Nature Notes

Pajarito
Environmental
Education
Center

Your Nature Center in Los Alamos

Volume 8, Number 4 Fall 2009

PEEC, *Mail*: PO Box 547
Los Alamos, NM 87544
505-662-0460
www.PajaritoEEC.org
Location 3540 Orange St.
Open Tu-F, 12-4, Sat., 10-1

President's Message

by Chick Keller

It's the first day of Fall and there are fewer and fewer species of flowering plants out there. Still, the brilliant purples and yellows of our area gladden the eye. Bird migration is in full swing (Wilson's warbler out my back window). Dave Yeamans out on Barranca Mesa sighted 45 species in the last week in his yard! And the Park Flight Bird Banding project is finding a fair variety of species. It's been a good summer for finding plants and for education, and, thankfully, the hail storm that devastated PEEC's gardens didn't do much damage to our greenhouse. We're hoping to use it next spring to grow native plants from seed (call us if you'd like to be part of that). And, perhaps the best news of all, PEEC is still solvent due in large measure to your collective generosity.

Our program director, Branden Willman-Kozimor, is expecting a baby and has cut back at bit. To help with the activities, we have been very lucky to hire Amy Roberts as our new environmental educator. Amy has hit the ground running and we're moving on many fronts. One of these, the Bandelier-PEEC Nature Festival, is something new this year, combining our yearly business meeting (election of officers, etc.) with this festival at Bandelier's Juniper Campground. There will be lots to do for kids and adults alike, so please try to come out for this event.

Back at the Center, with the financial help of Terry and Jim Foxx, PEEC will get its first snake--a hog-nosed one which has some things to teach children. Also, I'm looking for someone to help in the herbarium (see article in this issue). So, as the long summer days shorten and we start to see snow in the high country, it's time to take stock and plan for the future. Enjoy the Nature Notes articles and let us know what's on your mind about our Center. ¤

Bandelier-PEEC Nature Festival Takes Place

October 17
By Rebecca Shankland

In a brand-new collaboration with Bandelier National Monument, PEEC's annual fall PEECnic will be part of a Bandelier-PEEC Nature Festival, held this year at Bandelier's Juniper Campground on Saturday, October 17, from 11 a.m. to 2 p.m.

Events will include several nature, cultural, and craft activities, with food and drink for sale. A nature talk and the PEEC board elections and yearly review will be in the amphitheater. People may bring their own picnics. Admission will be by regular entrance to Bandelier.

The Bandelier-PEEC Nature Festival will be located at Juniper Campground (near the Bandelier Entrance Station) because the Frijoles Canyon Visitor Center is moving into portable buildings for some time during major remodeling.

Watch PEEC This Week, the PEEC Web site (PajaritoEEC.org), and the Monitor newspaper for information on the variety of entertaining and educational activities at the festival. ¤

PEEC Board Elections at the PEECnic

By Peter O'Rourke

At this year's PEECnic (for 2009 enlarged into the Fall Festival, see cover), PEEC members will vote for nominees for two officers and six at-large positions on the PEEC Board. Current Board president Chick Keller and Board secretary Felicia Orth are standing again for their positions. The six nominees for at-large positions are Bob Dryja, Selvi Viswanathan, Jennifer Macke, Mary Carol Williams, Marrion Good, and Nathan Clements. Bob, Selvi, and Jennifer are current Board members. Nathan is nominated for a student position. ¤

PEEC Butterfly Garden

By Dorothy Hoard

The North American Butterfly Association (NABA) has established a certification program to encourage citizens to provide little sanctuaries for butterflies all over the country (actually, all over the world). Like most other wild creatures, butterflies are threatened with fragmented habitats and loss of essential resources. Selvi Viswanathan, our gardener *extraordinaire*, already qualifies and is applying for certification. PEEC wants to modify its nature garden to become a certified Butterfly Habitat so we can collect, demonstrate, and provide information for local gardeners and others in similar habitats.

