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Your Nature Center in Los Alamos

Nature Notes

Volume 10, Number 3 Summer 2011

President's Message

by Rebecca Shankland

We survived. The critters survived. The gardens survived. The town survived.

But the forest--our refuge from urban stress, our giant playground for recreation, our paragon of beauty--has burned.

At PEEC we've had to create a whole new summer schedule, changing the hikes and activities that involved the forests. But that has made us realize how much open space is still alive and waiting for us to explore. Think local—really local. Remember the Olive Street Nature Trail at PEEC, the Anniversary Trail, and your own backyard.

With increased humility about the limitations of our power in the face of nature, we're in a better position to value our natural world more and work harder to preserve it. Living in the smoky atmosphere reminds us how we treasure clean air; burnt forests make us anticipate the return of the wildflowers and songbirds.

PEEC hopes to be a beacon of hope for restoration—of the forest and its creatures and of our own spirits. Come for a visit, take a class, hear a talk, take a hike, and renew your connection to the natural world out your back door.

Update on PEEC Nature Center Building:

We read 14 proposals for a Phase 1 study from architects all over the country. We interviewed five and were delighted with their ideas, enthusiasm, creativity, and competence. The final choice is imminent.

After that selection, several public meetings will be held to discuss locations and requirements for a Los Alamos nature center. PEEC members and supporters will be especially welcome at those meetings, so as you reflect on the Las Conchas Fire, think of what you most value in the environment and how it could be embodied in a new or remodeled PEEC building.

The Secret Life at PEEC during the Fire: Our Unsung Heroes

As the PEEC Board and staff scattered far and wide, Elf, Betty, Foxxy, Link, Scorpia, Flip, Woody, Flash, Tam, the worms, the fish and crayfish stayed comfortably tucked inside the PEEC walls, paddling in their tanks or digging in their shavings, presumably untroubled by the smoke and ash swirling outside.

After a few days, worried PEEC e-mails flew—without Jen and Melanie, who would take care of the critters and the kids' vegetable garden? The PEEC family organized for an in-place rescue: Diane and Evan Noveroske left White Rock and got through the barricade with help from Jessie Ross's husband Chris, a Los Alamos policeman working in town. Then, John and Cindia Hogan were seen on television working to feed the fire-fighters; John was conscripted into another animal and garden run. Finally, Diane and Evan returned after the evacuation order was lifted and did all the needed tasks, plus cleaning and trash.

Thanks to all these great people from all the critters and vegetables at PEEC!

Hope Where There Is Hopelessness

by Terry Foxx, Fire ecologist

For us in the County of Los Alamos the view of smoke on the horizon gives us the sense of "not again." Since I have lived in Los Alamos, I have experienced the La Mesa Fire, the Dome Fire, the Oso Fire, the Cerro Grande Fire and now the Las Conchas Fire. For the past 33 years, as an ecologist and as a resident, I have watched and measured the recovery of areas of the La Mesa Fire and worked on or observed several other fires, including the Dome, Oso , and Cerro Grande.

Out of the sense of hopelessness and grief of losing trees, I have found that watching the area recover from each of these fires has given me a sense of hope and awe at nature's intricate balance and healing. We sometimes only see the loss and not the miracle of rebirth.

Ponderosa pine and other forest systems have adapted to the presence of fire. Fire has been a natural part of the ecosystem of the Pajarito Plateau, but we have lacked understanding of fire's place, the influence of drought, livestock, and forest densities. Thus, fires are now large, hot, and unforgiving (that is another story). Prior to 1900, fires were generally cool and not of such great acreages. But the basic fact is that these ecosystems harbor fire-adapted species.

What are some of the adaptations of plants and animals as related to fire? Because this is a vast and intricate subject, I can only cover a few things in this article. Wait for future articles in *Nature Notes* to learn more.

First, let's discuss **sprouting of trees and shrubs**. There are many trees and shrubs that can reproduce by sprouting: aspen, oak, chokecherry, nine-bark, kinnikinnick, mountain's lover. The list goes on. Post-fire sprouting can occur amazingly rapidly, even in the most severely burned soils. The key is where the growth tissues are found, the depth of the heat from the fire, and an intricate balance of growth factors. Generally, growth inhibitors prevent sprouting in undamaged plants. But when the active growing parts of the plants are removed, the growth inhibitors are suppressed and once dormant growth buds in roots begin to send out sprouts. An area once lifeless, and blackened seems to come to life. Within a couple months sprouts will be three feet tall.

