



# Nature Notes

Pajarito  
Environmental  
Education  
Center  
Volume 9, Number 2

Your Nature Center in Los Alamos  
Spring 2010

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## President's Message

by Chick Keller

### Why PEEC Teaches

One June day in the mountains of Pennsylvania I was sitting outside a cabin of one of my father's friends. He had discovered a small snake covered with diamond-like patterns and said it was probably poisonous. As a thirteen-year-old I had little standing in this group of older, more experienced men, but I suggested it was instead an immature Blacksnake. My father's friend took exception. He knew snakes. But my father came to my defense and in the end everyone was amazed that a young Blacksnake could have such intricate patterns on its skin. This saved the snake from being killed, which was what most people did with poisonous snakes that turned up around their cabins back then.

This then is a cautionary tale about why it is important for organizations like PEEC to teach our children how to identify and understand nature in all its guises. And PEEC is doing this. There are any number of "identification" classes as well as ones that take the next step and teach why animals act as they do--for reproduction, defense, etc.

But there is another motivation for PEEC to introduce nature into people's lives. Hal Borland, long-time nature writer for the *New York Times*, put it this way: In March, the birds begin singing, but not apparently for any "useful" reason since mating is several months in the future. Thus he argues that much of what's going on in nature may be just for beauty's sake. He lists sunrise and rainbows as examples and "...nature abounds and overflows with what we know as beauty, whether it is song or color or rhythm or form. It doesn't have to be useful any more than the sheer delight we sense in the voice of the song sparrow now."

We think that PEEC's mission encompasses both these approaches. Certainly we teach the facts of nature--the what's and how's and why's. And it is very important that we do this. But PEEC would be remiss if didn't point out that nature has a beauty that makes our lives so much more wonderful. This recognition of breath-taking beauty and awe seems to be a particularly human reaction to the world around us. In the end it is one of the reasons humans learn about the natural world--the facts that we need to know lest we destroy something ultimately useful to our well being, but also that to be truly human is to react to the beauty of nature and to be nourished by this. This is why PEEC offers talks and courses in nature writing--journaling, poetry, etc. and in nature art--photography and all forms of artistic expression. The natural world can be useful and needs to be understood and preserved, but it is also magical and delightful, surprising and startling, inspiring and awesome. Enjoy.

## Crayfish, Lizards, Frogs, and Temperatures: PEEC Participates in Local Science Fair

In the brisk early morning of January 30, four intrepid members of the PEEC board of directors headed to the high school to serve as judges for the Los Alamos district science fair. The four judges were Chick Keller, Bob Dryja, Mary Carol Williams, and Jennifer Macke. In addition to evaluating sets of student projects in their areas of expertise, the four judges got together to decide on the winners of the PEEC special prizes.

Every year since 2003, PEEC has awarded these prizes to local science fair projects that are good examples of the study of nature and the environment. The judges had a difficult time narrowing down the number of good nature-related projects to just the small number of prizes available. We are pleased to announce the PEEC science fair winners, as follows. [by Jennifer Macke]

Senior Division

### **“Crayfish Populations in Comparison to Water Quality”**

Joe Abeyta and Nate Clements, 10<sup>th</sup> grade, LAHS

Junior Division

### **“X-Frogs: Does Pond Water Pollution Affect Some Frogs?”**

Olivia Snyder, 6<sup>th</sup> grade, Mountain School

### **“A Statistical Analysis of Temperature Data of Two American Cities”**

Aniruddha Nadiga, 7<sup>th</sup> grade, LAMS

### **“The Effect of a Difference in the Circadian Rhythms on the Behaviors of Insects”**

Daniel Ahrens, 8<sup>th</sup> grade, LAMS

Elementary Division

### **“Critter Condos”**

Ms. Patterson’s Class, Mountain School

### **“To Mow or Not to Mow”**

Ms. Altherr’s Class, Mountain School

### **“What Temperature Would a Collared Lizard Like?”**

Junseo Kim, 4<sup>th</sup> grade, Mountain School

## **Abstract of the Science Fair Project on Crayfish**

Because the award-winning project on an invasive species of crayfish will impact the management the Valles Caldera, we are reprinting the abstract below with the permission of the authors, Joe Abeyta and Nate Clements.