Butterflies, and other insects that go through a caterpillar phase, need two types of plants: host plants and nectar plants. Butterflies lay their eggs to hatch into caterpillars on host plants. Most caterpillars are limited to a few plants that can nourish and sustain them. Obviously, host plants for our butterflies are local natives that grow readily in surrounding forests. People consider many of these hosts as weeds and frown upon their appearing in gardens.

We are particularly interested in nectar plants. Butterflies can only drink liquids; they have a straw-like mouth that looks like a very long tongue. Not all flowers are properly configured with a nectar sac that butterflies can use and not all good nectar flowers can grow in our high desert climate. Selvi has identified a few good flowers from her garden and hikers have noticed others in the wild, but we need a longer list.

CAN YOU HELP US? Have you noticed flowers in your garden or around the town that attract butterflies? They need not be native wildflowers, but we have found that flowers highly bred to be beautiful usually have little nectar. Old-fashioned butterfly bush is a champion, and our beautiful wild cutleaf coneflower attracts every fritillary around. Selvi recommends domestic *Rudbeckia* coneflowers, Shasta daisies, goldenrods, sedum *Autumn Gold,* and Jupiter's beard. We need more spring and early summer flowers. (Dandelions are good nectar flowers but there are enough around without planting them.)

For more information or to recommend your favorite butterfly flowers, please contact PEEC at center@pajaritoeec.org. ¤

Pikas on the Ski Hill!

By Chick Keller

A pika is a small furry critter that inhabits high altitude rocky areas. They are most often seen near tree-line where there is abundant grass and other plant life for food. Hikers have become familiar with their single note, high-pitched squeaks of alarm and are fond of watching them as they run over the rocks collecting food. Imagine our surprise when we were told someone had seen them on our relatively low-altitude ski hill! We found some in a smallish rock slide area about 50 yards long and 25 wide (see photo). It's a very small colony of perhaps 4-6 individuals. They were very active and not much bothered by our discreet presence.

Photo by Chick Keller

But how did they get there? As in the higher mountains they couldn't wander to lower elevations. Most likely they have lived in the rocky areas of the Jemez Caldera since the cooler times of the last Ice

Age. When it got warmer about 9,000 years ago, they moved up as high as they could go and are now "trapped" in a warmer habitat than they are used to. This might be very important with the advent of global warming. Currently there is concern that even in the high mountains pikas will be vulnerable to the habitat changes higher temperatures will bring. And so this (and other such small colonies around our caldera mountains) may teach us about what their limits are. But if any pikas are threatened by the warming, these are, since they can't retreat to higher altitudes.

The ski hill management has been alerted to their presence and they have said they will take care not to infringe on their territory, but PEEC would like to invite interested people to work with us to observe and record how they are doing. This would make a great student science or Eagle Scout project. So, if you are interested, call us. In the mean time, please respect their territory and keep human disturbance to a minimum. ¤

PEEC Welcomes Environmental Educator Amy Roberts

Photo by
Stephen Shankland

PEEC is delighted to have hired Amy Roberts as its new part-time environmental educator. Amy started working at PEEC in September with Park Flight bird-banding field trips. She will lead Critter Club every Monday from 4 to 5 for kids in grades 1 - 3, offering Boy and Girl Scout badges, teaching LAPS field trips, and starting a PEEC nature club at the middle school since many of our Kinnikinnick Club kids have graduated to middle school. She can organize birthday parties at PEEC, too.

Amy brings her deep love of teaching and dedication to the environment to the position of environmental educator at PEEC. Amy's commitment to environmental education stems from the belief that a child's positive connection to the natural world will ideally result in a sincere appreciation of it and stewardship towards it. Through hands-on activities, explorations, investigations, and discoveries, Amy teaches children the wonders of the world of nature and how best to co-exist within it.

The natural world has always played a significant role in Amy's life. She completed a semester with the National Outdoor Leadership School, served in numerous leadership positions in summer programs, instructed school in Massachusetts and Costa Rica, and spent years exploring the wilderness of the United States while enjoying a career in journalism. Amy holds a B.A. degree from Tufts University.