Aspen roots, Oso fire, photo by Terry Foxx

Aspen is quite amazing. Just under the surface of the soil there are hundreds of roots and from each of these a plant can emerge. In a few years, an aspen grove is re-established.

Second comes sprouting of grasses and forbs (wild flowers). Many grasses and wild flowers have underground stems – tuberlike roots, rhizomes, bulbs. These contain growth tissues (meristematic tissues) that can be a source of renewal. Again, fire can stimulate the growth in these underground organs. Soon patches of a plant will appear where before the fire only single plants appeared. In my studies one plant that I never saw before the La Mesa fire was dayflower. It's a beautiful blue and not easily missed. But in the burned area it miraculously appeared. Competition from grasses, shading of trees, and other factors make this plant unable to compete in a dense forest. Once the area is opened, the underground tuberlike roots begin to sprout and the dayflower emerges. Another example is wild onion. which is seen throughout forests, but similarly in burned areas it forms patches.

Another regrowth factor is seeds stored in the soil bank. The soil has an abundance of seeds lying dormant until the right time to sprout. Each seed is protected by a seed coat that prevents it from desiccation. Some seeds can remain in the soil bank for years. Heat from fire can function to help break the seed coat and, with moisture, plants begin to sprout. Prior to the La Mesa Fire, I rarely saw buckbrush in the forested areas because the canopies were dense and competition for water and sunlight prevented these plants from being established. After the La Mesa Fire, buckbrush sprouted throughout the area. It provides good browse for deer and elk. The seeds of this plant have been known to stay in the soil as long as 40 years before sprouting. Another plant is an annual called green thread. A year after the fire disturbance, green thread brightened burned meadows with yellow blossoms.

Third, let's mention **wildlife**. Certainly, wildlife is impacted by the loss of cover and food sources. One thing that amazes me after a severe fire is what is living in that charred soil. In one area of the Cerro Grande Fire that was severely burned, ants were busy collecting fallen seeds and plant parts, spiders were making webs to catch

whatever came their way, and lizards scurried around lapping up the insects. All of these creatures lived under rocks and the heat of the fire spared them. Soon dead trees will buzz with beetles and woodpeckers. Sometimes rare ones, such as the three-toed woodpecker, will busily collect those beetles. Standing in a blackened landscape, it is always amazing to see new life emerging.

Though I am now too old to see a forest again on the mountain, because it will take 30 years for small trees to grow to 20 feet tall, I take heart in the way nature begins to heal. My hope for each of us is that we can look beyond the burned trees and marvel at the intricacy of the ecosystem. Our love for trees is profound and their loss is heart wrenching. But let's not miss the renewal going on all around us.

Next time. Did you know that smoke can be a positive factor in the sprouting of plants?

Terry Foxx is the author of *Out of the Ashes, Lest We Forget,* and *Touched by Fire*. She has written a children's book, *The Forest and the Fire,* which she will read as part of a special afternoon program at PEEC on July 30, for children and adults, about nature's recovery from the fire. She has contributed to scientific articles about fire and the La Mesa fire. Presently, she is writing up her 33 years of research on the La Mesa fire. ☼

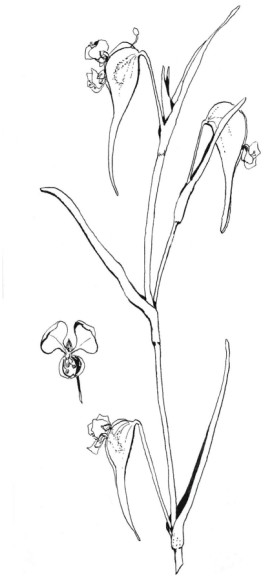
The Drought: Why and What

by Chick Keller

This year's drought is most probably a result of happenings in the eastern Pacific Ocean, which alternate between El Niño and La Niña. Last year's El Niño allowed warming to be one of the highest yet, and New Mexico got considerable moisture, but this year's La Niña has cooled the globe and dried out our state. However, the warm/cool isn't the cause of precipitation changes. That happens because of where moisture in the Pacific finds itself. During El Niño, the warm extreme eastern water of equatorial Pacific evaporates and this moisture makes a beeline for the southwest U.S. During La Niña, the extreme east Pacific is cool (less evaporation) and the warm pool moves to the west. This is why we got little winter moisture to carry us through to the summer monsoons. Hopes are high because, other things being normal, a low snow cover with a warm spring leads to an early monsoon.

