



The Bear Claw



The Sandia Mountain Natural History Center Newsletter

April 2008

SMNHC Hosting Ecology Research and Monitoring Project

Exciting news! This year, SMNHC is beginning an ecology research and monitoring project. This project complements our fifth grade program by increasing our instructors' understanding of the specific ecosystem where we teach. It provides a great opportunity for us to show students how ecology field research works and discuss how scientists really go about finding out the answers to their questions. We will also be able to serve a broader age range of students. We hope that participation in this long-term study will help students to develop an understanding of ecological processes and to form a deeper connection to the land.

We will be studying two 50x100 ft. sites. One is located in a grassy meadow and the other is in an area of dense piñon-juniper forest. We have started setting small mammal traps, pitfall traps for insects, and taking inventory of plants growing on transects in order to determine what populations we have at different times of the year in these two different areas. The forest site will be thinned to reduce fire danger this summer, so we want to get some good data this spring to compare with next year. Our basic research questions are: What populations of plants, insects, and small mammals do we have at different times of year? What are the differences between our meadow and piñon-juniper ecosystems? and How will the piñon-juniper forest change as it recovers from thinning?

Students of all ages are invited

to participate, either individually (with a parent) or as a class. We already have a few student groups helping us collect data this spring and summer! Rio Grande Roots and Shoots is our first group to begin collecting data on insect populations. They are mostly home-school families with children ranging in age from 3 to 17. Kerri Lathrop's biology classes from East Mountain High School visited this month to collect insect population data as well as plant and insect specimens for our permanent collection. Vince Case's students from School on Wheels will visit next month to inventory plants. SMNHC staff will also be taking data on a regular basis so that we have it to compare with next year as we continue recruiting participants.

There are many interesting questions to explore within the ecosystems on our property. The rich data sets gathered in a monitoring project like this can be put to many uses. We encourage students to develop their own research questions that may be answered by the data we collect. Students involved in the Bosque Ecosystem Monitoring Program may be interested in comparing what they see here to what they observe in the riparian ecosystem. This would make a great science fair project!

If you are interested in more information or would like to participate, give us a call, or email Amy White at amelia87102@yahoo.com. Please pass along this information to anyone you think may be interested in participating!

FUN FACT: A MALE TURKEY HAS "J" SHAPED SCAT BUT THE FEMALE SCAT IS A SPIRAL PILE!

In the Spotlight...



Twenty-two wild turkeys were captured in Chama, New Mexico and reintroduced into the Sandia Mountains in 2002.

On April 21, 2008, this picture of the turkeys was captured by a motion-sensing wildlife camera at SMNHC's Mud Spring. Students from Kerri Lathrop's biology classes at East Mountain High School positioned two of these cameras on our trails as part of their on-site research, hoping to capture pictures of some of our wildlife in action.

While hiking our trails during the winter months, students have seen turkey tracks in the snow and have come across the occasional feather, but this is the first chance we've had to actually catch a glimpse of these reintroduced birds.

NUMBER OF PEOPLE SERVED AT SMNHC:

SINCE JULY 1ST: 12510

THIS MONTH: 3176

Upcoming Events at SMNHC:

June 7, 9:00-3:00

Spend the day in the mountains hiking our trails, visiting two hands on exhibit rooms, and observing birds and animals from our wildlife observation deck. June will offer an hour-long **Geocache/GPS Basics** education session at 10:00 AM. A limited number of GPS units will be available for use. If you have your own GPS, please bring it with you.

July 5, 9:00-3:00

Spend the day in the mountains hiking our trails, visiting two hands on exhibit rooms, and observing birds and animals from our wildlife observation deck. July will offer an hour-long **Plant Identification** education session at 10:00 AM.

August 2, 9:00-3:00

Spend the day in the mountains hiking our trails, visiting two hands on exhibit rooms, and observing birds and animals from our wildlife observation deck. August will offer an hour-long **Orienteering** education session at 10:00 AM.

For more information on our upcoming programs call us at (505) 281-5259 or visit our website:

www.nmnaturalhistory.org/SMNHC

The Sandia Mountain Natural History Center (SMNHC) is a natural history and environmental education facility located on the east side of the Sandia Mountains in Cedar Crest, New Mexico. The SMNHC is owned by Albuquerque Public Schools and operated by the New Mexico Museum of Natural History and Science.

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For more information about the Center, visit our website at: www.nmnaturalhistory.org/SMNHC

Ant Lions in the Spring

Dandelions bloom, days are warmer, and students feel the stir of spring. So, how do you use that to aid teaching, instead of letting it detract? This and several upcoming issues focus on this challenge.

Spring is a great time to talk about bugs! Everybody loves bugs! Well, maybe not everybody, but bugs do catch everyone's attention. Bugs are easy to find, relevant, and part of students' everyday experiences. They're often overlooked and misunderstood. Arthropods (insects and similar creatures) can help you teach art, language arts, social studies, and of course, science. Some good bugs to consider using are: ant lions, praying mantises, butterflies and their caterpillars, tarantula hawk-wasps, spiders, & ants. This issue will focus on ant lions.

The incredible ant lion has evolved to prey specifically on ants and other small creatures! ant lion larvae, or doodlebugs, make neat pits in fine, protected soil. They lie in wait under the pit bottom. When an ant walks into the pit the ant lion grabs it with its pincers, pulls it down, sucks out the juices, and casts the exoskeleton out of the pit! Ant lions also flick dirt up to confuse creatures passing through the pit so they fall to the bottom.

The larva stage lasts a year or two. They hibernate through winter, pupate underground, emerge as winged adults and fly away to mate.

For a challenge, have students try to explain how metamorphosis helps animals. Larvae's main function is survival, while adults' main purpose is reproduction; form fits function.

Teacher resource spotlight...



Bug Resources

- <http://www.antlionfarms.com>: Purchase ant lions, ant lion kits, and find free lesson plans.
- <http://www.antlionpit.com>: Excellent information about ant lions
- New Mexico Bugs**: developed by State Library and SMNHC for "Catch the Reading Bug" summer program. Available at your library. For more information, contact Beth Crist at beth.crist@state.nm.us.

Note: Ant lion pits are often found in undisturbed dirt in schoolyards / backyards. The larvae can be carefully moved inside and are easy to take care of. Provide them with one ant a day and an occasional misting every couple weeks. They are an ideal classroom study animal!

Activity of the Month: Ant Lion Exploration



Overview: Students observe, investigate, and journal about ant lions over time.

Time: Up to four 20-30 minute sessions

Procedure: Find or order ant lion larvae. Antlionfarms.com has class sets of 10 available. Have student groups observe the pits before and after an ant is placed in the pit and record their observations using the Close Observation Data Sheet. Groups then make hypotheses about what's going on / what they'll find underneath the bottom (creature appearance, etc.) / what will happen if they come back in a year. Students can design experiments, test their hypotheses, and write conclusions.

Closure: Groups introduce their ant lion and present their information to the class!

The Close Observation Data Sheet can be found in the Journal Activity of the Ecosystems Explorations Curriculum on our website. Download it free!

Opportunity Board

Sierra Club and Building Bridges to the Outdoors

What: Environmental Youth Leadership Training

Who: Students in college and high school

When: July 6-13

Cost: FREE

Ecology teaching tip:

Ant lion larvae can be viewed carefully without harm. First, dig a spoon gently under the bottom of the pit, making sure to go deep enough. Then carefully sift through the sand to view the creature. Use caution: ant lions are fragile and may bite if threatened!