This past summer, Amy was Program Director for the Santa Fe Tree House Camp. She is currently in her second year of teaching with Audubon New Mexico and is pursuing her Masters of Art degree in Environmental Education from Prescott College. Amy lives with her eight-year-old daughter Alexandra in Santa Fe. ¤

Family Nature Connections: Wonderful Worms

By Michele Altherr

There have been quite a few wet and cloudy mornings of late. On one such morning I was hurrying to work down the sidewalk between the school gym and the basketball court. I suddenly halted mid-stride to stare at an earthworm lying in my path. I looked at it as though I had never seen such an amazing creature before. For the past few weeks, I had been reading about worms in prepar-ation for setting up 18 classroom worm bins at Mountain School. We had received a grant from the Los Alamos Public Schools Foundation to implement hands-on science lessons related to worms.

So, while I had read a lot I hadn't actually seen a live worm in quite awhile. I stood in the September mist transfixed as I reflected back on Amy Stewart's fascinating book, *The Earth Moved: On the Remarkable Achievements of Earthworms.* Where was this

Clker.com,
Charles Darwin Clip Art

worm's burrow and why did it travel across concrete and asphalt so far from the soft earth? Did it hear me or know I was there? How much soil had this one worm turned?

In her book, Amy Stewart weaves the work of today's oligochaetologists, scientists who study worms, with the historic story of Charles Darwin's final publication, *The Formation of Vegetable Mold Through the Action of Worms, with Observations on Their Habits.* It was another of Darwin's "groundbreaking" books. Until Darwin, scientists hadn't taken much interest in life underground and considered earthworms pests. As Darwin "understood that tiny incremental changes in the environment can bring about the evolution of a species," he also understood "that soil could over time, be transformed through the efforts of earthworms" (Stewart, 2004).

Darwin studied a worm called *Lumbricus terrestris,* the nightcrawler, which was most likely the worm that I had found on the sidewalk. It was reddish-brown along its dorsal side and light, almost translucent, underneath. The nightcrawler is classified as a deep soil or anecic worm and can live up to six years. As it tunnels through the soil, it eats decaying material along with a little soil to help with the function of its gizzard. Its vertical burrow, where it stays during dry or cold periods, can be an amazing eight feet deep. At night it emerges in search of food, pulling small leaves and twigs into its burrow. At the entrance to the burrow are small piles of castings, or worm manure, that it leaves behind. It is through the worms' work that these small soft-bodied animals plough through the hardest and poorest dirt and turn it into rich, fertile soil for new life.

Darwin had many questions about earthworms, which he tested with simple experiments. No small detail went unnoticed by Darwin. For example, he wanted to test whether worms made decisions about which end of a leaf to pull into their burrows. So Darwin went outside in the early mornings and carefully pulled leaves out of worm burrows to find out the answer. After checking 227 burrows, he found that 181 of them had leaves pulled in by their apex. Of course he was still curious, and he designed more experiments to test the habits of his worms. Maybe you would like to try one of Darwin's worm experiments.

Darwin wanted to know if worms could hear, so he tested their reaction to quiet and loud noises. He found that his worms didn't behave differently around loud noises. Do you get the same results? As a second experiment, Darwin tested his worms' reactions to vibrations. He set his flowerpots of worms on top of a piano so they could feel the vibrations of the notes. Guess what the worms did when the C note was struck? They disappeared into their burrows. How do you think sensitivity to vibrations would help the earthworm survive?