However, one thing that hinders monsoon-like rains is lots of smoke from **forest fires**. Monsoons rely on hot temperatures at the surface and cool air aloft. This allows hot, buoyant, moisture-laden air to rise to the altitude where it cools and turns into rain. But forest fire smoke aloft absorbs sunlight and warms the upper air, reducing the tendency of surface air to rise. This stifles the monsoons. So, here's another reason to hope the fires are out as soon as possible.

What do the plants do when there's little winter moisture? You may have noticed that drought means few **weeds**. Weeds are usually annuals that must grow from seed each year. If there's no moisture to germinate the seeds, you don't get the weeds. **Perennials**, on the other hand, don't need moisture close to the surface and so grow apace, although they grow sparingly and bide their time until the monsoons. An exception, of course, is cheat grass which, though it's an annual, is one of the first to make use of the meager winter moisture. Other annuals, such as lambs' quarters (*Chenopodium*), mustards (*Descurania, Sisymbrium*, etc.), Russian thistle (*Kochia*), and various ambrosias, are not much in evidence this year.



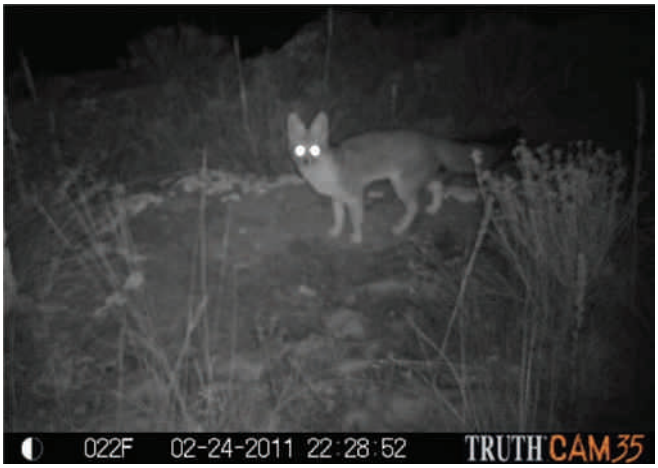
Dayflower, Commelina dianthifolia, drawing by Terry Foxx

Out in the woods you'll still see blooming plants but they'll be smaller and have fewer flowers. Exceptions to this rule are several **shrubs**, which seem to be alarmed at the lack of moisture and so are blooming like crazy, trying to make seed in case things go from bad to worse. With New Mexico's large swings in moisture, plants are pretty smart about these things. Right now everything else is waiting for July's rains. Let's hope they come before the ponderosas give up and begin to die--as they appear to be doing. Be thankful for fewer weeds around, and hope the monsoons will be early and plentiful.

One last thing: we recently got a better idea of New Mexico precipitation for the last thousand years from a side effect of making a National Park out of the Malpais volcanic area south of Grants. Out in the middle of all that lava, researchers found a **treasure trove of Douglas firs**. The lava protected them from the many fires that usually burn up such trees before they get very old. These had an age of about one thousand years! In addition to being out there where there's not much soil, these were particularly responsive to changes in precipitation. The resulting tree-ring record shows that droughts like our current one have occurred in the past, often resulting in Anasazi migrations. The concern now is that global warming will exacerbate future droughts, making recovery much harder. ☼

"What Was That Noise?"

by Paula Barclay



Have you ever wakened in the middle of the night and wondered what was making that sound on your back deck? That was certainly part of my motivation last Christmas when I purchased a motion-activated wildlife camera for my husband. Since then it has brought us enjoyment and entertainment. We've captured photos of enormous ravens at our birdbath, coyotes, Abert's squirrels and even a gray fox that stopped by our back deck almost every night last winter!

We had no idea that we had that much wildlife living undetected around our home. Recently we've been told to expect even more because the fires have decreased their chances for food and shelter.