### **Abstract**

The purpose of this study was to survey crayfish populations in the Valles Caldera National Preserve and to determine if grazing was affecting crayfish populations. Several tests of water quality were also performed to determine whether the health of the streams had anything to do with the amounts of crayfish found.

Twenty-one sites throughout the Valles were surveyed, and crayfish were captured using modified commercial traps. Male crayfish were identified based on the structure of their pleopods [swimming legs], and the weight, total length, and carapace length were determined. These sites were also tested for water quality.

The invasive crayfish species *Orconectes virilis* was found in streams through the Valles. No significant differences were seen in weight or length measurements of *O. virilis* Form I or II males, or females, inside or outside of ungulate exclosures or between different stream sites.

The non-native *Orconectes virilis* crayfish that have invaded the Jemez watershed now must be considered in any watershed/riparian zone management program in the Valles.

The water quality tests performed were all in range based on the New Mexico Game and Fish standards.

The Valles appears to be managing cattle and elk grazing well, as there is no significant difference between crayfish populations inside or outside ungulate grazing exclosures or between stream systems. This suggests that ungulate grazing pressure is not negatively affecting the riparian zone of Valles streams. ⚙

## Family Nature Connection: Butterflies

by Michele Altherr

Its colors are often striking, its flight mesmerizing, and its life cycle fascinating. What is it?

It's the beautiful butterfly that so many of us enjoy watching. However, butterflies do more than make the world a pretty place. Butterflies carry pollen from flower to flower and help many plants, including fruits and vegetables, grow. Their larval form, the caterpillars, are at the bottom of the food chain and provide food to many birds, lizards, and other animals.

Scientists sort and classify life. Butterflies, skippers, and moths are in the order called Lepidoptera, which means scaled wings. Indeed, if you have a chance to look at a butterfly's wing, you will see that it is covered in tiny scales. The scales come off easily when you handle the wing. Butterflies and moths are the only insects to have these. You may wonder why they are called butterflies, since butter is more of a familiar item in your fridge. Some experts think that the word may come from a common group of yellow European butterflies, the sulphurs. At one time the sulphurs were called the "the butter-colored fly," which was shortened to butterfly and eventually went into common use for all butterflies.

Metamorphosis is the term that describes the four very different stages in the life cycle of a butterfly. First, the female butterfly lays her eggs on a plant that will provide plenty of food to the caterpillars when they hatch. This plant is specific to each butterfly species and is called the host plant. The second stage starts when the caterpillar hatches from its egg. During this stage, the caterpillar is an eating machine and even eats its own eggshell. Some species may eat 20 times their own weight! Next, the plump and well-fed caterpillar enters the third stage, the pupa or chrysalis stage. The

caterpillar attaches itself to a stem, and then slips out of its old skin to expose a tough new skin. This hardens and becomes the chrysalis. Inside the chrysalis, the caterpillar dissolves into a thick liquid and reforms as a butterfly. When ready, the butterfly emerges from the chrysalis. This is the fourth and final stage of its life cycle. The butterfly flies away in search of nectar plants to feed on. It will mate and the cycle will begin anew.

Butterflies have interesting adaptations for living. Their skeletons are on the outside instead of the inside like ours. They use their wings to glide and soar just like a bird.