Darwin took good care of his worms and kept them in flowerpots filled with slightly damp soil. He kept them from freezing and fed them leaves. If you experiment with worms, be sure to take care of them too. Be curious and have fun. ¤

Calliope Hummingbird (Stellula calliope)

"The Calliope Hummingbird is the smallest breeding bird in North America and the smallest long-distance avian migrant in the world! This 3.25" long pollinator travels some 9,000 km round-trip on migration from northwestern U.S. and southwestern Canada to south-central Mexico. This tiny bird is threatened by a small winter range, which renders it vulnerable to a disease outbreak, large landscape changes, and severe weather events. The latin name Stellula means "little star," given to the Calliope for the male's streaked bright red gorget or throat patch over a white background." (Audubon Society web page, audubon2.org) ¤

Photo by Hari Viswanathan

Cooper's Hawks

By Natali Steinberg

PEEC birders who visited the Leonora Curtin Wetlands Preserve in May watched the resident pair of Cooper's Hawks building their nest in an enormous Cottonwood tree.

Photo by Beverly Kune

The four young fledglings pictured above are the results. Docents at the Preserve were overjoyed as they observed the first downy white baby pop its head up. Then each day another one appeared until there were four.

Here they are on a branch near their nest at three weeks and not quite able to hunt for themselves. They are waiting for Mom to bring dinner. By eight weeks they had all fledged. Once on their own, several have been seen sitting on a picnic table near their tree as if reluctant to find a new home.

Watch PEEC This Week for news of another field trip to the Preserve toward the end of October. The Cottonwoods should be at their glorious golden peak, and there is always great birding. ¤

Big Tree Program

By Dorothy Hoard

Everyone loves the biggest and the best, and everyone feels compelled to make lists. Most states and many counties list their largest trees; Los Alamos County obviously needs to be competitive. We are asking for help in finding our biggest trees. Supersleuths Roy Greiner and Chick Keller have scoured our mountainsides. They've found excellent candidate trees. We still have undocumented species and we challenge you woods wanderers to find bigger and better specimens.

Trees are measured at a standard breast height of 4.5 feet. Circumference is the easiest measurement to make and we can easily convert it to diameter. We have in the PEEC shop a pamphlet that shows how to estimate height and a booklet that tells how to identify trees of Los Alamos County.

Los Alamos is a small county but ranges in elevation from 5,400 to 11,000 feet, giving it much more diversity than one would expect in its 42 square miles. Unfortunately, over one-third of that is within the Los Alamos National Laboratory secure area. The county extends from the north rim of Frijoles Canyon on the south to Garcia Canyon on the north; from the saddle above Camp May on the west to an illogical set of straight lines from the northeast corner to White Rock, then down the center of the Rio Grande to Frijoles Canyon on the southeast. Upper Frijoles Canyon from Upper Crossing to the Apache Springs Trail crossing is also in Los Alamos County.

Here is a list of the largest trees we have measured so far. CAN YOU TOP THIS? See the PEEC website for photos.

NAME, CIRCUMFERENCE., HEIGHT, LOCATION, FINDER'S NAME

Abbreviations used below:

C = circumference; *H* = height; *L* = location; *F* = finder's name.

Aspen 65" *C*; unknown *H*; Canon de Valle, *L*; D. Hoard, *F*.

Cottonwood, narrowleaf 76" *C*; 105 *H*; Los Alamos Canyon, *L*; D. Hoard, *F*.

Cottonwood, Rio Grande 123" *C*; 86'*H*; Ashley Pond (planted), *L*; D. Hoard, *F*.

Fir, Douglas 190" *C*; unknown *H*; Cañon de Valle, *L*; R. Greiner, *F*.

Juniper, alligator 52"*C*; 15' *H*; Burnt Mesa, *L*; D. Hoard, *F*.

Juniper, Rocky Mountain 56" *C*; 15' *H*; Upper Crossing rim, *L;* Y. Delamater, *F*.

Pine, ponderosa 154" *C*; 96' *H*; Cañon de Valle, *L*; R. Greiner, *F*.

Pine, southwestern white 170" *C*; 120' *H*; Cañon de Valle, *L*; Y. Delamater, *F*;

Oak, Gambel's 46" *C*; 60' *H;* Los Alamos Canyon, *L*; C. Keller, *F*.