Wildlife cameras, I learned, are not expensive and quite reliably take very good photos. Most have an infrared sensor and will take photos (or videos) at night as well as during the daytime. I did my research online and read reviews on Amazon.com, as well as many of the large hunting and sporting goods sites.

Many cameras are for sale for less than $100 and run on D cell batteries. They save the hundreds of photos that they take onto a small disc that can be downloaded on to a computer. The camera I purchased for my husband was a Primos Truth Cam.

The wildlife camera makes a little mechanical click when the shutter closes, so usually the animal looks over at the camera in the second shot we get. There is an infrared light at night, so no flash to scare or disturb them day or night.

We have our camera lashed to one of the supports on our deck, but we move it around the yard, seeing what different photos we get. We do seem to get a LOT more activity through our yard in the winter time than in the summer. A friend with a wildlife camera up the street also has said his photos of wildlife have diminished with the warmer weather.

We have water available in our yard year-round. In the winter time we have a heated bird bath. In the summertime we have a fountain and bird bath. As most people who are interested in wildlife know, water is the secret to having wild things in the yard.

For all of wildlife aficionados, I highly recommend considering a wildlife camera. Now you'll know who's tipping over the birdseed container! ☼

Confessions of a Wannabe Birder

by Sue Watts

From the first time I heard of a birder's life list I've tried to be a birder...I really have.

We were up in the Cloud Peak Wilderness of Wyoming. I was with a group that had identified a dark speck swinging over us as a golden eagle.

"And that, Sue," said Carolyn Kennedy (no, not that one), "is a great way to start a life list."

Back at the tent, I dutifully started a life list of birds I had seen, headed by that golden eagle. I would like to ask a birder if I may put a bird on my life list when someone else has identified it. I do know not to list the birds I have seen on TV. To date, I have a fairly respectable number, respectable in view of the fact that most of the birds I "discover" are listed as *common* or *abundant.* However, I'm still fairly hopeless with the general run of things.

Take birding by ear. I've listened to birding tapes and trailed along behind expert birders, listening for all I'm worth to the call of a hermit thrush. But the list of birds I can identify by their calls still stands at raven, canyon wren, and those ubiquitous Eurasian collared-doves. It's apparent that the hard drive in my mind doesn't retain audio information.

That said, I have been improving of late. I remembered a sound maps exercise we used to do with campers . We would stash the participants around the countryside, leaving them with a pencil and an index card with an "X" in the middle. During ten to thirty minutes of enforced people silence, they would record the sounds they had heard, in the direction they heard them, by drawing what it sounded like. For example, a canyon wren's distinctive downward cascading chromatic scale of notes could be drawn as a downward set of steps. So, lately I've been doing sound maps of birds. I go to Cornell University's

website (http://www.allaboutbirds.org), repeatedly listen to their recordings of local bird calls (you can find a list at www.PajaritoEEC.org), draw a sound map of what I hear, and then go outside. I've actually been able to distinguish a Cassin's finch song from that of a house finch.

A dedicated birder friend and I have noticed a difference in the way we look at birds. On a hike, we were trying to figure out an unknown bird hopping at the edge of our visible vision. She dutifully checked off its characteristics while I kept protesting "but it doesn't ACT like a ..." It became apparent that there are two different kinds of birders – the more common birder who learns and identifies the way a bird looks and the rest of us who rely on the Gestalt method of looking at its behavior. Neither one is better, and I suspect the truly great birders use both, but it makes for interesting teamwork when the two types put their different approaches to work.

Recently, I was birding with a new-found friend from Washington. In the course of the morning, we developed the concept of "Slow Birding." Armed with binoculars and bird books, we picked out a place with our backs to the sun so we could see the birds. We sat and waited for the birds to fly by and (preferably) to perch on a nearby branch. We called one bird "the small red out-and-back bird." Based on that description, we then scanned the bird books for just such a character. Since we were in Arizona, most birders would recognize it as a vermilion flycatcher. In the course of several mornings, we managed to discover nine new (to us) birds.