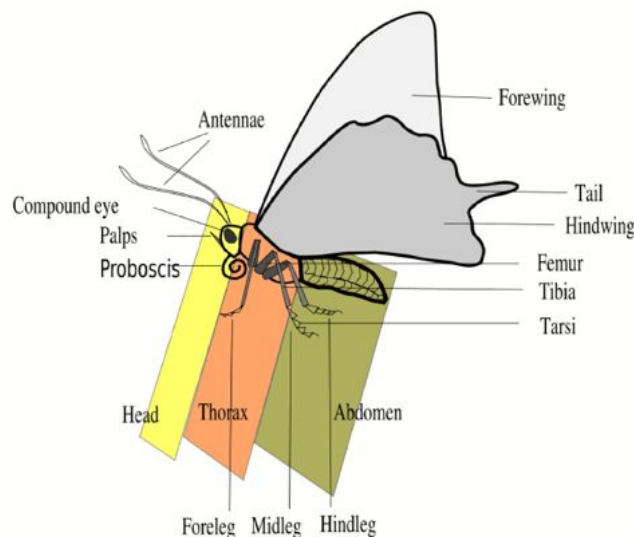
They taste with their feet or tarsi. As soon as they land, they can taste whether the flower is the one they want. They also use their antennae to find nectar through the sense of smell. The nectar is found deep inside a flower, and sipping it requires a very special drinking tube. So, butterflies have a very long drinking straw called a proboscis that they keep curled under their heads. When they

find nectar, they unroll the proboscis and take a sip.

Would you like to know what it is like to drink like a butterfly? Try connecting three to four straws together so they become one long straw. Then fill a glass with fruit juice and put your extra long straw in it. Now you are ready to try sipping nectar just like a butterfly!

### Plant a Butterfly Paradise

This spring the Kinnikinnick Club kids and other community members plan to work together to plant a butterfly garden at PEEC. The groundbreaking ceremony will be at the Earth Day Festival on Saturday, April 24<sup>th</sup>. By being careful observers, we hope to develop a list of host plants and nectar plants for each species in our area. With this knowledge, all  
(continued on page 7)



## The Difference a Decade Makes: PEEC Plans Earth Day (Week) 2010

Information from Terry Foxx, Earth Day Chair

The Earth Day Festival is a big event for all ages. On Saturday, April 24, from 10 a.m. to 2 p.m., come to PEEC on Orange Street and help us celebrate Earth Day. There will be a performance by **Clan Tynker**, a daring show of stilts, rope walking, and juggling. In addition, there will be booths representing different organizations displaying their **green products and information**. Finally, we will have a **ground-breaking for a Butterfly Garden** at PEEC, a project of the elementary schools' Kinnikinnick Club.

On a community level, Earth Day activities will recognize important community events: the **Cerro Grande fire (May 2000)**, the **founding of Pajarito Environmental Education Center (June 2000)**, the **beginning of the Volunteer Task Force**, a **community-based volunteer group**, as well as **Family YMCA**.

Nationally, this year's Earth Day theme is

volunteerism: "A Billion Acts of Green." Our theme, "The Difference a Decade Makes," recognizes volunteers, plus a decade of working together to recover from the fire and to create a nature center with environmental education programs.

☼ **"Touched by Fire: Hands that Help, Hands that Create."** April 3 - 30, Mesa Public Library. Opening on April 8, 5:00-7:30; readings at 6:15 and talk at 6:30.



This year PEEC's activities span the month of April. In recognition of the Cerro Grande fire and the volunteerism it generated, PEEC has joined with Mesa Public Library. The art display will focus on artwork done at the time of the Cerro Grande fire and since that time. We also plan a display about the founding of Pajarito Environmental Education Center, the Volunteer Task Force, and Family YMCA, with a Wall of Volunteers, recognizing over 2000 volunteers who have helped in environmental education and restoration over the past ten years. The show will run from April 3 to 30, with the works of about 40 artists. At the opening on April 8, Craig Martin, Los Alamos open space specialist, will talk about the landscape recovery since the Cerro Grande fire. Readings and a publication recognizing the community and its experiences after the fire are also planned.

☼ **The Bradbury Science Museum** will have a display of *shadow boxes* made after the fire, showing items that were burned.

☼ **Earth Day Tabloid, *Los Alamos Monitor*, April 14**

This supplement to the newspaper will have a schedule for the week of Earth Day and will include articles about the environment. It will help the community find organizations that have green products. It is a chance for businesses and community groups to advertise their products and services.

☼ **Birthday Party for PEEC: our major fund raising event, a *Nativo* meal** on Sunday, April 25, at Hilltop House. 4:00-7:00 p.m. Tickets \$50 for one, \$95 for two, includes \$30 tax deductible for one ticket, or \$55 tax deductible for two tickets. Tickets can be obtained from Board members or at PEEC.