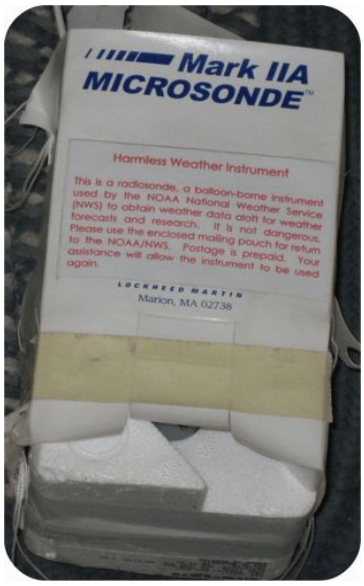
Spruce, Colorado blue 104" *C*; 138' *H*; Cañon de Valle, *L*; Y. Delamater, *F*.

Spruce, Engleman 143" *C*; unknown *H*; Cañada Bonita, *L*; R. Greiner, *F*.

We still need data for a pinyon, one-seed juniper (the common kind), white fir, corkbark fir, and boxelder. We also need a suitable prize for the winners.
In reporting a candidate tree, we need the species and UTMs (we use NAD27 but can convert). We will check it out. For more information or to report a find, please contact PEEC at center@pajaritoeec.org. ¤

Adventures in Geocaching: Finding a Microsonde

By Rebecca Shankland
Jim TenCate and his daughters Lauren and Emily were hunting for a geocache on the long tip of the mesa above the White Rock "Y" when they made a surprise discovery: a disintegrated balloon with a brightly colored streamer. When they followed a string coming out of the balloon up over a couple of juniper trees, they found an instrument package dangling down into the center of another juniper, almost hidden from view. The antenna (just visible sticking out the top left of the box in the photo) was about a foot long with sensors for detecting temperature and humidity. A small battery was attached to the box.



Reading the information, they discovered they had accidentally found a microsonde weather balloon instrument package that had been launched from an Albuquerque weather station in April 2009. Inside they found a tightly rolled prepaid mailing bag for return to the National Oceanic and Atmospheric Administration for re-use.

With some research they found that these weather balloons can go up to 100,000 feet, transmitting pressure, temperature, wind speed, and humidity data. The information helps with weather fore-casting worldwide. The balloon is filled with hydro-en or helium gas, but eventually bursts and falls to the ground, along with its balloon and parachute. ¤
[N.B. Another weather balloon was visible in the sky the evening of September 19.]

Notes from the PEEC Diary

May 4-5: male painted bunting in Western area
May 5: lazuli bunting, North Mesa
May 5: indigo bunting, Walnut St.
April 29: long-eared owl, Walnut Canyon
June 30: 2 long-tailed weasels near PEEC bird feeders
July 10: doe mule deer eating PEEC bird seed
June 21 and 27: black bear ransacking PEEC bird feeders
August 4: blue grosbeak,White Rock Canyon edge
August 1: PEEC indoor squirrel attack
July 31: Sheep polypore (Albatrellus ovinus) mushroom, Windsor Trail of Sangre de Cristos
September: PEEC bluebird house now home to a red squirrel who bit PEEC administrative assistant when she reached in to clean the birdhouse
December 25: partridge in a pear tree? ¤

PEEC's Jemez Mountain Herbarium

By Chick Keller and Dorothy Hoard

What's a herbarium? It's a library of pressed and mounted plants giving people the ability to identify them. Look at the photo. In the background is the library. The sheets on the table with the pressed plants are kept in the folders in the library. The plants are collected, dried and identified. Then they are mounted and data-based.

Why have a herbarium? A herbarium keeps a concrete record of plants found, where and when and by whom. There are so many species of plants (Los Alamos County has over 850!) that this is the best way to keep track of them. The information about each (identification and where it was found, etc.) is put into a computer database so that it can be sorted and retrieved as needed. Once the herbarium is set up, it can be used for teaching how to identify plants, for making surveys of where plants grow, the history of plants (some of ours are 40 years old), and so on. Another use is to prove that we actually found a given plant. Records that say a unique plant was found in a certain location may be in error due to misidentification of the plant. If it's in the herbarium, one can check whether it's really the species we say it is.