This method also worked well when I searched for the hooded warbler. Now this bird was a BIG DEAL. Birding range maps place the nearest hooded warblers in east Texas. The master birders of the PEEC yahoo birding group had found one in late April and I was determined to see a bird that was not *common* or *abundant*. For an hour, I combed the ravine near the skating rink; my bird count stood at six roosting ravens and a robin. When I climbed back in the car, there was a flicker of yellow not two feet from me. Sure enough, there he was, hopping about in the tree as if to say, "So, do you want to look at me or not?"

http://www.weeksbay.org/

I think I have discovered the root of my problem. I lack the ability to focus on just the birds. On a recent birding hike, I had been captivated by the brilliant blue of a western bluebird, which glowed in the lowering sun and gave me several minutes of pleasure so satisfying I could feel it. Other birds had been seen and noted. However, on the bridge over the canyon, I found myself drawn to the different textures of the evergreens below us and pointed out that some of them were far lower than their "normal" elevation. And on the way home, there was this patch of pasqueflowers... When I finally returned to the land of the living, the real birders were several hundred yards farther on. I could have a form of ADD, but I prefer to quote Robert Louis Stevenson, "The world is full of a number of things; we should all be as happy as kings" (queens). Enjoy. ☼

The Value of Education: Return of the Slime Molds

by Dave Yeamans

In May I attended the fascinating and entertaining presentation at PEEC by Dr. Relf Price on slime molds. I learned about plasmodia, fruiting bodies, protista, and the amoeba-like mobility of a quasi one-celled being. Slime molds produce spores from which new molds of their kind begin a new development cycle. Each spore can, in the proper environmental conditions, develop into a one-celled organism that goes around eating bacteria mostly from rotten logs. As it goes about its business, its nuclei divide and the cell wall expands. Eventually there are many (thousands? tens of thousands? millions? I don't know) nuclei within the single cell wall. This blob or plasmodium is mobile and oozes around eating more and more bacteria until it is ready to settle down and produce fruiting bodies – the spore developers and dispersers. At a signal – perhaps from a single-cell-phone? – the plasmodium hunkers down and all those nuclei become individual cells of their own that work together as an immobile community to produce the fruiting bodies and spores.

Later in May I went out on a reconnaissance trip in the Valles Caldera looking for trees with old carvings on them. A former timbering manager was with us. He explained many things about felling trees and about where to look for carvings. At the end of the day he felt comfortable enough with us to tell us a strange story he'd kept to himself these many decades for fear of being thought crazy.

At dusk he'd cut a large tree that was hollow for many feet up into the trunk. He peered into the dark husk and saw a gelatinous, gleaming clear object the size of his fist. He grabbed a stick and poked it. It immediately split into two

smaller blobs, which started moving about. He went to a friend, brought him over, and they both looked in on this odd thing. It had changed color and had quit moving, in fact, had become somewhat less jelly-like.

The large slime mold, Fuligo septica, that is common in New Mexico.

I think I know what that might have been, I told him, and eagerly spilled all my new, approximate, and possibly inaccurately learned knowledge. He was ever so grateful to hear that something as well-known and weird as a slime mold exists and that he isn't crazy after all, at least not because of seeing that phenomenon. Maybe he's as crazy as the rest of us for looking at trees with such intensity.

Immature sporangia that each will eventually contain hundreds of spores.

You never know where you might use some-thing you've learned. Keep up the good work, PEEC.

Note: Relf Price contributed three photos and comments.

☼

A small group of sporangia from the genus Stemonitis, common on the surface of decaying conifer logs.

Birdscape Tour

On September 10, Saturday, 10 am to 2 pm, PEEC will host a tour of yards that have been landscaped to attract birds. We are calling it the Birdscape Tour.

The fall migration is around this time and there will be natural berries and the seed heads of the flowers for the birds to eat, as well as remarkable items and special vegetation created for them by the yards' owners.

The tour is free. PEEC will appreciate donations and will be selling books and items relating to birds. This will be a unique way to learn about birds, get new landscaping ideas, meet friends, and join PEEC and the PEECbirders online group.

The following families have agreed to participate in the tour.

1. Terry and Steve Hodapp, 947 Quartz
A small busy backyard it is. The centerpiece is a 18x6x3-foot pond with small waterfalls. The pond is flanked by choke cherries, service berries, golden raspberry bushes, grapes, currants, and blueberries. The yard has a small patch of Kentucky bluegrass for sitting. Two raised beds for gardening cover almost half of the back yard area. In the summer, Terry feeds thistle seed for the finches and hummingbird nectar for the hummingbirds. In winter, the hummingbird nectar is replaced by sunflower seeds in the shell and chipped, along with millet.

