmental education grant program to build state and national capacity.

The No Child Left Inside bill concentrates on funding and incentives for states to improve environmental education – **and does not add any new mandates or testing requirements**. To learn more about the No Child Left Inside Act, visit [www.eeNCLB.org](http://www.eeNCLB.org). Support for the No Child Left Inside Act is strong -- and growing. PLT has been working with a No Child Left Inside<sup>SM</sup> Coalition of (currently) 110 organizations, representing 15 million people, to urge other members of Congress to support this legislation. To date, 20 members of Congress (2 Republicans and 18 Democrats) have signed on as co-sponsors to the bipartisan No Child Left Inside Act in the House (H.R.3036), but we need to keep up the pressure for more support and seek sponsors for the bill in the Senate (S.1981).

**The time for action is now!** Currently the NCLB reauthorization bills are being written in the education committees of the House and Senate. These committees are expected to begin marking up the bills in the next few weeks, which is a key part of the process. Grassroots efforts are vital to making sure environmental education is included in NCLB. You have the opportunity NOW to influence this far-reaching education legislation that impacts schools nationwide! All members of Congress, especially the members of the House Committee on Education and Labor and the Senate Committee on Health, Education, Labor, and Pensions, need to know their constituents value environmental education and expect to see it included in the NCLB bill.

The best way to communicate this is to ask your senators and representative in Congress to co-sponsor and support the No Child Left Inside Act which contains the environmental education language we hope to see in NCLB. For information on contacting your federal legislators, please go to [www.eeNCLB.org](http://www.eeNCLB.org). For other ways in which you can help, read our [Action Alert](#).

If the language of the No Child Left Inside Act is included in the reauthorized No Child Left Behind law, teachers will have increased flexibility to use environmental education methods to teach their students the basic subjects while exciting them about the real-world environment. Teachers who are not already comfortable with environmental education methods will receive training in using environmental education techniques such as teaching across disciplines and using the outdoors as a classroom.

Please act now to make environmental education part of the curriculum in our schools. For more information go to [www.eeNCLB.org](http://www.eeNCLB.org) or contact me at [vbullwinkle@plt.org](mailto:vbullwinkle@plt.org).

**Vanessa Bullwinkle is Director of Operations and Marketing for the national office of Project Learning Tree located in Washington, DC.**

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**Oklahoma Association for Environmental Education**

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