A Little History PEEC's herbarium got started when we were loaned a collection of plants from the Santa Fe National Forest (done by a student at the University of Wyoming) and a small grant for additional supplies. Of the some 1,100 plants in that collection, some 650 are from the Jemez Mountains. Since that time (2005) PEEC has added nearly 700 more. In addition, when LANL found we had a herbarium, they donated their entire collection, complete with three professional herbarium cabinets and a large amount of supplies--mounting paper, folders, etc. The New Mexico Native Plant Society donated another cabinet. A $1,000 grant from LANL allowed purchase of a set of professional plant identification books, starting a growing library of plant identification books.

Why have a herbarium at PEEC? The Jemez Mountains (both the volcanic part and the sedimentary and granite rock parts to the west) are ecologically an island of high altitude habitats surrounded by desert. Thus it's of interest what plants are here. Many of them were "trapped" and isolated 9,000 years ago when the once-cold climate warmed up. Thus, we have species found in the Sangre de Cristo Mountains only at higher altitudes. How our plants have adapted to lower, warmer habitats is part of a mystery. Collecting the plants gives us information to help solve it.

Besides, it's fun to find just how many species we have around here. Until this herbarium was started, no one really knew just how rich Los Alamos County was in native plants. And our collections from the rest of the Jemez Mountains are showing it also to be more diverse than previously thought.

It's a good place for students to learn about botany and to encourage them to perhaps follow a career in this or a related field.

It's a resource for county and state agencies tasked with dealing with plants from forage to endangered ones. Currently our entire database is incorporated into the large state Biodiversity Database at UNM, thus making it available nationwide.

Photo by Chick Keller

* How can I visit the herbarium or help with it?* We'd love to have you visit and perhaps help. There's lots to do and learn. The recognition of our work by being included in the UNM Biodiversity Database means we need to be doing more to improve and extend the collection. If anyone would like to assist with mounting and data-basing, as well as just helping in general, please contact PEEC or come in Tuesday afternoons when Chick is there or Friday afternoons when Dorothy is in. ¤

PEEC
Pajarito Environmental Education Center
3540 Orange St.
P.O. Box 547
Los Alamos, NM 87544

What's inside:

PEEC's Mission Statement: To provide a nature center and outdoor education programs that allow people of all ages to explore the rich natural and cultural heritage of the Pajarito Plateau and to appreciate our connection to the natural world..

Contact PEEC:

- **Attend classes, lectures, programs, events.**
- **Visit the Nature Center.**
- **Sign up for *PEEC This Week.***
- **Volunteer in many ways.**
- **Donate.**
- **Exchange light bulbs.**
- **Join LA Green.**
- **Recycle printer cartridges.**
- **Stop using plastic bags.**
- **Shop in our store.**

Become a member: use the form or web site, plus much more at www.PajaritoEEC.org

	General Membership	**$35**
	Living Lightly	**$20**
	Non-Profit Sponsor	**$75**
	1 Newsletter and PEEC This Week for up to 3 organization members.	
	Penstemon	**$60**
	Benefits of membership plus t-shirt or canvas shopping bag.	
	Sunflower	**$100**
	Benefits above plus additional t-shirt or canvas shopping bag.	
	Wild Iris Donor	**$250**
	Benefits above plus Muench coffee table book.	
	Skyrocket Gilia Donor	**$500**
	We will contact you to determine how to recognize this generous level of donation.	
	Wood Lily Donor $1000	
	We will contact you to determine how to recognize this generous level of donation.	

Joining Is Easy!

Tear off this form, fill it out, and mail it in with your check.

Do it today! Thank you.

Name(s):
_____
Address:
_____
_____
Phone:
_____

Number in Household: _____

E-mail: _____

_____ **Please contact me about volunteering.**

PEEC is a non-profit 501(c)3 organization.

Donations are tax-deductible.

****

Mail checks to:
PEEC
PO Box 547
Los Alamos, NM 87544
Att: Membership

****