2. Chick and Yvonne Keller, 4470 Ridgeway Drive
The Kellers use various kinds of bird feeders and different types of foods, i.e., sunflower seed, niger, suet, and nectar, to attract birds. Birds can also feed on the seeds of native grasses and other plants; berries; insects on the leaves of the aspen, in the bark of the pines, and in the plant litter on the ground: acorns from Gambel oak: and nectar from such flowers as penstemons, salvias, and honeysuckle vines. Trees and shrubs provide cover and nesting places while a small pond with a bubbler and a large saucer provide water.

3. David and Marilyn Yeamans, 392 Navajo Road
David and Marilyn Yeamans have preserved natural vegetation, soil, and rock to provide perches, cover, foraging, and nesting areas for birds. They have added bird baths, a fountain, and feeders to their lot overlooking Barranca Canyon. It all started as a sculpture called "Too Many Bird Baths" and now they have over 100 bird species visiting the yard, as many as 46 in one day.

4. V. K. and Selvi Viswanathan, 690 Los Pueblos
The Viswanathans' yard lies between two canyons, Barranca and Bayo. So they decided to keep the yard as

natural as possible, though many little ponds, brooks and feeders are provided. Birds then have access to water to drink and to bathe to keep their feathers in good condition. A new hummingbird garden and a butterfly garden that becomes a songbird garden in the fall are recent additions. Selvi usually brings her feeders inside at night. ☼

Acrobatic chickadee photo by Hari Viswanathan

Elegant Visitors at Ashley Pond

Every week members of the PEECbirders group gather for early morning birding. Different places, different birds.

Dave Yeamans didn't expect what he saw on April 25 at Ashley Pond, however: a great egret and a snowy egret, two beautiful water birds definitely rare to Los Alamos. Ring-billed gulls came along, too. They can be seen on inland lakes and waterways but Ashley Pond is not their usual place.

Dave posted photos and there followed a flurry of messages on PEECbirders yahoo group site. Verifying the identification. Wondering why they were here. Urging the parks department to provide more bird-friendly cover in future landscaping at the pond.

Snowy egrets are known for yellow feet, as in the "golden slippers" song, black legs, and dark bills. Their delicate plumes on head, neck, and back were collected in the nineteenth century for ladies' hats. The birds faced near extinction but have recovered in the twentieth century.

Great egrets are much taller with long, stout yellow bills and black legs and feet.

Adult ring-billed gulls are white with gray backs. They have a distinctive black ring mark near the tip of the yellow bill.

The birds were seen feeding on fish in the pond for a few days; then they left. ☼

Photo by Dave Yeamans

Want to see what the slime molds really look like? View this newsletter <u>in color</u> at PEEC's website! ☺

PEEC Interest Groups

PEECbirders: birding in Los Alamos County. See http://www.pajaritoeec.org/outreach/birding.php

PEEC Family Nature Group: a group for families to schedule fun times in nature together. See "Green Hours Hikes" at http://www.pajaritoeec.org/programs/calendar.php

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PEEC This Week

weekly e-mail alerts about classes, events, nature and the environment. Anyone who has an e-mail account can receive them. To start, send a message to Webmaster@pajaritoeec.org. These weekly e-mail alerts always include PEEC activities and local information about nature. You also can contribute appropriate notices.

	General Membership	**$35**
	Living Lightly	**$20**
	Penstemon *Benefits of membership plus t-shirt or canvas shopping bag.*	**$60**
	Sunflower *Benefits above plus additional t-shirt or canvas shopping bag.*	**$100**
	Wild Iris Donor *Benefits above plus Muench coffee table book.*	**$250**
	Skyrocket Gilia Donor *We will contact you to determine how to recognize this generous level of donation.*	**$500**
	Wood Lily Donor *We will contact you to determine how to recognize this generous level of donation.*	**$1000**

	Non-Profit Sponsor *Newsletter and PEEC This Week for up to 3 organizational members.*	**$75**
	Corporate Sponsor *Newsletter and PEEC This Week for up to 3 organizational members.*	**$100**

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.

Joining Is Easy!

Tear off this form, fill it out, and mail it in with your check or go to the website www.PajaritoEEC.org. 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.*

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

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