The unique *Nativo* meal will be prepared with foods that were found in the ancient Americas including corn, beans, squash, turkey, buffalo, trout, seeds, berries, and cocoa. There also will be an auction of nature services, including some special rafting adventures, birding trips, geocaching, and garden consultations.

☼ **"Restoring Southwestern Forests: Goshawks, Food Webs, and Ecosystems,"** a talk by Dr. Richard Reynolds, April 22, 7:00 p.m. Bradbury Science Museum. From 6:00-7:00, a reception, plus live forest-dwelling owls being from the Santa Fe Raptor Center.

Speaking on the actual Earth Day, Dr. Richard Reynolds, Research Wildlife Biologist at the Rocky Mountain Research Station, Fort Collins, Colorado, will give a free talk about a goshawk conservation strategy that is ecologically based. It will aid in restoring natural species diversity and the sustainability of Southwestern forests. The talk is sponsored by the Los Alamos National Laboratory. ✨

✿**Student Symposium, Forest Recovery after the Cerro Grande Fire**, April 28 at Fuller Lodge. 6:30

Honoring the outdoor education of children over the past decade, there will be a presentation by students of Mountain, Aspen, Chamisa, Pinon, Middle School and the YES Corps. This long-standing research project features data that illustrates the destruction, then recovery, of the forest.

✿Earth Day Guided Hikes will help in the understanding of the environment and archaeology of this area. Free.

April 17, 9:00 a.m. Rory Gauthier will lead a hike to Duchess Castle.

April 18, 4:30 p.m. Chris Judson will lead a hike to the La Mesa Fire area.

April 24, 9:00 a.m. Michael Di Rosa and Craig Martin will lead a Sierra Club sponsored hike on the Mitchell Trail.

For more information about the hikes, lecture, party and other Earth Day events, please call PEEC at 662-0460 look at the website at [www.PajaritoEEC.org](http://www.PajaritoEEC.org). Also, this is a good time to be watching for events announced in **PEEC This Week**, the weekly e-mail alerts on local environmental activities, especially at PEEC. Anyone with e-mail can subscribe. Send a message to [Webmaster@PajaritoEEC.org](mailto:Webmaster@PajaritoEEC.org) PEEC contacts are Terry Foxx, chairperson of the Earth Day events, and Peter O'Rourke, fund-raising chair, and Jennifer Macke, tabloid editor. PEEC appreciates individuals and community groups who band together to celebrate Earth Day. Thank you! ✨

## Saving the Northern Goshawk

Excerpts from online sources: [biologicadiversity.org](http://biologicadiversity.org), [allaboutbirds.org](http://allaboutbirds.org), [usf.edu](http://usf.edu)

An agile and swift predator with unnerving red eyes, the Northern Goshawk is legendary for its ferocity, beauty, and amazing flight skills; in medieval Europe, goshawks were the most prized of all falconry hawks.

Darting through trees beneath the forest canopy, they're top-level predators. But as mature and old-growth forests suffer death by a thousand cuts, so do goshawks. In turn, their decline unravels forest ecosystems and puts stress on other species.



In order to save the goshawk and the forests it depends on, the Center for Biological Diversity launched an ambitious campaign to list the northern goshawk as endangered and in so doing, to protect all mature forests from Alaska to Mexico. Failure spelled success: Although the U.S. Fish and Wildlife Service kept the goshawk off the endangered list — despite two Center petitions and several lawsuits — the campaign compelled the U.S. Forest Service to dramatically improve protection of mature and old-growth forests across the West. New goshawk management plans were established in Arizona, New Mexico, Utah, Colorado, California, Oregon, and Washington. The Center has conducted scientific research on goshawks and published an online review of goshawk research and conservation issues.

### Cool Facts

- The Northern Goshawk is well known for its fierce defense of its nest. It commonly attacks people and other animals that approach the nest too closely.
- Attila the Hun wore an image of a Northern Goshawk on his helmet.
- The name "goshawk" comes from the Old English words *gos*, meaning goose, because goshawks prey on geese, and *hafoc* meaning hawk.
- It is pronounced as if the words are still separate, without any "sh." ✨

## Who's Been Walking in My Yard?

by Esta Lee Albright, including notes from a class by Amy Roberts

Who's been here? Maybe a mouse. Maybe a mountain lion. In February Amy Roberts gave a useful class at PEEC for families that had been wondering about the tracks in the snow on their yards and hiking trails. Even city folks may be living on mesa-top highways for wildlife.

Amy urged us to watch for patterns of the tracks we find. A wild animal, just traveling through, is likely to leave evenly spaced tracks. But a domestic dog, for instance, probably veers right, left, forward and back, leaving an uneven trail.

Tracks include not only the usual paws and hooves, but marks from tails dragging the ground and scratches on trees and other objects, too. Up-and-down scratches on trees probably were made by antlers of deer and elk. Bucks rub their antlers on tree trunks to scrape off a soft membrane called velvet, or to leave a scent to mark territory.

Bears scratch crosswise on a trunk. This may differ in town. For example, PEEC's bird-feeding station obviously had a visiting bear last fall that left long scratches on the trash roller cart. The bear also opened the tightly closed bird seed container, ate all the seed, threw the bird feeders around and bent up the suet feeders.

Amy showed us tell-tale details of tracks from canine (dog) family and feline (cat) family wildlife. Coyote and other dog tracks will show marks at the ends of toes where the claws left small indentations. On the other hand, bobcats and other cats have retractable claws and their toe prints will be cleanly rounded. (See page 7.) Amy emphasized the size of cat tracks – bobcat tracks are bigger than domestic cat tracks and mountain lion tracks are even larger. "Once you see a mountain lion track, you'll understand," she said.

There are other signs that wild animals live among us. The type of food available is an indication of what type of animal is here. First, there's the shape of the scat (little kids often call it poop): predators leave tubular-shaped scat and prey animals leave pellets. A willow with bark peeled at its base may have presented food for a beaver. Seed-bearing

shrubs in the yard attract birds and small rodents. Insect-eating birds usually don't winter over here, since their food is gone.

Where there is a food supply, there may be a home. Nests are built by birds and squirrels. Squirrels' nests up in trees are characteristically messy, while birds' nests usually are carefully woven and neat. Bare branches in winter reveal nests. Dens are dug by chipmunks, coyotes, and bears.

If we're lucky, we hear vocalizing: chirps of chipmunks, howls of coyotes, the extremely diverse sounds ravens can make. Once we figure out the calls, we know wildlife is near.

Homes, food supplies, and travel routes may be littered with fur, feathers, and even bones. We need to be aware that federal and state laws prohibit the general public from collecting feathers.

Any part of protected birds, live or dead, including feathers, claws, bones, skins, or taxidermy-mounted birds cannot be possessed without an appropriate permit. (Learn more at [www.birdiq.com](http://www.birdiq.com))

In New Mexico's dry air, bones do not disintegrate as fast as they do in other climates. Skulls are an interesting way to identify animals. Amy tested us using skulls at PEEC that show differences between prey and predator. Round holes indicating eyes were on the sides of the head tell us the animals needed circular vision to watch for predators, while a predator's eye holes show straight-ahead vision for focus on prey. As for birds, again, size makes a point. A turkey skull may resemble a songbird's, but the size difference is obvious.

Skulls indicate diet, too. Herbivores' skulls have flattened teeth for grinding and carnivores' skulls show sharp incisors for tearing.

Learning about tracks is enhanced by going outside and finding them. Tracks in snow are plentiful and get our attention, though melting and re-freezing can alter tracks and make them hard to identify. It helps to join a class like Amy's or search with an experienced tracker.

As spring comes, wildlife looks for food and homes. The softened soil of springtime, "Mudtime in the Rockies," continues our opportunities to see what wildlife is around us. ✿



**(Butterflies, continued from page 3)**

of us in Los Alamos can help restore their habitat by planting butterfly gardens at our homes. For a list and pictures of common butterflies in Los Alamos, visit the PEEC web site. The North American Butterfly Association is another good resource (<http://www.nababutterfly.com/>). At PEEC we are interested in what kinds of plants you see butterflies and caterpillars using for feeding. If you have information, please contact Selvi Viswanathan ([hariselvi@juno.com](mailto:hariselvi@juno.com)), Dorothy Hoard ([DorothyH@swcp.com](mailto:DorothyH@swcp.com)), or Michele Altherr ([mjaltherr@gmail.com](mailto:mjaltherr@gmail.com)).

*Butterfly diagram from Wikipedia.com*

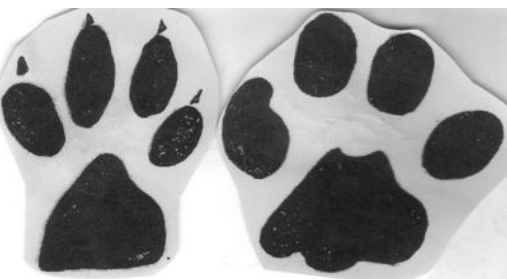


**Experience with Butterfly Gardens**

We've applauded Selvi Viswanathan as having the only garden in Los Alamos that is a certified butterfly garden by the North American Butterfly Association. On April 24 we will dedicate the second certified butterfly garden, this one at PEEC. With our short growing season, propagation of nectar plants is a challenge, but PEEC, Selvi, Dorothy Hoard and others will help. Our area lacks some of the chemicals and spraying that threaten butterflies world wide, so gardens here are important.

PEEC's butterflies were welcomed in March when a child in the Kinnikinnick Club spotted a yellow with black butterfly already visiting here.

"Anyone who is interested in the project would need to be able to approve a basic list of butterfly nectar and caterpillar food plants that are native to your area," writes Jane Hurwitz from the American



from  
Amy  
Roberts' class  
materials

**Coyote track**

**Bobcat track**

Butterfly Association. Information from the association tells us that there are around 275 certified butterfly gardens nationally; the certification program will be two years old in June 2010.

Selvi writes, "Some names of the butterflies I have seen in our yard: tiger swallowtail, black swallowtail, monarch, common wood- nymph (rare, seen for the first time in 2009), painted lady, mourning cloak, and a few other yellow and white butterflies that I could not identify."



**A Gift to Los Alamos**

In an environment of advanced science and technology, the natural environment is needed to provide a balance. PEEC helps the people of our county use, conserve, and enjoy amazing beauty in nature. In keeping with our population's thirst for knowledge, PEEC teaches as it enhances, for our school children and for all ages.

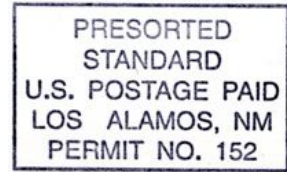
In return for PEEC's gift to Los Alamos, people need to become members, to contribute, and to realize benefits. The nature center is open to be explored. Many lectures and classes are free. Members at even the most economic levels get discounts on class fees and gift shop items. PEEC's mission statement: "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." Do you agree with that philosophy?

If you do, please review the membership levels on page 8 of this newsletter. Are you already a member? If so, thank you; now please encourage a friend to join. Use the form on page 8 or pass along our web site address: [www.PajaritoEEC.org](http://www.PajaritoEEC.org).



**At this time please check the month and year on the mailing label attached to your copy of Nature Notes. It's the month you need to send in a renewal; PEEC needs your ongoing support.**

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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.

<b>General Membership</b>	<b>\$35</b>
<b>Living Lightly</b>	<b>\$20</b>
<b>Penstemon</b> <i>Benefits of membership plus t-shirt or canvas shopping bag.</i>	<b>\$60</b>
<b>Sunflower</b> <i>Benefits above plus additional t-shirt or canvas shopping bag.</i>	<b>\$100</b>
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<b>Skyrocket Gilia Donor</b> <i>We will contact you to determine how to recognize this generous level of donation.</i>	<b>\$500</b>
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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.*

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